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Welcome!

*Note:* Up until now, this manual contains only basic information on how to operate the software using the new **ribbon** interface. More detailed instructions will be added in a later edition.

Tip: A table showing which ribbon command corresponds to each menu command can be found here: [Menu commands and corresponding ribbon commands](#).

Welcome to BasicMaker!

This manual describes how to use BasicMaker, a programming environment that allows you to control TextMaker, PlanMaker and other VBA-compatible Windows programs using SoftMaker Basic scripts.

*Note:* BasicMaker is available only under Windows. It is not included in all versions of SoftMaker Office.

The manual is divided into the following chapters:

- **Welcome!**
  The chapter that you are currently reading. It contains information on the general use of BasicMaker.

- **Using the script editor**
  In the second chapter, you learn everything about the operation of the script editor of BasicMaker, which you use to build, execute and test your scripts.

- **Language elements of SoftMaker Basic**
  Here you can find basic information about the syntax of SoftMaker Basic.

- **BasicMaker and TextMaker**
  BasicMaker was primarily developed in order to be able to program TextMaker and PlanMaker. This chapter contains all details about programming TextMaker via BasicMaker scripts.

- **BasicMaker and PlanMaker**
  In this chapter you will find information about programming PlanMaker via BasicMaker scripts.

- **Commands and functions from A to Z**
  This chapter covers descriptions of all commands and functions available in SoftMaker Basic.

---

**What is BasicMaker?**

BasicMaker is an easy to use development environment for the programming language **SoftMaker Basic**.
Welcome!

**Note:** BasicMaker is available only under Windows. It is not included in all versions of SoftMaker Office.

**What is SoftMaker Basic?**

SoftMaker Basic is modeled after the industry standard *Visual Basic for Applications (VBA)* from Microsoft. It is a rather easy to learn programming language that is optimized to work together with applications. For example, with some simple Basic instructions, you can change fonts in a TextMaker document, open another document etc.

BasicMaker does not produce directly executable program files, as it does not contain a compiler that creates executable files. Instead, you build so-called *scripts* with BasicMaker. These can be opened and executed from within BasicMaker.

An overview of the language elements of SoftMaker Basic and its application can be found in the chapter *Language elements of SoftMaker Basic*. For an A-Z reference of the Basic commands available, see the chapter *Commands and functions from A to Z*.

**What does BasicMaker consist of?**

BasicMaker consists of the following components:

- The control center of BasicMaker is the *script editor*, for you to create and edit SoftMaker Basic scripts. For information on how to operate the editor, refer to the chapter *Using the script editor*.

- Integrated into the editor is an *interpreter* for the programming language SoftMaker Basic. This interpreter is responsible for the execution of the scripts. SoftMaker Basic scripts cannot be compiled to executable programs, but have to be started from the script editor.

  You can also execute a script from inside TextMaker or PlanMaker. When they are running, choose the menu command **Tools > Run Script** and select the script to run. BasicMaker will then execute the script.

  Further information about running scripts can be found in the section *Starting scripts*.

- Beyond that, a *Debugger* for testing scripts is integrated in the script editor, so that you can process a script step by step and inspect variables. This helps to find errors. You can find more information about this in *Debugging scripts*.

- Finally, BasicMaker contains a graphical dialog editor. You can use it to create dialog boxes which allow users to interact with your scripts. More information about this can be found in *Using the dialog editor*.
Using the script editor

In this chapter, you will learn how to work with BasicMaker's script editor:

- **Starting BasicMaker**
- **Commands in the File menu of the script editor**
- **Commands in the Edit menu of the script editor**
- **Commands in the View menu of the script editor**
- **Commands in the Insert menu of the script editor**
- **Commands in the Program menu of the script editor**
- **Commands in the Tools menu of the script editor**
- **Commands in the Window menu of the script editor**
- **Starting scripts**
- **Debugging scripts**
- **Using the dialog editor**

Starting BasicMaker

To start BasicMaker, do any of the following:

- **Starting BasicMaker from the Start menu**
  
  You can start BasicMaker by clicking successively on **Start > All Programs > SoftMaker Office > Utilities > BasicMaker** in the **Start** menu.

  BasicMaker's *script editor* will open. It can be used for creating and editing scripts as well as running scripts. For details on each of its menu commands, see the sections that follow.

- **Starting BasicMaker from TextMaker/PlanMaker**
  
  You can also start BasicMaker from within TextMaker or PlanMaker. From the main menu in TextMaker/PlanMaker, choose the menu command **Tools > Edit Script**.

- **Starting BasicMaker from TextMaker/PlanMaker and immediately running a script**
  
  When you invoke the menu command **Tools > Run Script** in TextMaker/PlanMaker, a file dialog appears. Choose a script, confirm with **OK**, and the script will be executed.
The same happens when you invoke BasicMaker using the command `basicmaker /s scriptname.bas`. BasicMaker will start, run the specified script, and then close.

---

**Commands in the File menu of the script editor**

With the menu commands in the *File* menu of the script editor, you can open, save, print and manage files:

- **File > New**
  Creates a new (empty) script.

- **File > Open**
  Opens an existing script.
  You can also open VBA scripts (VBA = Visual Basic for Applications), however, not all VBA commands are supported by BasicMaker.

- **File > Close**
  Closes the current window.

- **File > Save**
  Saves the script in the current window.

- **File > Save As**
  Saves the script in the current window under another name and/or in another folder.

- **File > Save All**
  Saves the scripts in all open windows that have changed since the last time they were saved.

- **File > File Manager**
  Opens the file manager, which you can used to easily find, open, delete and print files. More information about this can be found in *Using the file manager*.

- **File > Page Setup**
  Lets you adjust the paper format and margins for printing.

- **File > Print**
  Prints the script in the current window.

- **File > Exit**
  Exits BasicMaker.
Using the file manager

The file manager displays a list of documents from one or more folders and lets you open, print, delete or view any document with a click of the mouse. Furthermore, you can search for files.

To start the file manager, choose the menu command File > File Manager.

To invoke a command, select a file and then click on one of the buttons. The buttons in the file manager have the following functions:

Open
Clicking this button will open the selected file.

Close
Clicking this button will close the file manager.

Search
Click this button to search for a certain file or to choose the folder for the file manager to display.

A dialog box with the following functions appears:

- File name
  Allows you to specify a unique filename or a filename pattern as the search target. With the default setting *.bas, the search function will find all Basic scripts.
If you specify a unique filename like listfonts.bas, only files with exactly this name will be found. If you specify a filename pattern like list*.bas, all scripts whose filenames begin with "List" will be found.

- **File type**
  
  From this list, you can choose the type of the files to be targeted in the search.

- **Folders**
  
  Here you can select the drive and folder in which the file manager is to carry out the search.

- **Include subfolders**
  
  If this option is enabled, the file manager searches not only the selected folder, but also all folders below the selected folder.

- "**New list**" button
  
  Starts a new search with the current settings.

- "**Add to list**" button
  
  Also starts a new search; however, any previous search results remain in the list rather than being cleared from the list.

- "**Quick paths**" button
  
  Quick paths allow you to create shortcuts to the folders that you use most often, so that they can easily be accessed in file dialogs. For details, see the TextMaker or PlanMaker manual, keyword "Quick paths".

**Print**

If you click this button, the selected file will be printed.

**Delete**

If you click this button, the selected file will be deleted (after confirmation).

**Rename**

If you click this button, the selected file will be renamed. BasicMaker will request the new file name from you.

---

**Commands in the Edit menu of the script editor**

The menu commands in the **Edit** menu of the script editor allow you to edit scripts:
- **Edit > Undo**
  Undo's the last action/change of text carried out in the current window. You can invoke this command several times, in order to undo the last x changes.

- **Edit > Redo**
  Restores the effect of your most recently Undo operations. This command can also be invoked repeatedly.

- **Edit > Cut**
  Deletes the content of a selection, but not permanently. Instead, it places this content in the clipboard, so that it remains available for later insertion anywhere in the document.

- **Edit > Copy**
  Copies the selection of content to the clipboard.

- **Edit > Paste**
  Inserts the content of the clipboard into the text at any specified point and can be used repeatedly.

- **Edit > Delete**
  Deletes the selected text.

- **Edit > Select All**
  Selects the entire text.

- **Edit > Search**
  Lets you search the text. More information about this can be found in the section Searching and replacing in the script editor.

- **Edit > Replace**
  Lets you search the text and replace certain words with some other text. More information about this can be found in the section Searching and replacing in the script editor.

- **Edit > Search Again**
  Repeats the last search or replace command carried out. More information about this can be found in the section Searching and replacing in the script editor.

- **Edit > Go to...**
  Lets you mark text (a sort of "bookmark") in the script. More about this can be found in the section Bookmarks and the Go to... command.

- **Edit > Edit Dialogs**
  Opens the dialog editor, where you can create and edit user-defined dialog boxes. For more information, see the section Using the dialog editor.
Searching and replacing in the script editor

With the menu commands **Edit > Search** and **Edit > Replace** you can search for a certain piece of text in the script, and/or replace it with another piece of text.

**Searching**

To search for text, invoke the **Edit > Search** menu command. Type in the term for which you want to search and click the **Search** button.

Options available in the search dialog:

- **Case sensitive**: If this option is checked, the case of the letters in the found text must be the same as the search term. Thus, if you search for "Print", only "Print" would be found, and not "print" or "PRINT".

- **Whole words only**: If checked, only those occurrences of the search term that are separate words (not just part of a word) will be found.

- **Search from top**: If checked, the search begins from the beginning of the script, instead of the current position of the cursor.

- **Search Backwards**: If checked, the search is conducted from the position of the cursor backwards to the beginning of the script, otherwise forwards.

**Replacing**

To search for text and replace it with other text, invoke the **Edit > Replace** menu command. Type in the search term and the replacement term and click the **Search** button.

Options: see above

When the script editor finds the search text, it scrolls to its position in the document and selects it.

You can then do any of the following:

A) You can click on **Replace** to have the editor replace the selected occurrence of the search term with the replacement term and jump to the next occurrence of the search term.

B) You can click on **Search again** to have the editor jump to the next occurrence of the search term – without replacing the selected occurrence.

C) You can click on **Replace all** to have the editor replace the selected occurrence of the search term and all subsequent occurrences it finds in the text.

D) You can click on **Close** to end the search and close the search dialog.

**Searching again**

The **Edit > Search Again** menu command can be used to repeat the search/replacement of the last search term.
Commands in the View menu of the script editor

The menu commands in the View menu of the script editor allow you to change the presentation of the program:

- **View > Toolbars**
  
  Lets you enable/disable and modify the toolbars available in the script editor. Detailed information on this can be found in the manual for TextMaker, keyword "View > Toolbars".

- **View > Bookmarks**
  
  Allows you to choose if bookmarks are visible in the script or not.

- **View > Watch Window**
  
  Opens the watch window. Here, the values of variables can be supervised during the execution of the script. For more information, see the section [Watching variables](#).

Commands in the Insert menu of the script editor

In the Insert menu of the script editor, the following menu commands are available:

- **Insert > Symbol**
  
  Opens up a window containing all the different symbols and other special characters that you can insert in the text. Select the desired character and click the Insert button.

- **Insert > Document**
  
  Inserts another script or text document at the current position of the cursor. A file dialog appears where you can choose the desired document.

- **Insert > SmartText**
  
  Allows you to insert and edit SmartText entries. For more information, see the section [Using SmartText](#).

  Tip: Using SmartText entries for frequently used instructions or routines can save you a lot of time!

- **Insert > Bookmark**
  
  Creates a bookmark at the current position. With the menu command Edit > Go to... you can quickly jump to any bookmarks made. More on this can be found in the section [Bookmarks and the Go to... command](#).
Using SmartText

Exactly like in the word processor TextMaker, you can setup SmartText entries in the script editor. This feature can save you a lot of typing time: You can define entries for frequently needed names or source code fragments and then call them up quickly and easily.

For example, create a SmartText entry named "tma" containing "tm.Application.ActiveDocument". Now you can call out this SmartText entry at any time. In the script, simply type "tma" and press the spacebar, the Enter key, or a punctuation character key. Immediately, "tma" will be replaced with "tm.Application.ActiveDocument".

Instructions in detail:

Creating SmartText entries

To create, for example, a SmartText entry with the name "tma" containing "tm.Application.ActiveDocument", proceed as follows:

1. Invoke the menu command Insert > SmartText.
2. Click on the New button to create a new SmartText entry.
3. Give the SmartText entry a name ("tma" in our example).
   Later, the SmartText entry can be called up by using the specified name.
4. Confirm with OK, which takes you back to the main dialog.
5. Type in the text for the SmartText entry in the large input field ("tm.Application.ActiveDocument" in our example).
6. Click on Save to save your new SmartText entry.
7. Exit the dialog by clicking on the Close button.

The SmartText entry has now been created.

Inserting SmartText entries

Calling out SmartText entries is simple: In the script, type in the name of the SmartText entry ("tma" in our example), and then press the space bar, the Enter key or a punctuation character. Immediately, "tma" will be replaced by the content of the SmartText entry, in our example "tm.Application.ActiveDocument".

**Note:** If this does not work, the Expand SmartText entries option might be disabled. If so, invoke the Tools > Options menu command, switch to the General tab, and turn on this option.

Alternatively, you can use a dialog to insert SmartText entries by invoking the menu command Insert > SmartText, choosing the desired entry, and then clicking the Insert button.
**Editing SmartText entries**

You can edit SmartText entries that you have previously defined with the menu command **Insert > SmartText**.

- **Creating a new SmartText entry**
  
  To create a new SmartText entry, click the **New** button (see above).

- **Deleting an entry**
  
  To delete an entry, select it from the list and click on the **Delete** button.

- **Renaming an entry**
  
  To change the name of an entry, select it from the list, click on **Rename** and enter a new name.

- **Editing an entry**
  
  To edit an entry, select it from the list and then click in the large input field. Now you can modify the content of the SmartText entry.

- **Inserting an entry**
  
  To insert a SmartText entry into the script, select it from the list and click on the **Insert** button

- **Closing the dialog**
  
  With the **Close** button, you can close the dialog box.

---

**Bookmarks and the Go to... command**

Exactly like in the word processor TextMaker, you can use *bookmarks* in the script editor, which helps to keep track of certain points in the script.

To insert a bookmark, invoke the **Insert > Bookmark** menu command at the desired position in the text and give the bookmark a name. Once you have marked a position in the text in this way, you can jump to it at any time with the **Edit > Go to** menu command.

**Setting bookmarks**

To set up a bookmark, do the following:

1. Move the cursor to the text position where you want to place the bookmark.
2. Choose the menu command **Insert > Bookmark**.
3. Type in the name for the bookmark.
   
   Bookmark names may contain only letters, numbers and underscores. Special characters are not allowed. The name must always begin with a letter.
4. Click on **OK** to set the bookmark.

You can define an unlimited number of bookmarks.
Calling a bookmark

To return to a bookmarked position in the script, do the following:

1. Choose the Edit > Go to... menu command.
2. Choose the desired bookmark from the list or type in its name.
3. Click on OK.

The text cursor will now jump to the position where the bookmark was created.

Deleting bookmarks

When a bookmark is no longer needed, you can delete it using the following procedure:

1. Choose the menu command Insert > Bookmark.
2. Select the bookmark you want to delete from the list, or enter its name manually.
3. Click on Delete.

Note: When you delete a passage of text containing a bookmark, the bookmark is deleted automatically.

Sending the cursor to a certain line

Additionally, the Edit > Go to menu command can be used to place the text cursor in a certain line in the script. To do this, invoke the command and type in the number of the line.

Commands in the Program menu of the script editor

The menu commands in the Program menu of the script editor can be used to execute the current script.

- Program > Start (keyboard shortcut: F9)
  
  Executes the script. See also section Starting scripts.

The other options in this menu help with finding errors. So for example you can run the script step by step or set breakpoints at which execution of the script will be automatically paused.

For this, the following commands are available:

- Program > Trace Into (keyboard shortcut: F7)
  
  Carries out the next instruction, and then stops.

- Program > Step Over (keyboard shortcut: F8)
  
  Similar to the previous instruction, this command only follows the next instruction – with the difference that procedures (functions and subs) are not processed in single steps, but as a whole group.
Using the script editor

- **Program > Reset** (keyboard shortcut: Ctrl+F2)
  
  This breaks the execution and puts the script back to its first line.

- **Program > Insert/Delete Breakpoint** (keyboard shortcut: F2)
  
  Creates a breakpoint in the current line or removes it again. The execution of scripts will be automatically interrupted as soon as it reaches a breakpoint.

- **Program > Delete All Breakpoints** (keyboard shortcut: Alt+F2)
  
  Deletes all breakpoints in the script.

Detailed instructions about the above commands can be found in the section [Debugging scripts](#).  

---

**Commands in the Tools menu of the script editor**

The commands in the **Tools** menu of the script editor can be used to configure the editor.

- **Tools > Customize**
  
  Lets you customize the toolbars (or the ribbon) as well as the keyboard shortcuts for the editor. Detailed information on this can be found in the manual for TextMaker, keywords "Toolbars: Customizing" (or "Ribbon: Customizing") and "Keyboard shortcuts: Customizing".

- **Tools > Options**
  
  Lets you control the settings of the editor. Read more about this in the section [Changing the preferences of the script editor](#).

---

**Changing the preferences of the script editor**

Use the **Tools > Options** menu command to configure the script editor to suit your work habits.

The available settings are distributed on several dialog tabs:

**View tab**

Use this tab to change settings related to the appearance of scripts:

- **Typeface and Size**
  
  Lets you choose the font face and size to be used in the editor. It is recommended to choose a non proportional font like "Courier New".

- **Tabs**
  
  Lets you adjust the width of tabs (in characters).
Show bookmarks

Normally, bookmarks are not visible in the script. However, if you enable this option, bookmarks will be displayed. Details about the use of bookmarks can be found in the section Bookmarks and the Go to... command.

General tab

Use this tab to change general settings:

- **Maximum number of undo steps**
  
  Lets you specify the number of actions that can be reversed with the **Edit > Undo** menu command.

- **Expand SmartText entries**
  
  When this option is enabled, SmartText entries can be expanded directly in the text. All you have to do is type the abbreviation for the SmartText entry (e.g. "tma") and then press the space bar, Enter key or a punctuation key in order to replace the abbreviation with the content of the SmartText entry. (See Using SmartText.)

  If this option is disabled, SmartText entries can be called out only with the **Insert > SmartText** menu command.

Appearance tab

Use this tab to customize the user interface of BasicMaker:

- **Dialog language**
  
  Here you can select the language to be used for the user interface (menus, dialog boxes, etc).

- **User interface**
  
  When you click on the **User interface** button, a dialog box appears in which you can select the type of user interface that the applications in SoftMaker Office should use:

  - **Ribbon** (upper row): When you select one of the items from the top row, the programs will use a ribbon, as some modern Windows applications do. (The differences between the individual entries are only in the color scheme used.)

  - **Classic menus and toolbars** (lower row): When you select one of the entries from the bottom row, the programs will use classic menus and toolbars. (Also for this, several different color variants are offered.)

  In addition, the following settings can be made in the dialog box:

  - **Quick access toolbar** (ribbons only): Determines where the Quick Access Toolbar, which contains icons for some of the most frequently used commands, should be displayed: to the left of the document tabs – or in a separate toolbar directly below the ribbon.

  - **Touch mode**: If you activate this option, all icons in the ribbon or in menus/toolbars are enlarged a bit. This is useful when operating the software with your finger (for example, on a tablet).

  Tip: In addition to this option, you can also switch touch mode on/off with the following commands:

  **Menu**: command **View > Touch mode**
Quick Access Toolbar: command Touch mode

- **Show status bar in ribbon mode**
  
  Applies for ribbon mode only: Here you can enable/disable the display of the status bar. To change the display of the status bar for the classic menu, see section Commands in the View menu of the script editor.

- **Show fonts in font list**
  
  When this option is enabled, the program renders the names of fonts that appear in font lists (e.g. in the preferences dialog) using their corresponding fonts. This lets you see at a glance how each font looks like.

- **Show tooltips**
  
  Lets you specify whether or not tooltips should be displayed when you position the mouse pointer over certain screen elements, for example a button in a toolbar.

- **Beep on errors**
  
  When this option is enabled, a sound plays when an error or warning message is to be displayed.

- **Use system file dialogs**
  
  This option controls the type of dialogs that appear when commands to open and save files are issued. If it is disabled, then BasicMaker's own file dialog will be displayed. If it is enabled, then the standard file dialog provided by your operating system will be displayed.

- **Smooth edges of screen fonts**
  
  When this option is enabled, BasicMaker uses a technology called "anti-aliasing" to smooth the edges of fonts and improve their appearance on the screen.

  Depending on your operating system, different options are available.

- **Workspace color**
  
  This option allows you to change the background color of document windows.

**Files tab**

Use this tab to change options regarding the opening and saving of files.

- **Auto recovery: Save state every ... minutes**

  When this option is enabled, BasicMaker automatically makes a temporary backup copy of every open script on a periodic basis. You can enter a period of 1 to 100 minutes.

  When you exit BasicMaker in the normal manner, these temporary backup copies are automatically deleted. However, if BasicMaker is abruptly shut down by a power failure, for example, while you are working on open scripts, these copies become available when the program is restarted. BasicMaker recognizes that there has been a failure and offers to open the automatic backup copies of all scripts that had been modified but not saved just prior to the failure.

  You can then check each of the restored scripts to determine if any of the most recently made changes have actually been lost, and then save them.
- **Recently used files in File menu**
  BasicMaker displays a list of the files most recently opened in it in the **File** menu. If you select an item on the list, the corresponding file will be opened immediately. Using the **Recently used files** option you can specify the number of files to be displayed in the list.

- **Backup**
  Here you can specify if the program should, whenever you save a script, automatically create a *backup copy* containing its previous version.

  Options available:
  
  **No backup**
  When you choose this option, *no* backup copy is created when you save a script. (Not recommended.)

  **Simple backup**
  Here, exactly *one* backup copy is created when you save a script. This copy contains the previous (i.e. last saved) version of the script. It is saved as a file with the name extension `.bak`, stored in the same folder as the script.

  **Advanced backup**
  With this option, *multiple* generations of backup copies are kept for each script. All of these copies are stored in a special **Backup** folder.

  Tip: When this option is selected, also the **File > Revert to Previous Version** menu command becomes available. It provides a comfortable means of returning to a previous version of the current script.

  Additional options:
  
  **Folder for backup files**: Here you can change the location of the **Backup** folder in which all backup copies are stored.

  **Number of backup files per document**: Here you can specify the maximum number of backup copies (= generations) to be kept for each document (= script).

  **"Clean Up" button**: Offers the following two commands for deleting backup copies:

  - **Delete orphaned backup files**: Removes any backup file that has lost its original file (for example, because the original file has been deleted).

  - **Delete all backup files**: Removes *all* backup files that reside in the folder for backup files.

  More detailed information on the usage of backup copies can be found in the TextMaker manual, keyword “Backup copy”.

---

**Commands in the Window menu of the script editor**

In the **Window** menu of the script editor, the following commands are available:
- **Window > Close All**
  Closes all windows that are currently open.

- **Window list in the Window menu**
  Lists all currently opened windows. If you click on an entry, the corresponding window will become the active window.

---

**Starting scripts**

BASIC scripts can be started from BasicMaker, TextMaker, or from PlanMaker:

- **Starting from BasicMaker**
  To launch a script in BasicMaker, choose the menu command **Program > Start** or press the shortcut key **F9**.

- **Starting from TextMaker/PlanMaker**
  You can also start a script from TextMaker or PlanMaker. In TextMaker/PlanMaker, choose the menu command **Tools > Run Script**. A file dialog appears. Select a script, confirm with **OK**, and the script will be executed.

- **Starting from a command shell**
  Alternatively, scripts can be started in a command shell by entering e.g. **basicmaker /s scriptname.bas**. BasicMaker will start, run the specified script, and then close.

**Aborting running scripts**

You can abort scripts once they are running by pressing the key combination **Ctrl+Break**. (If another application has the focus at this moment, switch to the BasicMaker application window beforehand.)

---

**Debugging scripts**

The script editor comes with functions that are very useful for finding and fixing errors ("debugging" scripts):

- **Running a script step by step**
- **Using breakpoints**
- **Watching variables**
Running a script step by step

The following commands enable you to run a script step by step:

**Program > Trace Into (keyboard shortcut: F7)**

When you invoke the menu command **Program > Trace Into**, only a single line of the script is carried out and then the process is stopped. If you invoke this command again, then the next line will run, then pause again – etc.

Therefore, you can run a script line by line in single steps.

**Program > Step Over (keyboard shortcut: F8)**

By using the menu command **Program > Step Over** only one part of the script will be run, then it will be paused.

The difference between this and **Trace Into**: Procedures are not processed line by line, but as a whole.

Explanation: If you invoke a procedure (a function or a sub) in your code, then **Trace Into** will go into this procedure, run the first line, and then wait. **Step Over** will treat the whole function/sub as a single piece and process it completely in one go before pausing.

**Program > Reset (keyboard shortcut: Ctrl+F2)**

The menu command **Program > Reset** will break the step by step execution and set the script back to the first line.

Using breakpoints

If you place a breakpoint in a line of your script and then run the script, it will stop at this line.

To continue with the execution of the program afterwards, choose the menu command **Program > Start** or alternatively invoke the **Program > Trace Into** or the **Program > Step Over** menu command to continue the execution step by step.

The following menu commands are available for working with breakpoints:

**Program > Insert/Delete Breakpoint (keyboard shortcut: F2)**

Places or removes a breakpoint in the current line.
Using the script editor

Program > Delete All Breakpoints (keyboard shortcut: Alt+F2)

Deletes all previously set breakpoints.

---

Watching variables

Use the watch window to view the content of variables during the execution of a script. This is especially useful when running a script step by step.

In order to watch a variable, do the following:

1. If the watch window is currently not visible, activate it by using the menu command View > Watch Window.
2. In the script, click on the name of the variable that you want to watch. Then, do a right-click to open the context menu and choose Show Variable from it.
   
   Hint: You can also simply type in the name of the variable in watch window.
3. Start the script with the menu command Program > Start (or alternatively use the Program > Trace Into or the Program > Step Over menu command).

The content of the variable will be shown in the watch window and be constantly updated.

---

Using the dialog editor

In this section, the operation of the dialog editor included in BasicMaker is explained.

The following topics are covered:

- General information
- Opening/closing the dialog editor
- Commands in the File menu of the dialog editor
- Commands in the Edit menu of the dialog editor
- Commands in the Insert menu of the dialog editor

---

General information

In SoftMaker Basic, you can build dialog boxes in order to allow your scripts interaction with the user.
To create a dialog box, you must define a dialog. The *dialog definition* can either be entered manually in the script (see section *Dialog definition*) or you can use the dialog editor for this (see next section).

The dialog editor provides a graphical user interface for creating dialogs. You can insert dialogs controls using the toolbar or the commands in the *Insert* menu of the dialog editor. Existing elements can be moved and resized just like with a drawing program, and their properties can be changed through the *Edit* menu.

See the next pages for details.

---

### Opening/closing the dialog editor

The dialog editor can be opened using the menu command *Edit > Edit Dialogs*, as follows:

**Creating a new dialog**

To create a *new* dialog box, with help from the dialog editor, the following steps are necessary:

1. In the source code, place the text cursor at the position where the *dialog definition* should go (*BeginDialog* ...
   *EndDialog*).
2. Choose the *Edit > Edit Dialogs* menu command.
3. Click on the *New* button.
4. The dialog editor will start and you can now design the dialog. (Information about using the dialog editor can be found in the sections that follow).
5. When the dialog is completed, close the dialog editor with the menu command *File > Exit*.
6. Leave the dialog window by clicking *Close*.

The dialog definition is now inserted into the source code.

**Editing an existing dialog**

To edit an *existing* dialog definition, the following steps are necessary:

1. Choose the *Edit > Edit Dialogs* menu command.
2. Choose the dialog that you want to edit from the list.
3. Click on the *Edit* button.
4. The dialog editor will be started and you can edit the dialog.
5. When all changes have been made, end the dialog editor with the menu command *File > Exit*.
6. Close the dialog box with *Close*.

The dialog definition is changed accordingly in the source code.
Deleting an existing dialog

To remove a dialog definition, you can simply delete it from the source code manually – or you invoke the menu command **Edit > Edit Dialogs**, select the dialog in the list and click the **Delete** button.

Commands in the File menu of the dialog editor

The menu commands in the **File** menu of the dialog editor have the following functions:

- **File > Reset Dialog**
  
  Resets all changes made to the dialog that you are currently editing.

- **File > Abort**
  
  Exits the dialog editor – without storing your changes.

- **File > Exit**
  
  Stores your changes and exits the dialog editor.

Commands in the Edit menu of the dialog editor

The **Edit** menu of the dialog editor provides menu commands for editing dialog elements.

For many of these commands you first have to select the dialog element that you want to change. To select an object, click on it. To select multiple objects, click on them successively while holding down the Shift key or draw a rectangle around them with the mouse.

- **Edit > Cut**
  
  Cuts out dialog elements and puts them into the clipboard.

- **Edit > Copy**
  
  Copies dialog elements into the clipboard.

- **Edit > Paste**
  
  Inserts the content of the clipboard.

- **Edit > Delete**
  
  Deletes dialog elements.

- **Edit > Delete All**
  
  Deletes all dialog elements in the dialog.
- **Edit > Snap to grid**
  Aligns dialog elements on a grid. The grid size can be adjusted with the menu command **Edit > Grid**.

- **Edit > Bring to Front**
  If you have overlapping dialog elements, this command brings the selected element to the foreground.

- **Edit > Send to Back**
  If you have overlapping dialog elements, this command sends the selected element to the background.

- **Edit > Alignment**
  Changes the alignment of the currently selected dialog elements. Options available:
  - **No change**: No change is made.
  - **Left**: Aligns the elements to the left border of the leftmost element.
  - **Center**: Aligns the elements to their horizontal center.
  - **Right**: Aligns the elements to the right border of the rightmost element.
  - **Space evenly**: Spaces the elements evenly between the left border of the leftmost and the right border of the rightmost element.
  - **Centered in window**: Centers the elements within the dialog window.

  The settings in the **Vertical** column work accordingly.

- **Edit > Size**
  Changes the size of the currently selected dialog elements. Options available:
  - **No change**: No change is made.
  - **Minimum width**: The width is adapted to that of the narrowest marked item.
  - **Maximum width**: The width is adapted to that of the widest marked item.
  - **Value**: The width is set to a fixed value (entered in screen pixels).

  The settings in the **Height** column work accordingly.

- **Edit > Grid**
  Here you can configure the grid. The grid is a positioning aide for dialog elements. When it is enabled, elements cannot be shifted to arbitrary positions; instead they snap from one grid point to the next. Options available:
  - **Show Grid**: Determines if grid points should be displayed (in the dialog editor).
  - **Snap to grid**: Determines if the grid is activate.
  - **X and Y increment**: Determines the distance of the grid points.

  Hint: To fit elements on the grid that have already been inserted, use the **Edit > Snap to Grid** menu command.
Commands in the Insert menu of the dialog editor

With the menu commands in the Insert menu of the dialog editor, you can add new elements to a dialog box. Alternatively, you can use the following tools on the toolbar, or the keys F2 to F10:

<table>
<thead>
<tr>
<th>Dialog element</th>
<th>Tool</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>OK button</td>
<td><img src="image" alt="OK" /></td>
<td>F2</td>
</tr>
<tr>
<td>Cancel button</td>
<td><img src="image" alt="Cancel" /></td>
<td>F3</td>
</tr>
<tr>
<td>Button</td>
<td><img src="image" alt="Button" /></td>
<td>F4</td>
</tr>
<tr>
<td>Radio button</td>
<td><img src="image" alt="Radio button" /></td>
<td>F5</td>
</tr>
<tr>
<td>Check box</td>
<td><img src="image" alt="Check box" /></td>
<td>F6</td>
</tr>
<tr>
<td>Text</td>
<td><img src="image" alt="Text" /></td>
<td>F7</td>
</tr>
<tr>
<td>Input box</td>
<td><img src="image" alt="Input box" /></td>
<td>F8</td>
</tr>
<tr>
<td>Group box</td>
<td><img src="image" alt="Group box" /></td>
<td>F9</td>
</tr>
<tr>
<td>List box</td>
<td><img src="image" alt="List box" /></td>
<td>F10</td>
</tr>
<tr>
<td>Combo box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drop-down list</td>
<td><img src="image" alt="Drop-down list" /></td>
<td></td>
</tr>
</tbody>
</table>

First, choose which kind of dialog element you want to insert. Then, in the dialog box drag a frame with the desired size and position.

Detailed information on each dialog element can be found in the section Controls of a dialog box.
Language elements of SoftMaker Basic

In this section you will find basic information about the commands that can be used in BasicMaker scripts:

- Syntax fundamentals
- Data types
- Variables
- Arrays
- Operators
- Flow control
- Subroutines and functions
- Calling functions in DLLs
- File operations
- Dialog boxes
- OLE Automation

Syntax fundamentals

Comments

Text that is preceded by the keyword Rem or an apostrophe (' ) will be seen as comments and not executed. You can use comments to annotate your scripts.

'This is a comment
rem This too
REM This too
Rem This too

As you can see, the Rem instruction is not case-sensitive. This is the same with all keywords in SoftMaker Basic.

Comments can also be placed at the end of a line:

MsgBox Msg ' Display Message

The text after the apostrophe is a comment.
**Multiple instructions in a line**

You can place several instructions on the same line, separating them by colons:

```
X.AddPoint(25,100) : Y.AddPoint(0,75)
```

...is identical to...

```
X.AddPoint(25,100)
Y.AddPoint(0,75)
```

**Instructions spanning several lines**

You can make an instruction span several lines by ending each line except the last with a space and an underscore (_).

```
Print _
"Hello!"
```

...is identical to...

```
Print "Hello!"
```

**Numbers**

You can write numbers in three different ways: in decimal, in octal, and in hexadecimal:

- **Decimal numbers**: Most of the examples in this manual employ decimal numbers (base 10).
- **Octal numbers**: If you would like to use octal numbers (base 8), place &O in front of the number – for example &O37.
- **Hexadecimal numbers**: For hexadecimal numbers (base 16), use the prefix &H – for example &H1F.

**Names**

Variables, constants, subroutines and functions are addressed by their names. The following naming conventions apply:

- Only the letters A-Z and a-z, underscores (_) and the digits 0-9 are allowed.
- Names are not case-sensitive.
- The first letter of a name must always be a letter.
- The length may not exceed 40 characters.
- Keywords of SoftMaker Basic may not be used.
Data types

The following data types are available:

<table>
<thead>
<tr>
<th>Type</th>
<th>Suffix</th>
<th>Syntax of the declaration</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>$</td>
<td>Dim &lt;Name&gt; As String</td>
<td>0 to 65,500 characters</td>
</tr>
<tr>
<td>String*(n)</td>
<td></td>
<td>Dim &lt;Name&gt; As String*(n)</td>
<td>Exactly (n) characters</td>
</tr>
<tr>
<td>Integer</td>
<td>%</td>
<td>Dim &lt;Name&gt; As Integer</td>
<td>2 bytes</td>
</tr>
<tr>
<td>Long</td>
<td>&amp;</td>
<td>Dim &lt;Name&gt; As Long</td>
<td>4 bytes</td>
</tr>
<tr>
<td>Single</td>
<td>!</td>
<td>Dim &lt;Name&gt; As Single</td>
<td>4 bytes</td>
</tr>
<tr>
<td>Double</td>
<td>#</td>
<td>Dim &lt;Name&gt; As Double</td>
<td>8 bytes</td>
</tr>
<tr>
<td>Boolean</td>
<td></td>
<td>Dim &lt;Name&gt; As Boolean</td>
<td>2 bytes</td>
</tr>
<tr>
<td>Variant</td>
<td></td>
<td>Dim &lt;Name&gt; As Variant</td>
<td>Depends on contents</td>
</tr>
</tbody>
</table>

Or: Dim <Name> As Any

Or simply: Dim <Name>

Object
(see section OLE Automation)

User-defined
(see section User-defined data types)

Information on using variables can be found in the section Variables.

Special behavior of the Variant data type

In SoftMaker Basic, a variable does not necessarily have to be declared before it is used for the first time. (Exception: if Option Explicit was set) SoftMaker Basic will automatically declare the variable on its first occurrence – as a special data type called Variant

The Variant data type can be used to store either numbers or character strings or date/time values. Type conversion is performed automatically whenever needed.

You can also explicitly declare variables to be of the variant type, for example with Dim x As Variant or simply with Dim x.

An example for the use of variant variables:

Sub Main
Language elements of SoftMaker Basic

Dim x        'Variant variable
x = 10
x = x + 8
x = "F" & x
print x      'Result: "F18"
End Sub

When numbers are stored in a variant variable, SoftMaker Basic automatically chooses the most compact data type possible. As a result, numbers will be represented as one of the following (in this order): Integer, Long, Single, Double.

The data type used by a variant variable can change at any time. To determine the current data type, the function **VarType** can be used. Also, the function **IsNumeric** lets you test if the variable currently has a numeric value.

Variant variables can take two special values which are not available in other data types:

- **Empty** is the value of a variant variable that has not yet been initialized. This value can be tested against with the function **IsEmpty**. In numeric operations, **Empty** variables evaluate to 0; in string operations, they return an empty string.

- The value **Null** serves to signal the fact that no (valid) value is available. It can be tested against with the function **IsNull**. Every operation with a Null value returns a Null value again.

**Concatenating Variant variables**

If you use the + operator on a text string and a number, the result will be a text string.

If you use the + operator on two numbers, the result will be a number. If you wish to receive a text string instead, use the & operator in place of +. This operator will always return a text string, independent of the data type.

---

**User-defined data types**

The **Type** instruction allows you to define your own data types. This must happen before any procedures are declared, since user-defined data types are always in global scope. The variables of a user-defined type can however be declared locally or globally.

**Note:** The use of arrays in user-defined types is not allowed. Furthermore, user-defined variable types cannot be passed to DLLs that expect C structures.

```
Type Person
    LastName As String
    FirstName As String
    Gender As String*1 ' ("m" or "f")
    Birthday As String
End Type
```

You can declare variables based on such a definition with **Dim** or **Static**, like you do with any other variable. Its individual elements can be accessed using the dot notation **VariableElement** (see also **With instruction**).

Example:

```
Dim p As Person
```
p.LastName = "Smith"

---

**Variables**

**Declaring variables**

Variables can be declared with the instructions **Dim** or **Static**. By default, variables are of the variant type. If another data type is desired, you must specify this by appending **As Type** or by means of a type suffix (e.g., %% for **Integer**, see section **Data types**)

```basic
Dim X               ' Declares X as a variant
Dim X As Integer    ' Declares X as an integer
Dim X%              ' Same as the above instruction
Dim X%, Name$       ' Several declarations in a single line
```

**Scope of variables**

Variables can be either local or global:

- Global variables are created using the **Dim** instruction outside of all procedures. They can be accessed everywhere in your program.
- Local variables are created using the **Dim** or the **Static** instruction inside a procedure (subroutine or function). They are only valid within that specific procedure.

---

**Arrays**

SoftMaker Basic supports one- and multi-dimensional arrays. In arrays, series of values can be stored under a uniform name. Each value can be accessed by an index.

All elements in an array have the same data type. The following data types are allowed: **Integer**, **Long**, **Single**, **Double**, or **String**.

**Note:** In some Basic variants, arrays can be used without previous declaration. In SoftMaker Basic, this is not allowed. Arrays must be declared before their first use, using either **Dim** or **Static**.

To set the size of an array, you indicate the upper limit (and optionally the lower limit) for the index. Only fixed values are allowed (no variables).

If the lower limit is omitted, the value defined by the **Option Base** instruction is taken – by default, this is zero.

```basic
Dim a(10) As Integer       'a(0)..a(10)
Dim b(-10 To 10) As Double 'b(-10)..b(10)
```
You can use loops to efficiently access the elements of arrays. For example, the following `For` loop initializes all elements of the array "A" with 1:

```basic
Static A (1 To 20) As Integer
Dim i As Integer
For i = 1 To 20
    A (i) = 1
Next i
```

**Multi-dimensional arrays**

Arrays can also have multiple dimensions, for example:

```basic
Static a(10, 10) As Double 'two-dimensional
Dim b(5, 3, 2) 'three-dimensional
```

---

**Operators**

SoftMaker Basic supports the following operators:

### Arithmetic operators

<table>
<thead>
<tr>
<th>Operator</th>
<th>Function</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Addition</td>
<td>x = a + b</td>
</tr>
<tr>
<td>-</td>
<td>Subtraction</td>
<td>x = a - b</td>
</tr>
<tr>
<td></td>
<td>*also: Negation</td>
<td>x = -a</td>
</tr>
<tr>
<td>*</td>
<td>Multiplication</td>
<td>x = a * 3</td>
</tr>
<tr>
<td>/</td>
<td>Division</td>
<td>x = a / b</td>
</tr>
<tr>
<td>Mod</td>
<td>Modulo</td>
<td>x = a Mod b%</td>
</tr>
<tr>
<td>^</td>
<td>Exponentiation</td>
<td>x = a ^ b</td>
</tr>
</tbody>
</table>

### String operators

<table>
<thead>
<tr>
<th>Operator</th>
<th>Function</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Concatenation</td>
<td>x = &quot;Good &quot; + &quot;Day&quot;</td>
</tr>
<tr>
<td>&amp;</td>
<td>Concatenation</td>
<td>x = &quot;Good &quot; &amp; &quot;Day&quot;</td>
</tr>
</tbody>
</table>
The difference between the operators + and & is in the handling of variant variables that contain numbers: the + operator adds these numbers, whereas the & operator concatenates them as strings (see example).

Example:

```basic
Sub Main
    Dim a, b as Any  ' 2 variant variables
    a = 2
    b = 3
    print a + b  ' Returns the number 5
    print a & b  ' Returns the string "23"
End Sub
```

### Logical operators

<table>
<thead>
<tr>
<th>Operator</th>
<th>Function</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;</td>
<td>Less than</td>
<td>If x &lt; y Then ...</td>
</tr>
<tr>
<td>&lt;=</td>
<td>Less than or equal to</td>
<td>If x &lt;= y Then ...</td>
</tr>
<tr>
<td>=</td>
<td>Equal to</td>
<td>If x = y Then ...</td>
</tr>
<tr>
<td>&gt;=</td>
<td>Greater than or equal to</td>
<td>If x &gt;= y Then ...</td>
</tr>
<tr>
<td>&gt;</td>
<td>Greater than</td>
<td>If x &gt; y Then ...</td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>Not equal to</td>
<td>If x &lt;&gt; y Then ...</td>
</tr>
</tbody>
</table>

The result of comparisons with these operators is an Integer value:
- -1 (True) if the condition applies
- 0 (False) if the condition does not apply

### Logical and bitwise operators

<table>
<thead>
<tr>
<th>Operator</th>
<th>Function</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not</td>
<td>Negation</td>
<td>If Not (x = a) Then ...</td>
</tr>
<tr>
<td>And</td>
<td>And</td>
<td>If (x &gt; a) And (x &lt; b) Then ...</td>
</tr>
<tr>
<td>Or</td>
<td>Or</td>
<td>If (x = y) Or (x = z) Then ...</td>
</tr>
</tbody>
</table>

These operators work bitwise. This means that you can use them for logic testing as well as for bitwise operations.

### Precedence of operators

Operators are processed in the following order:

<table>
<thead>
<tr>
<th>Operator</th>
<th>Function</th>
<th>Precedence</th>
</tr>
</thead>
</table>
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<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>( )</td>
<td>Parentheses</td>
</tr>
<tr>
<td>^</td>
<td>Exponentiation</td>
</tr>
<tr>
<td>+ -</td>
<td>Positive/negative sign</td>
</tr>
<tr>
<td>/ *</td>
<td>Division/multiplication</td>
</tr>
<tr>
<td>Mod</td>
<td>Modulo</td>
</tr>
<tr>
<td>= &lt;&gt; &gt; &lt; &lt;= &gt;=</td>
<td>Logical operators</td>
</tr>
<tr>
<td>Not</td>
<td>Negation</td>
</tr>
<tr>
<td>And</td>
<td>And</td>
</tr>
<tr>
<td>Or</td>
<td>Or</td>
</tr>
</tbody>
</table>

Flow control

SoftMaker Basic provides a number of commands that can be used to control the program flow in scripts. For example, there are instructions that perform, skip or repeat instructions depending on a condition.

The following flow control instructions are available:

**Goto branches**

Goto Labell

Labell:

The Goto instruction performs an unconditional jump the specified label – in the above example to the label "Label1"

**Gosub branches**

Gosub Labell

Labell:

    Instruction(s)...
Return
Language elements of SoftMaker Basic

The **Gosub instruction** also performs an unconditional jump to the specified label, but unlike the **Goto** instruction, the script returns to the calling place as soon as a **Return** instruction is encountered.

**Do loops**

With a **Do Loop** loop, a group of instructions can be run multiple times. There are the following variations:

```basic
Do While|Until Condition
  Instruction(s)...
  [Exit Do]
  Instruction(s)...
Loop
```

Or:

```basic
Do
  Instruction(s)...
Loop While|Until Condition
```

The difference is this:

- **Do While** and **Do Until** check the condition *before* beginning the execution of the instruction(s) inside the loop. These will be executed *only if* the condition is true.

- With **Do ... Loop While** and **Do ... Loop Until**, the condition is checked *after* the loop has been executed for the first time. This means that the instruction(s) inside the loop are carried out *at least once*.

**While loops**

**While ... Wend** loops are identical to **Do While ... Loop** loops. The condition is also checked *before* the first execution of the instruction(s) in the loop.

```basic
While Condition
  Instruction(s)...
Wend
```

**For ... Next loops**

A **For Next** loop repeats instructions for an exact number of times. With every pass through the loop, a counter is increased (or decreased) by the given increment. If no increment is specified, the value 1 (one) will be used as increment.

```basic
For number = StartValue To EndValue [Step Increment]
  Instruction(s)...
Next
```

**If branches**

In an **If Then** block, instructions are only carried out if the specified condition is matched. This condition must be an expression that returns either True or False (for example **If a<b Then**).

An **If ... Then** block can be comprised of one or more lines. If it extends over multiple lines, it must be ended with an **End If** instruction.

```basic
If Condition Then Instruction(s)...
  ' One line syntax
```
Or:

```
If Condition Then ' Multiple lines syntax
    Instructions...
End If
```

A variation of this are `If ... Then ... Else` constructs. Here, the instructions after `Else` are executed if the condition is `not` true.

```
If Condition Then
    Instruction(s)...
Else
    Instruction(s)...
End If
```

Further branches can be achieved by chaining multiple `If ... Then ... ElseIf` instructions together. However, this may lead to untidy code, and for this reason it is recommended to use the `Select Case` instruction for such cases instead (see below)

```
If Condition Then
    Instruction(s)...
ElseIf Condition Then
    Instruction(s)...
Else
    Instruction(s)...
End If
```

### Select Case branches

In a `Select Case` construct, a variable is checked against certain values.

```
Select Case Variable
    Case Value1
        Instruction(s)...
    Case Value2
        Instruction(s)...
    Case Value3
        Instruction(s)...
    [Case Else
        Instruction(s)...]
End Select
```

If the variable contains, for example, the value "Value1", the instructions below `Case Value1` will be executed. If it has none of the specified values, the code will jump to the instructions below `Case Else` (if given; otherwise the structure will simply be exited from.)

### Subroutines and functions

You can define your own functions and subroutines and use them like the built-in functions and instructions that SoftMaker Basic already has. Furthermore, it is possible to call functions that reside in DLLs.

- User-defined `subroutines` can be defined with the `Sub` instruction
User-defined functions can be defined with the Function instruction.

Functions in DLLs can be declared with the Declare instruction (see section Calling functions in DLLs).

Notes on the naming of subroutines and functions

Names for subroutines and functions may contain the letters A-Z and a-z, underscores (_) and the digits 0-9. The first characters must always be a letter. Names may not have more than 40 characters and may not be identical to SoftMaker Basic keywords.

Passing parameters via ByVal or ByRef

Parameters can be passed to procedures either by reference (ByRef) or by value (ByVal):

- **ByRef**

  The ByRef ("by reference") keyword indicates that a parameter is passed in such a way that the called procedure can change the value of the underlying variable. When the script returns from the procedure, the variable that was passed to the procedure has the new value.

  **ByRef** is the default method for passing parameters and therefore does not have to be explicitly specified. Sub Test(j As Integer) is the same as Sub Test(ByRef j As Integer).

- **ByVal**

  With ByVal ("by value") the procedure merely obtains a copy of the variable, so that changes of the parameter inside the procedure do not affect the specified variable.

  To pass a parameter by value, place the keyword **ByVal** in front of the parameter: Sub Joe(ByVal j As Integer).

  Alternatively, you can achieve this by passing the parameter in parentheses. Here, for example, the parameter Var3 is passed by value:

  SubOne Var1, Var2, (Var3)

Calling functions in DLLs

Before you can execute functions that are stored in DLLs, you must declare them with the Declare instruction.

If the desired procedure does not return a value, you should declare it with a Sub instruction, else use a Function instruction.

Example:

Declare Function GetPrivateProfileString Lib "Kernel32" (ByVal lpApplicationName As String, ByVal lpKeyName As String, ByVal lpDefault As String, ByVal
Once the procedure has been declared, it can be used like any other BASIC function or command.

### File operations

In SoftMaker Basic, you have access to all the usual file operations. Below is a small example. Further information of particular instructions can be found in the chapter Commands and functions from A to Z.

#### Example:

```basic
Sub FileIO_Example
    Dim Msg                          ' Declare variables
    Call Make3Files()                ' Get the next free file number
    MsgBox Msg
    For I = 1 To 3
        Kill "TEST" & I              ' Delete files again
        Next I
End Sub

Sub Make3Files
    Dim I, FNum, Fname
    For I = 1 To 3
        FNum = FreeFile              ' Open the file
        FName = "TEST" & FNum
        Open FName For Output As FNum ' Open the file
        Print #I, "This is test "; FNum  ' Write to the file
        Print #I, "Here is another "; I  ' Write to the file
        Close                         ' Close all files
        Next I
End Sub
```

### Dialog boxes

You can define your own dialog boxes and then show and evaluate them with the `Dialog` function.

Dialogs can be created either by manually entering their contents in a dialog definition or through use of the built-in dialog editor.

A dialog can optionally be connected to a Dialog Function, which allows you to dynamically enable and disable dialog controls and even makes it possible to create nested dialogs.
Dialog definition

To create a dialog box, you need to insert a dialog definition in the script. You can use either the built-in dialog editor (see section Using the dialog editor) or enter the dialog definition manually.

On the next pages, we will have a closer look at dialog definitions.

Syntax of a dialog definition

Dialog definitions must be surrounded by the instructions Begin Dialog and End Dialog:

```
Begin Dialog  
DialogName [X, Y] Width, Height, Title$ [, .DialogFunction]  
   ' Define your dialog controls here
End Dialog
```

The individual parameters have the following meaning:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DialogName</td>
<td>Name of the dialog definition. After you have set up the dialog definition, you can declare a variable of this type (Dim Name As DialogName).</td>
</tr>
<tr>
<td>X, Y</td>
<td>Optional. Sets the screen coordinates for the upper left corner of the dialog box (in screen pixels).</td>
</tr>
<tr>
<td>Width, Height</td>
<td>Sets the width and height of the dialog (in screen pixels)</td>
</tr>
<tr>
<td>Title$</td>
<td>The title of the dialog – will be shown in the title bar of the dialog.</td>
</tr>
<tr>
<td>.DialogFunction</td>
<td>Optional. The dialog function for this dialog. Allows you to dynamically enable and disable dialog controls while the dialog is displayed and makes it possible to create nested dialogs (see the section The dialog function).</td>
</tr>
</tbody>
</table>

Inside the dialog definition, you can define the dialog controls that you want to display. Use the keywords covered on the next pages for this.

Example:

```
Sub Main

    Begin Dialog QuitDialogTemplate 16,32,116,64,"Quit?"
        Text 4,8,108,8,"Would you like to quit the program?"
        CheckBox 32,24,63,8,"Save Changes",.SaveChanges
        OKButton 12,40,40,14
        CancelButton 60,40,40,14
    End Dialog

    Dim QuitDialog As QuitDialogTemplate
    rc% = Dialog(QuitDialog)

    ' Here you can evaluate the result (rc%) of the dialog

End Sub
```
Controls of a dialog box

The following controls can be used in dialog boxes:

- Command buttons
- Text and input boxes
- List boxes, combo boxes, and drop-down lists
- Check boxes
- Radio buttons and Group boxes

See the next pages for detailed information on each type of control.

Command buttons

The **OK** button and the **Cancel** button are known as *command buttons*.

*Note:* Every dialog must contain at least one command button.

**Syntax:**

```
OKButton X, Y, Width, Height
CancelButton X, Y, Width, Height
```

**Example:**
```
Sub Main

Begin Dialog ButtonSample 16,32,180,96,"OK and Cancel"
  OKButton 132,8,40,14
  CancelButton 132,28,40,14
End Dialog

Dim D1gl As ButtonSample
```
Language elements of SoftMaker Basic

rc% = Dialog (Dlg1)
End Sub

---

Text and input boxes

You can use Text to label the components of a dialog.

*Input fields* (keyword "Text Box") accept text input from the user.

**Syntax:**

```basic
Text X, Y, Width, Height, Text

TextBox X, Y, Width, Height, ID
```

*ID* is a variable that contains the current text.

**Example:**

```basic
Sub Main

Begin Dialog TextBoxSample 16,30,180,96,"Text and Input Boxes"
    OKButton 132,20,40,14
    CancelButton 132,44,40,14
    Text 8,8,32,8,"Input Box:
    TextBox 8,20,100,12,.TextBox1
End Dialog

Dim Dlg1 As TextBoxSample
rc% = Dialog(Dlg1)
End Sub
```

---

List boxes, combo boxes, and drop-down lists

List boxes show lists from which the user can select an option.

There are three types of list boxes:
- **Standard list boxes**
  Here, the user can choose one of the options from the list.

- **Combo boxes**
  Here, the user can either choose from a list of entries or manually enter his or her own input.

- **Drop-down list boxes**
  A space saving version of list boxes: The user must open it up before being able to choose an option.

### Syntax:

- **ListBox** $X, Y, Width, Height, Content, .ID$
- **ComboBox** $X, Y, Width, Height, Content, .ID$
- **DropListBox** $X, Y, Width, Height, Content, .ID$

The individual text entries are set through a string array which you need to fill before displaying the dialog. 

**ID** is a variable that contains the currently selected entry.

### Example:

```basic
Sub Main
    Dim MyList$(5)
    MyList(0) = "List Entry 1"
    MyList(1) = "List Entry 2"
    MyList(2) = "List Entry 3"
    MyList(3) = "List Entry 4"
    MyList(4) = "List Entry 5"
    MyList(5) = "List Entry 6"

    Begin Dialog BoxSample 16,35,256,89,"List box, combo box, and drop-down list"
        OKButton 204,24,40,14
        CancelButton 204,44,40,14
        ListBox 12,24,48,40, MyList$(),.Lstbox
        DropListBox 124,24,72,40, MyList$(),.DrpList
        ComboBox 68,24,48,40, MyList$(),.CmboBox
        Text 12,12,32,8,"List box:"
        Text 124,12,68,8,"Drop-down list:"
        Text 68,12,44,8,"Combo box:"
    End Dialog

    Dim Dlg1 As BoxSample
    rc% = Dialog(Dlg1)
```

---

**List, combo box, and drop-down list**

![List box, combo box, and drop-down list](image)
Check boxes

Check boxes are suitable for "Yes/No" or "On/Off" choices.

Syntax: CheckBox X, Y, Width, Height, Text, .ID

ID is a variable that contains the current state.

Example:

Sub Main

Begin Dialog CheckSample 15,32,149,96,"Check Boxes"
    OKButton 92,8,40,14
    CancelButton 92,32,40,14
    CheckBox 12, 8,60,8,"Check Box 1",.CheckBox1
    CheckBox 12,24,60,8,"Check Box 2",.CheckBox2
    CheckBox 12,40,60,8,"Check Box 3",.CheckBox3
    CheckBox 12,56,60,8,"Check Box 4",.CheckBox4
End Dialog

Dim Dlg1 As CheckSample
rc% = Dialog(Dlg1)

End Sub

Radio buttons and Group boxes

You use radio buttons (also called "option buttons") if you want to allow the user to choose from more than one option, but allow him or her to pick only one of them.

Radio buttons that belong together are usually put inside a group box. You can also use group boxes to visually group together any other type of dialog controls.
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Syntax:  
\begin{itemize}
  \item \textbf{OptionButton} \textit{X, Y, Width, Height, Text, \textit{ID1}}
  \item \textbf{OptionGroup} \textit{\textit{ID2}}
\end{itemize}

\textit{ID1} is a variable that contains the current state of the field.

\textit{ID2} is a variable that contains the index of the currently selected option.

Example:

```basic
Sub Main
    Begin Dialog GroupSample 31,32,185,96,"Radio Buttons and Group Boxes"
        OKButton 28,68,40,14
        CancelButton 120,68,40,14
        GroupBox 12,8,72,52,"Group Box",.GroupBox1
        GroupBox 100,8,72,52,"Group Box",.GroupBox2
        OptionGroup .OptionGroup1
        OptionButton 16,24,54,8,"Radio Button",.OptionButton1
        OptionButton 16,40,54,8,"Radio Button",.OptionButton2
        CheckBox 108,24,50,8,"Check Box",.CheckBox1
        CheckBox 108,40,50,8,"Check Box",.CheckBox2
    End Dialog
    Dim Dlg1 As GroupSample
    Button = Dialog (Dlg1)
End Sub
```

The dialog function

You can optionally connect a user-defined dialog box to a dialog function. This function is called when the dialog field is initialized and every time when the user operates a dialog control. With the help of a dialog function, it is possible to nest dialogs and to enable or disable dialog controls.

To connect a dialog box to a dialog function, append the function's name to the dialog definition, with a period in front of it. Here, for example, the dialog \textit{MyDlg} will be connected to the dialog function with the name \textit{MyDlgFunc}:

```basic
Begin Dialog MyDlg 60, 60, 260, 188, "Test", .MyDlgFunc
```
Monitoring dialog controls

Every control in the dialog box that you wish to monitor in the dialog function must have a unique identifier. It must be given as the last parameter of the control definition and must start with a period.

`CheckBox 8,56,203,16, "Show All", .Chk1`

Here, the identifier "Chk1" is assigned to the check box.

Syntax of the dialog function

The syntax of the dialog function is as follows:

```basic
Function FunctionName(ControlID$, Action%, SuppValue%)    
    [Instructions]
    FunctionName = ReturnValue
End Function
```

The dialog function returns a value if the user clicks on OK or Cancel. If you set this `ReturnValue` in the dialog function to 0, the dialog will close; with any other value, the dialog stays open.

The parameters of the dialog function:

- **ControlID$**: If `Action = 2`, this parameter contains the ID of the dialog control that the user activated (the value of the ID was defined in the dialog definition).

- **Action%**:  
  1, when the dialog is initialized (in this case, the other parameters have no meaning)  
  2, when the user activates a dialog control. The dialog control is identified through `ControlID$`, and `SuppValue%` contains additional information.

- **SuppValue%**: Information on the type of change that was made, depending on the type of the dialog control:
  - **Check Box**: If the box is unchecked, this is 0, else 1.  
  - **Radio Button**: The number of the selected radio button, with the first field of the radio button group having the number 0.  
  - **Command Button**: No meaning  
  - **OK**: 1  
  - **Cancel**: 2

In the following example, the dialog function of a dialog is evaluated by means of a Case branch. The parameter `SuppValue` is not tested in this example.

```basic
Sub Main
    Begin Dialog UserDialog1 60,60, 260, 188, "Dialog Function", .Dialogfn
        Text 8,10,73,13, "Text:", .FText
        TextBox 8, 26, 160, 18, .FText
    End Dialog
```

Language elements of SoftMaker Basic

checkBox 8, 56, 203, 16, "Show All", .chk1
GroupBox 8, 79, 230, 70, "Group Box:", .group
checkBox 18, 100, 189, 16, "Change the button captions", .chk2
pushButton 18, 118, 159, 16, "Button", .history
okButton 177, 8, 58, 21
cancelButton 177, 32, 58, 21
End Dialog

Dim Dlg1 As UserDialog1
x = Dialog(Dlg1)
End Sub ' (Main)

Text 8, 10, 73, 13, "Input Field"
TextBox 8, 26, 160, 18, .ftext
checkBox 8, 56, 203, 16, "Check Box ", .ch1
checkBox 18, 100, 189, 16, "Check Box ", .ch2
pushButton 18, 118, 159, 16, "Button", .but1
okButton 177, 8, 58, 21
cancelButton 177, 32, 58, 21
End Dialog

Dim Dlg2 As UserDialog2
Dlg2.fText = "This is the result"
Select Case Action%
Case 1
        DlgEnable "Group", 0
        DlgVisible "chk2", 0
        DlgVisible "History", 0
Case 2
        If ControlID$ = "ch1" Then
            DlgEnable "Group"
            DlgVisible "chk2"
        End If
        If ControlID$ = "chk2" Then
            DlgText "History", "Show another dialog"
        End If
        If ControlID$ = "History" Then
            Dialogfn =1
            x = Dialog(Dlg2)
        End If
Case Else
End Select
Dialogfn =1
End Function
OLE Automation

With help from OLE Automation, suitable applications (such as TextMaker or PlanMaker) can be controlled from SoftMaker Basic scripts.

*Tip:* Detailed information on programming TextMaker and PlanMaker can be found in the chapters [BasicMaker and TextMaker](#) and [BasicMaker and PlanMaker](#), respectively.

What is an OLE Automation object?

Every OLE Automation-capable program provides specific objects for scripting the application. The type of these objects depends on the application. A word processor like TextMaker provides objects which, for example, show the number of currently opened documents or the formatting of the currently selected text.

OLE Automation objects offers two ways of access:

- The Properties of OLE Automation objects are values that can be read and/or written and describe a certain characteristic of an object. A document window of a word processor has for example the following properties: name (of the opened document), width and height of the window, etc.
- Methods are functions that trigger an action in an OLE Automation object. An open document has for example a method to save it to disk.

Accessing OLE Automation objects

To access an OLE Automation object, you first must declare a variable of the type Object.

**Example:**

```vba
Dim MyObj As Object
```

This must then be "connected" to the application. There are two functions for this: While [CreateObject](#) starts the application automatically if it is not already running, [GetObject](#) can only connect to an instance of an application that is already running

**Example:**

```vba
Set MyObj = CreateObject("TextMaker.Application")
```

The variable `MyObj` now contains a reference to the main OLE Automation object of the application, and incidentally its name is always Application. You can access its child objects through dot notation – for example `MyObj.Application.Documents` (see also the next section).

If the OLE Automation connection is no longer needed, the variable should be separated from the object by setting its value to Nothing.

**Example:**

```vba
Set MyObj = Nothing ' Detach variable from object
```
Properties

To access the properties of an object, use dot notation in the style *Object.Property*.

**Example:**

\[
x = \text{MyObj.Application.Width}' \text{ Retrieve the width of the program window}
\]

*Or:*

\[
\text{MyObj.Application.Width} = 5' \text{ Set the width of the program window}
\]

Methods

When calling methods, dot notation is also used: *Object.Method*

**Example:**

\[
\text{MyObj.Application.Quit}' \text{ Exit from the application}
\]

Using collections

Apart from simple objects, there are also *collections* of objects.

TextMaker offers, for example, the collection *Documents* (a collection of all open documents). A collection is itself an object that is mainly accessible through properties of its parent object.

You can use the **For Each Next instruction** to enumerate all elements of a collection.

All collections offer the following properties and methods by default:

- **Count**  
  Returns the number of elements (read only).

- **Item(i)**  
  Provides the \(i\)-th element.

- **Add**  
  Adds a new object to the collection.

**Example**

Let us conclude with an example that demonstrates the use of OLE automation in practice. The example uses TextMaker's *Documents* collection which represents all currently opened documents. First, the number of opened documents is retrieved, then the names of all open documents are given. Finally, the documents are closed.

**Hint:** Detailed information on the subjects BasicMaker and TextMaker and BasicMaker and PlanMaker can be found in their respective chapters.

**Sub Main**

\[
\text{Dim tm As Object}
\]
\[
\text{Set tm = CreateObject("TextMaker.Application")}
\]
Language elements of SoftMaker Basic

```basic
tm.Visible = TRUE       ' Make TM visible
tm.Activate           ' Bring TM into the foreground

tm.Documents.Add       ' Create three new documents
tm.Documents.Add
tm.Documents.Add

Print tm.Documents.Count & " Documents opened"

Dim x As Object
For Each x In tm.Documents
    Print x.Name         ' Gives the names of the documents
Next

tm.Documents.Close     ' Close all documents
Set tm = Nothing       ' Cut connection to TM

End Sub
```
BasicMaker and TextMaker

BasicMaker was developed for the main purpose of allowing the user to script TextMaker and PlanMaker, in other words "control" or "program" them. This chapter contains all information on programming TextMaker. It contains the following sections:

- **Programming TextMaker**
  
  This section contains all the basic information required to program the word processor *TextMaker* with BasicMaker.

- **TextMaker's object model**
  
  This chapter describes all objects exposed by TextMaker for programming.

Note: Programming *PlanMaker* is covered in a separate chapter: BasicMaker and PlanMaker.

---

**Programming TextMaker**

Programming the word processor *TextMaker* and the spreadsheet *PlanMaker* is practically identical. The only difference is that some keywords have different names (for example PlanMaker.Application instead of TextMaker.Application). If you have already worked through the section Programming PlanMaker you will notice that the section you are currently reading is almost identical to it.

Naturally, the objects exposed by TextMaker are different from those of PlanMaker. A list of all objects exposed can be found in the next section TextMaker's object model.

To program TextMaker with BasicMaker, you mainly use OLE Automation commands. General information on this subject can be found in section OLE Automation.

Follow this schematic outline (details follow subsequently):

1. Declare a variable of type **Object**:
   
   ```vba
   Dim tm as Object
   ```

2. Make a connection to TextMaker via OLE Automation (TextMaker will be launched automatically if it is not already running):
   
   ```vba
   Set tm = CreateObject("TextMaker.Application")
   ```

3. Set the property **Application.Visible** to **True** so that TextMaker becomes visible:
   
   ```vba
   tm.Application.Visible = True
   ```

4. Now you can program TextMaker by reading and writing its "properties" and by invoking the "methods" it provides.
5. As soon as the TextMaker object is not required anymore, you should cut the connection to TextMaker:

    Set tm = Nothing

That was just a quick rundown of the necessary steps. More detailed information on programming TextMaker follows on the next pages. A list of all TextMaker objects and their respective properties and methods can be found in the section TextMaker's object model.

---

**Connecting to TextMaker**

In order to control TextMaker from BasicMaker, you first need to connect to TextMaker via OLE Automation. For this, first declare a variable of type Object, then assign to it the object "TextMaker.Application" through use of the CreateObject function.

```vba
Dim tm as Object
Set tm = CreateObject("TextMaker.Application")
```

If TextMaker is already running, this function simply connects to TextMaker; if not, then TextMaker will be started beforehand.

The object variable "tm" now contains a reference to TextMaker.

**Important: Making TextMaker visible**

*Please note:* If you start TextMaker in the way just described, its application window will be invisible by default. In order to make it visible, you must set the property Visible to True.

The complete chain of commands should therefore be as follows:

```vba
Dim tm as Object
Set tm = CreateObject("TextMaker.Application")
tm.Application.Visible = True
```

**The "Application" object**

The fundamental object that TextMaker exposes for programming is Application. All other objects – such as collections of open documents and windows – are attached to the Application object.

The Application object contains not only its own properties (such as Application.Left for the x coordinate of the application window) and methods (such as Application.Quit for exiting from TextMaker), but also contains pointers to other objects, for example Application.Options, that in turn have their own properties and methods, and pointers to collections such as Documents (the collection of all currently open documents).

**Notations**

As mentioned in the previous section, you need to use dot notation as usual with OLE Automation to access the provided properties, methods etc.
BasicMaker and TextMaker

For example, `Application.Left` lets you address the `Left` property of the `Application` object. `Application.Documents.Add` references the `Add` method of the `Documents` collection which in turn is a member of `Application`.

---

**Getting and setting TextMaker properties**

As soon as a connection with TextMaker has been made, you can "control" the application. For this, *properties* and *methods* are provided – this has already been discussed in the section OLE Automation.

Let's first talk about *properties*. Properties are options and settings that can be retrieved and sometimes modified.

For example, if you wish to retrieve TextMaker's application name, you can use the `Name` property of the `Application` object:

```vbscript
MsgBox "The name of this application is " & tm.Application.Name
```

`Application.Name` is a property that can only be read, but not written to. Other properties can be both retrieved and changed from BasicMaker scripts. For example, the coordinates of the TextMaker application window are stored in the properties `Left`, `Top`, `Width`, and `Height`. You can retrieve them as follows:

```vbscript
MsgBox "The left window position is at: " & tm.Application.Left
```

But you can also change the content of this property:

```vbscript
tm.Application.Left = 200
```

TextMaker reacts immediately and moves the left border of the application window to the screen position 200. You can also mix reading and changing the values of properties, as in the following example:

```vbscript
tm.Application.Left = tm.Application.Left + 100
```

Here, the current left border value is retrieved, increased by 100 and set as the new value for the left border. This will instruct TextMaker to move its left window position 100 pixels to the right.

There is a large number of properties in the `Application` object. A list of them can be found in the section TextMaker's object model.

---

**Using TextMaker's methods**

In addition to properties, *methods* exist, and they implement commands that direct TextMaker to execute a specific action.

For example, `Application.Quit` instructs TextMaker to stop running, and `Application.Activate` lets you force TextMaker to bring its application window to the foreground (if it's covered by windows from other applications):

```vbscript
tm.Application.Activate
```
Function methods and procedure methods

There are two types of methods: those that return a value to the BASIC program and those that do not. The former are called (in the style of other programming languages) "function methods" or simply "functions", the latter "procedure methods" or simply "procedures".

This distinction may sound a bit picky to you, but it is not because it effects on the notation of instructions.

As long as you call a method without parameters, there is no syntactical difference:

Call as procedure:

```vba
tm.Documents.Add ' Add a document to the collection of open documents
```

Call as function:

```vba
Dim newDoc as Object
Set newDoc = tm.Documents.Add ' The same (returning an object this time)
```

As soon as you access methods with parameters, you need to employ two different styles:

Call as procedure:

```vba
tm.ActiveDocument.Tables.Add 3, 3 ' Insert a 3-by-3 table
```

Call as function:

```vba
Dim newTable as Object
Set newTable = tm.ActiveDocument.Tables.Add(3, 3) ' now with a return value
```

As you can see, if you call the method as a procedure, you may not surround the parameters with parentheses. If you call it as a function, you must surround them with parentheses.

Using pointers to other objects

A third group of members of the Application object are pointers to other objects.

This may first sound a bit abstract at first, but is actually quite simple: It would clutter the Application object if all properties and methods of TextMaker were attached directly to the Application method. To prevent this, groups of related properties and methods have been parceled out and placed into objects of their own. For example, TextMaker has an Options object that lets you read out and modify many fundamental program settings:

```vba
tm.Application.Options.CreateBackup = True
MsgBox "Overwrite mode activated? " & tm.Application.Options.Overttype
```

Using collections

The fourth group of members of the Application object are pointers to collections.
Collections are, as their name indicates, lists of objects belonging together. For example, there is a collection called `Application.Documents` that contains all open documents and a collection called `Application.RecentFiles` with all files that are listed in the history section of the File menu.

There are two standardized ways of accessing collections, and TextMaker supports both of them. The more simple way is through the `Item` property that is part of every collection:

```
' Display the name of the first open document:
MsgBox tm.Application.Documents.Item(1).Name

' Close the (open) document "Test.tmd":
tm.Application.Documents.Item("Test.tmd").Close
```

If you wish to list all open documents, for example, first find out the number of open documents through the standardized `Count` property, then access the objects one by one:

```
' Return the names of all open documents:
For i=1 To tm.Application.Documents.Count
    MsgBox tm.Application.Documents.Item(i).Name
Next i
```

Every collection contains, by definition, the `Count` property which lets you retrieve the number of entries in the collection, and the `Item` property that lets you directly access one entry.

`Item` always accepts the number of the desired entry as an argument. Where it makes sense, it is also possible to pass other arguments to it, for example file names. You have seen this already above, when we passed both a number and a file name to `Item`.

For most collections, there is matching object type for their individual entries. The collection `Windows`, for example, has individual entries of type `Window` – note the use of the singular! One entry of the `Documents` collection is called `Document`, and an entry of the `RecentFiles` collection has the object type `RecentFile`.

**A more elegant approach to collections: For Each ... Next**

There is a more elegant way to access all entries in a collection consecutively: BasicMaker also supports the `For Each` instruction:

```
' Display the names of all open documents
Dim x As Object
For Each x In tm.Application.Documents
    MsgBox x.Name
Next x
```

This gives the same results as the method previously described:

```
For i=1 To tm.Application.Documents.Count
    MsgBox tm.Application.Documents.Item(i).Name
Next i
```

**Collections may have their own properties and methods**

Some collections may have their own properties and methods, in addition to the standard members `Item` and `Count`. For example, if you wish to create an empty document in TextMaker, this is achieved by adding a new entry to its `Documents` collection:

```
tm.Application.Documents.Add ' Create an empty document
```
Hints for simplifying notations

If you are beginning to wonder whether so much typing is really necessary to address a single document, we can reassure you that it's not! There are several ways to reduce the amount of typing required.

**Using With instructions**

The first shortcut is to use the *With* instruction when addressing *several* members of the same object.

First, the conventional style:

```vba
tm.Application.Left = 100
tm.Application.Top = 50
tm.Application.Width = 500
tm.Application.Height = 300
tm.Application.Options.CreateBackup = True
MsgBox tm.Application.ActiveDocument.Name
```

This code looks much clearer through use of the *With* instruction:

```vba
With tm.Application
    .Left = 100
    .Top = 50
    .Width = 500
    .Height = 300
    .Options.CreateBackup = True
    MsgBox .ActiveDocument.Name
End With
```

**Setting up helper object variables**

The next abbreviation is to create helper object variables for quickly accessing their members. Compare the following instructions:

Complicated:

```vba
Sub Complicated
    Dim tm As Object
    Set tm = CreateObject("TextMaker.Application")
    tm.Application.Visible = True ' Make TextMaker visible
    tm.Application.Documents.Add ' Add document
    tm.Application.ActiveDocument.Left = 100
    tm.Application.ActiveDocument.Top = 50
    tm.Application.ActiveDocument.Width = 222
    tm.Application.ActiveDocument.Height = 80
End Sub
```

Easier:

```vba
Sub Better
    Dim tm As Object
    Dim NewDocument As Object
    Set tm = CreateObject("TextMaker.Application")
    tm.Application.Visible = True ' Make TextMaker visible
```
After you created the object variable "NewDocument" in the second example and stored a reference to the new document in it (which conveniently is returned by the Add method of the Documents collection anyway), you can access the new document much more easily through this helper object variable.

Omitting default properties

There is yet another way to reduce the amount of typing required: Each object (for example, Application or Application.Documents) has one of its properties marked as its default property. Conveniently enough, you can always leave out default properties.

The default property of Application, for example, is Name. Therefore, the two following instructions are equivalent:

MsgBox tm.Application.Name       ' Display the application name of TextMaker
MsgBox tm.Application            ' Does exactly the same

Typically, the property that is used most often in an object has been designated its default property. For example, the most used property of a collection surely is the Item property, as the most common use of collections is to return one of their members. The following instructions therefore are equivalent:

MsgBox tm.Application.Documents.Item(1).Name
MsgBox tm.Application.Documents(1).Name

Finally things are getting easier again! But it gets even better: Name is the default property of a single Document object (note: "Document", not "Documents"!). Each Item of the Document collection is of the Document type. As Name is the default property of Document, it can be omitted:

MsgBox tm.Application.Documents(1)

Not easy enough yet? OK... Application is the default property of TextMaker. So, let's just leave out Application as well! The result:

MsgBox tm.Documents(1)

This basic knowledge should have prepared you to understand TextMaker's object model. You can now continue with the section TextMaker's object model that contains a detailed list of all objects that TextMaker provides.

TextMaker’s object model

TextMaker provides BasicMaker (and all other OLE Automation compatible programming languages) with the objects listed below.

Notes:

- Properties marked with "R/O" are "Read Only" (i.e. write-protected). They can be read, but not changed.
## The default property of an object is marked in *italics*.

The following table lists all objects and collections available in TextMaker:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>Object</td>
<td>&quot;Root object&quot; of TextMaker</td>
</tr>
<tr>
<td>Options</td>
<td>Object</td>
<td>Global options</td>
</tr>
<tr>
<td>UserProperties</td>
<td>Collection</td>
<td>Collection of all parts of the user's private and business address</td>
</tr>
<tr>
<td>UserProperty</td>
<td>Object</td>
<td>An individual part of the user's address</td>
</tr>
<tr>
<td>CommandBars</td>
<td>Collection</td>
<td>Collection of all toolbars</td>
</tr>
<tr>
<td>CommandBar</td>
<td>Object</td>
<td>An individual toolbar</td>
</tr>
<tr>
<td>AutoCorrect</td>
<td>Object</td>
<td>Automatic text correction and SmartText</td>
</tr>
<tr>
<td>AutoCorrectEntries</td>
<td>Collection</td>
<td>Collection of all SmartText entries</td>
</tr>
<tr>
<td>AutoCorrectEntry</td>
<td>Object</td>
<td>An individual SmartText entry</td>
</tr>
<tr>
<td>Documents</td>
<td>Collection</td>
<td>Collection of all open documents</td>
</tr>
<tr>
<td>Document</td>
<td>Object</td>
<td>An individual open document</td>
</tr>
<tr>
<td>DocumentProperties</td>
<td>Collection</td>
<td>Collection of all document properties of a document</td>
</tr>
<tr>
<td>DocumentProperty</td>
<td>Object</td>
<td>An individual document property</td>
</tr>
<tr>
<td>PageSetup</td>
<td>Object</td>
<td>The page settings of a document</td>
</tr>
<tr>
<td>Selection</td>
<td>Object</td>
<td>The selection or cursor in a document</td>
</tr>
<tr>
<td>Font</td>
<td>Object</td>
<td>The character formatting of the selection</td>
</tr>
<tr>
<td>Paragraphs</td>
<td>Collection</td>
<td>Collection of all paragraphs in a document</td>
</tr>
<tr>
<td>Paragraph</td>
<td>Object</td>
<td>An individual paragraph in a document</td>
</tr>
<tr>
<td>Range</td>
<td>Object</td>
<td>Starting and ending position of a paragraph</td>
</tr>
<tr>
<td>DropCap</td>
<td>Object</td>
<td>The drop cap character of a paragraph</td>
</tr>
<tr>
<td>Tables</td>
<td>Collection</td>
<td>Collection of all tables in a document</td>
</tr>
<tr>
<td>Table</td>
<td>Object</td>
<td>An individual table</td>
</tr>
<tr>
<td>Rows</td>
<td>Collection</td>
<td>Collection of all table rows in a table</td>
</tr>
<tr>
<td>Row</td>
<td>Object</td>
<td>An individual table row</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cells</td>
<td>Collection</td>
<td>Collection of all cells in a table row</td>
</tr>
<tr>
<td>Cell</td>
<td>Object</td>
<td>An individual table cell</td>
</tr>
<tr>
<td>Borders</td>
<td>Collection</td>
<td>Collection of all border lines (left, right, top, bottom, etc.) of a paragraph, a table, a table row, or a cell</td>
</tr>
<tr>
<td>Border</td>
<td>Object</td>
<td>An individual border line</td>
</tr>
<tr>
<td>Shading</td>
<td>Object</td>
<td>The shading of paragraphs, tables, table rows, and cells</td>
</tr>
<tr>
<td>FormFields</td>
<td>Collection</td>
<td>Collection of all form objects in a document</td>
</tr>
<tr>
<td>FormField</td>
<td>Object</td>
<td>An individual form object</td>
</tr>
<tr>
<td>TextInput</td>
<td>Object</td>
<td>An individual form object, viewed as a text field</td>
</tr>
<tr>
<td>CheckBox</td>
<td>Object</td>
<td>An individual form object, viewed as a check box</td>
</tr>
<tr>
<td>DropDown</td>
<td>Object</td>
<td>An individual form object, viewed as a selection list</td>
</tr>
<tr>
<td>ListEntries</td>
<td>Collection</td>
<td>Collection of all entries in a selection list</td>
</tr>
<tr>
<td>ListEntry</td>
<td>Object</td>
<td>An individual entry in a selection list</td>
</tr>
<tr>
<td>Windows</td>
<td>Collection</td>
<td>Collection of all open document windows</td>
</tr>
<tr>
<td>Window</td>
<td>Object</td>
<td>An individual open document window</td>
</tr>
<tr>
<td>View</td>
<td>Object</td>
<td>The view settings of a document window</td>
</tr>
<tr>
<td>Zoom</td>
<td>Object</td>
<td>The zoom level of a document window</td>
</tr>
<tr>
<td>RecentFiles</td>
<td>Collection</td>
<td>Collection of all recently opened files, as listed in the File menu</td>
</tr>
<tr>
<td>RecentFile</td>
<td>Object</td>
<td>An individual recently opened file</td>
</tr>
<tr>
<td>FontNames</td>
<td>Collection</td>
<td>Collection of all fonts installed</td>
</tr>
<tr>
<td>FontName</td>
<td>Object</td>
<td>An individual installed font</td>
</tr>
</tbody>
</table>

Detailed descriptions of all objects and collections follow on the next pages.

**Application (object)**

Access path: Application
1 Description

**Application** is the "root object" for all other objects in TextMaker. It is the central control object that is used to carry out the whole communication between your Basic script and TextMaker.

2 Access to the object

There is exactly one instance of the **Application** object during the whole runtime of TextMaker. It is accessed directly through the object variable returned by the **CreateObject** function:

```vba
Set tm = CreateObject("TextMaker.Application")
MsgBox tm.Application.Name
```

As **Application** is the default property of TextMaker, it can generally be omitted:

```vba
Set tm = CreateObject("TextMaker.Application")
MsgBox tm.Name ' has the same meaning as tm.Application.Name
```

3 Properties, objects, collections, and methods

Properties:
- **FullName** R/O
- **Name** R/O (default property)
- **Path** R/O
- **Build** R/O
- **Bits** R/O
- **Visible**
- **Caption** R/O
- **Left**
- **Top**
- **Width**
- **Height**
- **WindowState**
- **DisplayScrollBars**

Objects:
- **ActiveDocument** → **Document**
- **ActiveWindow** → **Window**
- **Options** → **Options**
- **UserProperties** → **UserProperties**
- **CommandBars** → **CommandBars**
- **AutoCorrect** → **AutoCorrect**
- **Application** → **Application**

Collections:
- **Documents** → **Documents**
- **Windows** → **Windows**
- **RecentFiles** → **RecentFiles**
### BasicMaker and TextMaker

- **FontNames → FontNames**

  Methods:
  - `CentimetersToPoints`
  - `MillimetersToPoints`
  - `InchesToPoints`
  - `PicasToPoints`
  - `LinesToPoints`
  - `Activate`
  - `Quit`

#### FullName (property, R/O)

Data type: **String**

Returns the name and path of the program (e.g. "C:\Program Files\SoftMaker Office\TextMaker.exe").

#### Name (property, R/O)

Data type: **String**

Returns the name of the program (i.e., "TextMaker").

#### Path (property, R/O)

Data type: **String**

Returns the path of the program, for example "C:\Program Files\SoftMaker Office\".

#### Build (property, R/O)

Data type: **String**

Returns the build number of the program as a string, for example "582".

#### Bits (property, R/O)

Data type: **String**

Returns a string with the "bitness" of the program: "16" for the 16 bit version of TextMaker and "32" for the 32 bit version.

#### Visible (property)

Data type: **Boolean**

Gets or sets the visibility of the program window:

```
tm.Application.Visible = True ' TextMaker will be visible
```
tm.Application.Visible = False ' TextMaker will be invisible

**Important:** By default, **Visible** is set to **False** – thus, TextMaker is initially invisible until you explicitly make it visible.

**Caption (property, R/O)**

Data type: **String**

Returns a string with the contents of the title bar of the program window (e.g. "TextMaker - Readme.tmd").

**Left (property)**

Data type: **Long**

Gets or sets the horizontal position (= left edge) of the program window on the screen, measured in screen pixels.

**Top (property)**

Data type: **Long**

Gets or sets the vertical position (= top edge) of the program window on the screen, measured in screen pixels.

**Width (property)**

Data type: **Long**

Gets or sets the width of the program window on the screen, measured in screen pixels.

**Height (property)**

Data type: **Long**

Gets or sets the height of the program window on the screen, measured in screen pixels.

**WindowState (property)**

Data type: **Long** (SmoWindowState)

Gets or sets the current state of the program window. The possible values are:

<table>
<thead>
<tr>
<th>WindowsState</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoWindowStateNormal</td>
<td>1</td>
<td>normal</td>
</tr>
<tr>
<td>smoWindowStateMinimize</td>
<td>2</td>
<td>minimized</td>
</tr>
<tr>
<td>smoWindowStateMaximize</td>
<td>3</td>
<td>maximized</td>
</tr>
</tbody>
</table>
**DisplayScrollBars (property)**

Data type: **Boolean**

Gets or sets the option which indicates whether the document is shown with both a horizontal and a vertical scrollbar.

**ActiveDocument (pointer to object)**

Data type: **Object**

Returns the currently active **Document** object that you can use to access the active document.

**ActiveWindow (pointer to object)**

Data type: **Object**

Returns the currently active **Window** object that you can use to access the active document window.

**Options (pointer to object)**

Data type: **Object**

Returns the **Options** object that you can use to access global program settings of TextMaker.

**UserProperties (pointer to object)**

Data type: **Object**

Returns the **UserProperties** object that you can use to access the name and address of the user (as entered in the dialog box of TextMaker's **Tools > Options** menu command, **General** tab).

**CommandBars (pointer to object)**

Data type: **Object**

Returns the **CommandBars** object that you can use to access the toolbars of TextMaker.

**AutoCorrect (pointer to object)**

Data type: **Object**

Returns the **AutoCorrect** object that you can use to access the automatic correction settings of TextMaker.

**Application (pointer to object)**

Data type: **Object**
Returns the Application object, i.e. the pointer to itself. This object pointer is basically superfluous and only provided for the sake of completeness.

**Documents (pointer to collection)**

Data type: **Object**

Returns the Documents collection, a collection of all currently opened documents

**Windows (pointer to collection)**

Data type: **Object**

Returns the Windows collection, a collection of all currently opened document windows

**RecentFiles (pointer to collection)**

Data type: **Object**

Returns the RecentFiles collection, a collection of the recently opened documents (as displayed at the bottom of TextMaker's File menu)

**FontNames (pointer to collection)**

Data type: **Object**

Returns the FontNames collection, a collection of all installed fonts

**CentimetersToPoints (method)**

Converts the given value from centimeters (cm) to points (pt). This function is useful when you make calculations in centimeters, but a TextMaker function accepts only points as its measurement unit.

Syntax:

```
CentimetersToPoints(Centimeters)
```

Parameters:

- **Centimeters** (type: Single) specifies the value to be converted.

Return type:

- **Single**

Example:

```vbnet
' Set the top margin of the active document to 3cm
```
**MillimetersToPoints (method)**

Converts the given value from millimeters (mm) to points (pt). This function is useful if you make calculations in millimeters, but a TextMaker function accepts only points as its measurement unit.

Syntax:

```vbnet
MillimetersToPoints(Millimeters)
```

Parameters:

- **Millimeters** (type: `Single`) specifies the value to be converted.

Return type:

- `Single`

Example:

```
' Set the top margin of the active document to 30mm
```

**InchesToPoints (method)**

Converts the given value from inches to points (pt). This function is useful if you make calculations in inches, but a TextMaker function accepts only points as its measurement unit.

Syntax:

```vbnet
InchesToPoints(Inches)
```

Parameters:

- **Inches** (type: `Single`) specifies the value to be converted.

Return type:

- `Single`

Example:

```
' Set the bottom margin of the active document to 1 inch
```

**PicasToPoints (method)**

Converts the given value from picas to points (pt). This function is useful if you make calculations in picas, but a TextMaker function accepts only points as its measurement unit.

Syntax:

```vbnet
PicasToPoints(Picas)
```

Parameters:

- **Picas** (type: `Single`) specifies the value to be converted.
Return type:

Single

Example:

' Set the bottom margin of the active document to 6 picas

**LinesToPoints (method)**

Identical to the **PicasToPoints** method (see there).

Syntax:

```
LinesToPoints(Lines)
```

Parameters:

- **Lines** (type: **Single**) specifies the value to be converted.

Return type:

Single

Example:

' Set the bottom margin of the active document to 6 picas

**Activate (method)**

Brings the program window to the foreground and sets the focus to it.

Syntax:

```
Activate
```

Parameters:

- none

Return type:

- none

Example:

' Bring TextMaker to the foreground
tm.Application.Activate

Hint: This command is only successful if **Application.Visible = True**.

**Quit (method)**

Ends the program.
Syntax:

```
Quit
```

Parameters:
none

Return type:
none

Example:

```
' End TextMaker
tm.Application.Quit
```

If there are any unsaved documents open, the user will be asked if they should be saved. If you want to avoid this question, you need to either close all opened documents in your program or set the property `Saved` for the documents to `True` (see `Document`)

---

**Options (object)**

Access path: `Application` ➔ `Options`

1 **Description**

The `Options` object consolidates many global program settings, most of which can be found in the dialog box of the `Tools > Options` menu command in TextMaker.

2 **Access to the object**

There is exactly one instance of the `Options` object during the whole runtime of TextMaker. It is accessed through the `Application.Options` object:

```
Set tm = CreateObject("TextMaker.Application")
tm.Application.Options.EnableSound = True
```

3 **Properties, objects, collections, and methods**

Properties:
- `AutoFormatReplaceQuotes`
- `CheckSpellingAsYouType`
- `ShowSpellingErrors`
- `ShowGermanSpellingReformErrors`
- `CreateBackup`
- `DefaultFilePath`
- `DefaultTemplatePath`
- EnableSound
- Overtype
- SaveInterval
- SavePropertiesPrompt
- AutoWordSelection
- PasteAdjustWordSpacing
- TabIndentKey
- DefaultFileFormat

Objects:
- Application → Application
- Parent → Application

### AutoFormatReplaceQuotes (property)

Data type: Long (SmoQuotesStyle)

Gets or sets the setting whether neutral quotation marks should be automatically converted to typographic ones. The possible values are:

- smoQuotesNeutral = 0 ' Neutral = off
- smoQuotesGerman = 1 ' German
- smoQuotesSwiss = 2 ' Swiss German
- smoQuotesEnglish = 3 ' English
- smoQuotesFrench = 4 ' French
- smoQuotesAuto = 5 ' Auto, depending on language

### CheckSpellingAsYouType (property)

Data type: Boolean

Gets or sets the setting "Background spell-checking" (True or False).

### ShowSpellingErrors (property)

Data type: Boolean

Gets or sets the setting "Underline typos in red" (True or False).

### ShowGermanSpellingReformErrors (property)

Data type: Boolean

Gets or sets the setting "Underline old German spelling in blue" (True or False).

### CreateBackup (property)

Data type: Boolean

Gets or sets the setting "Create backup files" (True or False).
**DefaultFilePath (property)**

Data type: *String*

Gets or sets the file path used by default to save and open documents.

This is just a temporary setting: When you execute the menu command *File > Open* or *File > Save As* the next time, the path chosen here will appear in the dialog box. If the user changes the path, this path will then be the new default file path.

**DefaultTemplatePath (property)**

Data type: *String*

Gets or sets the file path used by default to store document templates.

This setting is saved permanently. Each call to the *File > New* menu command lets you see the document templates in the path given here.

**EnableSound (property)**

Data type: *Boolean*

Gets or sets the setting "Beep on errors" (*True* or *False*).

**OverType (property)**

Data type: *Boolean*

Gets or sets Overwrite/Insert mode (*True*=Overwrite, *False*=Insert).

**SaveInterval (property)**

Data type: *Long*

Gets or sets the setting "Autosave documents every $n$ minutes" (*0*=off).

**SavePropertiesPrompt (property)**

Data type: *Boolean*

Gets or sets the setting "Prompt for summary information when saving" (*True* or *False*).

**AutoWordSelection (property)**

Data type: *Boolean*

Gets or sets the setting "Select whole words when selecting" (*True* or *False*).
**PasteAdjustWordSpacing (property)**

Data type: **Boolean**

Gets or sets the setting "Add or remove spaces when pasting" (True or False).

**TabIndentKey (property)**

Data type: **Boolean**

Gets or sets the setting "Set left and first line indent with Tab and Backspace keys" (True or False).

**DefaultFileFormat (property)**

Data type: **Long** (TmDefaultFileFormat)

Gets or sets the standard file format in which TextMaker saves newly created documents. The possible values are:

- **tmDefaultFileFormatTextMaker** = 0 ' TextMaker (.tmd)
- **tmDefaultFileFormatWinWordXP** = 1 ' Microsoft Word XP/2003 (.doc)
- **tmDefaultFileFormatWinWord97** = 2 ' Microsoft Word 97/2000 (.doc)
- **tmDefaultFileFormatWinWord6** = 3 ' Microsoft Word 6.0/95 (.doc)
- **tmDefaultFileFormatOpenDoc** = 4 ' OpenDocument (.odt)
- **tmDefaultFileFormatRTF** = 5 ' RTF Rich Text Format (.rtf)

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**

**UserProperties (collection)**

Access path: **Application** ➔ **UserProperties**
**Description**

The **UserProperties** collection contains all components of the user's personal and business address (as entered in the dialog box of TextMaker's **Tools > Options** menu command, **General** tab).

The individual elements of this collection are of the type **UserProperty**.

**Access to the collection**

There is exactly one instance of the **UserProperties** collection during the whole runtime of TextMaker. It is accessed through the **Application.UserProperties** object:

```
' Show the first UserProperty (the user's last name)
MsgBox tm.Application.UserProperties.Item(1).Value
```

**Properties, objects, collections, and methods**

Properties:

- **Count** R/O

Objects:

- **Item** → **UserProperty** (default object)
- **Application** → **Application**
- **Parent** → **Application**

**Count (property, R/O)**

Data type: **Long**

Returns the number of **UserProperty** objects in the collection, ie the number of all components of the user's address data (last name, first name, street etc – separated into personal and business address)

This value is constantly 24, since there are exactly 24 such elements.

**Item (pointer to object)**

Data type: **Object**

Returns an individual **UserProperty** object that you can use to get or set an individual component of the user's personal or business address (last name, first name, street, etc)

*Which* UserProperty object you get depends on the numeric value that you pass to **Item**. The following table shows the admissible values:

<table>
<thead>
<tr>
<th>smoUserHomeAddressName</th>
<th>smoUserHomeAddressFirstName</th>
<th>smoUserHomeAddressStreet</th>
<th>smoUserHomeAddressZip</th>
<th>smoUserHomeAddressCity</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 1 ' Last name (personal)</td>
<td>= 2 ' First name (personal)</td>
<td>= 3 ' Street (personal)</td>
<td>= 4 ' ZIP code (personal)</td>
<td>= 5 ' City (personal)</td>
</tr>
</tbody>
</table>
### smoUserHomeAddress

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoUserHomeAddressPhone</td>
<td>6</td>
<td>Phone (personal)</td>
</tr>
<tr>
<td>smoUserHomeAddressFax</td>
<td>7</td>
<td>Fax (personal)</td>
</tr>
<tr>
<td>smoUserHomeAddressEmail</td>
<td>8</td>
<td>E-mail address (personal)</td>
</tr>
<tr>
<td>smoUserHomeAddressPhone2</td>
<td>9</td>
<td>Mobile phone (personal)</td>
</tr>
<tr>
<td>smoUserHomeAddressHomepage</td>
<td>10</td>
<td>Homepage (personal)</td>
</tr>
<tr>
<td>smoUserBusinessAddressName</td>
<td>11</td>
<td>Last name (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressFirstName</td>
<td>12</td>
<td>First name (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressCompany</td>
<td>13</td>
<td>Company (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressDepartment</td>
<td>14</td>
<td>Department (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressStreet</td>
<td>15</td>
<td>Street (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressZip</td>
<td>16</td>
<td>ZIP code (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressCity</td>
<td>17</td>
<td>City (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressPhone1</td>
<td>18</td>
<td>Phone (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressFax</td>
<td>19</td>
<td>Fax (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressEmail1</td>
<td>20</td>
<td>E-mail address (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressPhone2</td>
<td>21</td>
<td>Mobile phone (business)</td>
</tr>
<tr>
<td>smoUserBusinessAddressHomepage</td>
<td>22</td>
<td>Homepage (business)</td>
</tr>
<tr>
<td>smoUserHomeAddressInitials</td>
<td>23</td>
<td>User initials (personal)</td>
</tr>
<tr>
<td>smoUserBusinessAddressInitials</td>
<td>24</td>
<td>User initials (business)</td>
</tr>
</tbody>
</table>

### Examples:

```vba
' Show the user's last name (personal)
MsgBox tm.Application.UserProperties.Item(1).Value

' Change the business e-mail address to test@example.com
With tm.Application
    .UserProperties.Item(smoUserBusinessAddressEmail).Value = "test@example.com"
End With
```

### Application (pointer to object)

**Data type:** Object

Returns the `Application` object

### Parent (pointer to object)

**Data type:** Object

Returns the parent object, i.e. `Application`

### UserProperty (object)

**Access path:** `Application` ➔ `UserProperties` ➔ `Item`
1 Description

A UserProperty object represents one individual component of the user's personal or business address (for example, the ZIP code or the phone number).

There is one UserProperty object for each of these components. The number of these objects is constant, since you cannot create new address components.

2 Access to the object

The individual UserProperty objects can be accessed solely through enumerating the elements of the Application.UserProperties collection. The type of this collection is UserProperties.

Example:

```vbscript
' Show the contents of the first address element (last name, personal)
MsgBox tm.Application.UserProperties.Item(1).Value
```

3 Properties, objects, collections, and methods

Properties:
- **Value** (default property)

Objects:
- **Application** → Application
- **Parent** → UserProperties

**Value (property)**

Data type: String

Gets or sets the contents of the address component. The following example sets the company name of the user:

```vbscript
Sub Example()
    Set tm = CreateObject("TextMaker.Application")
End Sub
```

**Application (pointer to object)**

Data type: Object

Returns the Application object

**Parent (pointer to object)**

Data type: Object
BasicMaker and TextMaker

Returns the parent object, i.e. UserProperties

**CommandBars (collection)**

**Access path:** Application ➔ CommandBars

---

1 **Description**

The CommandBars collection contains all toolbars available in TextMaker. The individual elements of this collection are of the type CommandBar.

---

2 **Access to the collection**

There is exactly one instance of the CommandBars collection during the whole runtime of TextMaker. It is accessed through the Application.CommandBars object:

```vba
' Show the name of the first toolbar
MsgBox tm.Application.CommandBars.Item(1).Name

' The same, but easier, using the default property
MsgBox tm.CommandBars(1)
```

---

3 **Properties, objects, collections, and methods**

Properties:
- **Count** R/O
- **DisplayFonts**
- **DisplayTooltips**

Objects:
- **Item** ➔ CommandBar (default object)
- **Application** ➔ Application
- **Parent** ➔ Application

**Count (property, R/O)**

Data type: Long

Returns the number of CommandBar objects in the collection, i.e. the number of toolbars available

**DisplayFonts (property)**

Data type: Boolean
Gets or sets the setting "Show fonts in font lists" (True or False).

DisplayTooltips (property)

Data type: Boolean

Gets or sets the setting whether a tooltip should be displayed when the mouse cursor is pointed to a toolbar button.

Corresponds to the setting "Show tooltips" in the dialog of the Tools > Options menu command.

Item (pointer to object)

Data type: Object

Returns an individual CommandBar object that you can use to access an individual toolbar

Which CommandBar object you get depends on the value that you pass to Item. You can specify either the numeric index or the name of the desired toolbar. Examples:

' Make the first toolbar invisible

' Make the toolbar named "Formatting" invisible
 tm.Application.CommandBars.Item("Formatting").Visible = False

Note: It is not advisable to use the names of toolbars as a reference, since these names are different in each language that TextMaker's user interface supports. For example, if the user interface language is set to German, the name of the "Formatting" toolbar changes to "Formatleiste".

Instead, it is recommended to use the following symbolic constants for toolbars:

tmBarStatusShort = 1 ' Status bar (no documents open)
tmBarStandardShort = 2 ' Standard toolbar (no documents open)
tmBarStatus = 3 ' Status bar
tmBarStandard = 4 ' Standard toolbar
tmBarFormatting = 5 ' Formatting toolbar
tmBarOutliner = 6 ' Outliner toolbar
tmBarObjects = 7 ' Objects toolbar
tmBarFormsEditing = 8 ' Forms toolbar
tmBarMailMerge = 9 ' Mail merge toolbar
tmBarDatabase = 10 ' Database toolbar
tmBarDatabaseStatus = 11 ' Status bar (in database windows)
tmBarTable = 12 ' Table toolbar
tmBarStatistics = 13 ' Statistics toolbar
tmBarPicture = 14 ' Graphics toolbar
tmBarReviewing = 16 ' Reviewing toolbar
tmBarHeaderAndFooter = 17 ' Header and footer toolbar
tmBarFullscreen = 19 ' Full screen toolbar

Application (pointer to object)

Data type: Object
Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**

---

**CommandBar (object)**

Access path: **Application** → **CommandBars** → **Item**

1. **Description**

A **CommandBar** object represents one individual toolbar.

For each toolbar there is its own **CommandBar** object. If you create new toolbars or delete them, the respective **CommandBar** objects will be created or deleted dynamically.

2. **Access to the object**

The individual **CommandBar** objects can be accessed solely through enumerating the elements of the **Application.CommandBars** collection. The type of this collection is **CommandBars**

Example:

```vba
' Show the name of the first toolbar
MsgBox tm.Application.CommandBars.Item(1).Name

' The same, but easier, using the default property
MsgBox tm.CommandBars(1)
```

3. **Properties, objects, collections, and methods**

**Properties:**

- **Name** (default property)
- **Visible**

**Objects:**

- **Application** → **Application**
- **Parent** → **CommandBars**

---

**Name (property)**

Data type: **String**
Gets or sets the name of the toolbar.

Example:

```vbscript
' Show the name of the first toolbar
MsgBox tm.Application.CommandBars.Item(1).Name
```

<table>
<thead>
<tr>
<th>Visible (property)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: <strong>Boolean</strong></td>
</tr>
<tr>
<td>Gets or sets the visibility of the toolbar. The following example makes the &quot;Formatting&quot; toolbar invisible:</td>
</tr>
</tbody>
</table>

```vbscript
Sub Example()
    Set tm = CreateObject("TextMaker.Application")
    tm.Application.CommandBars.Item("Formatting").Visible = False
End Sub
```

<table>
<thead>
<tr>
<th>Application (pointer to object)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: <strong>Object</strong></td>
</tr>
<tr>
<td>Returns the <a href="#">Application</a> object</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parent (pointer to object)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: <strong>Object</strong></td>
</tr>
<tr>
<td>Returns the parent object, i.e. <a href="#">CommandBars</a></td>
</tr>
</tbody>
</table>

**AutoCorrect (object)**

Access path: [Application](#) \rightarrow [AutoCorrect](#)

### Description

The **AutoCorrect** object contains settings related to automatic text correction and all SmartText entries.

### Access to the object

There is exactly one instance of the **AutoCorrect** object during the whole runtime of TextMaker. It is accessed through the [Application.AutoCorrect](#) object:

```vbscript
' Show the number of SmartText entries
Set tm = CreateObject("TextMaker.Application")
```
## Properties, objects, collections, and methods

### Properties:
- **CorrectInitialCaps**
- **CorrectSentenceCaps**
- **ReplaceText**

### Objects:
- **Application**
- **Parent**

### Collections:
- **Entries**

### CorrectInitialCaps (property)
**Data type:** Boolean

Gets or sets the setting "Correct first two uppercase letters".

If this property is **True**, TextMaker automatically corrects the case of the second letter in words that begin with two capital letters (for example "HEnry" will be changed to "Henry").

### CorrectSentenceCaps (property)
**Data type:** Boolean

Gets or sets the setting "Capitalize first letter of sentences".

If this property is **True**, TextMaker capitalizes the first letter of a sentence in case it was accidently written in lowercase.

### ReplaceText (property)
**Data type:** Boolean

Gets or sets the setting "Expand SmartText entries".

If this property is **True**, SmartText entries entered in the document will be automatically replaced by the SmartText content (for example: You type "sd" and TextMaker expands it with "sales department").

### Application (pointer to object)
**Data type:** Object

Returns the **Application** object
Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. **Application**

Entries (pointer to collection)

Data type: **Object**

Returns the **AutoCorrectEntries** collection which contains all SmartText entries

AutoCorrectEntries (collection)

Access path: **Application** → **AutoCorrect** → **Entries**

1 Description

The **AutoCorrectEntries** collection contains all SmartText entries defined. The individual elements of this collection are of the type **AutoCorrectEntry**

2 Access to the collection

There is exactly one instance of the **AutoCorrectEntries** collection during the whole runtime of TextMaker. It is accessed through the **Application.AutoCorrect.Entries** object:

```plaintext
' Create a SmartText entry named "sd" containing "sales department"
```

3 Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → **AutoCorrectEntry** (default object)
- **Application** → **Application**
- **Parent** → **Application**

Methods:
- **Add**
**Count (property, R/O)**

Data type: **Long**

Returns the number of **AutoCorrectEntry** objects, i.e., the number of the currently defined SmartText entries.

**Item (pointer to object)**

Data type: **Object**

Returns an individual **AutoCorrectEntry** object, i.e., the definition of one individual SmartText entry. Which AutoCorrect object you get depends on the value that you pass to **Item**. You can specify either the numeric index or the name of the desired SmartText entry. Examples:

```vbs
' Show the contents of the first defined SmartText entry

' Show the contents of the SmartText entry with the name "sd"
MsgBox tm.Application.AutoCorrect.Entries.Item("sd").Value
```

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e., **AutoCorrect**

**Add (method)**

Add a new **AutoCorrectEntry** entry.

Syntax:

```
Add Name, Value
```

Parameters:

- **Name** (type: **String**): The name for the new SmartText entry. If the name is empty or already exists, the call of the method fails.

- **Value** (type: **String**): The text for the new SmartText entry. If the passed string is empty, the call of the method fails.

Return type:

- **Object** (an **AutoCorrectEntry** object which represents the new SmartText entry)
Example:

```vbnet
' Create a SmartText entry named "sd" containing "sales department"
```

---

**AutoCorrectEntry (object)**

Access path:  **Application** → **AutoCorrect** → **Entries** → **Item**

1. **Description**

An **AutoCorrectEntry** object represents one individual SmartText entry, for example, "sd" for "sales department".

For each SmartText entry there is its own **AutoCorrectEntry** object. If you create SmartText entries or delete them, the respective **AutoCorrectEntry** objects will be created or deleted dynamically.

2. **Access to the object**

The individual **AutoCorrectEntry** objects can be accessed solely through enumerating the elements of the collection **Application.AutoCorrect.Entries**. The type of this collection is **AutoCorrectEntries**

Example:

```vbnet
' Show the name of the first SmartText entry
MsgBox tm.Application.AutoCorrect.Entries.Item(1).Name
```

3. **Properties, objects, collections, and methods**

Properties:
- **Name** (default property)
- **Value**

Objects:
- **Application** → **Application**
- **Parent** → **AutoCorrectEntries**

Methods:
- **Delete**

**Name (property)**

Data type: **String**

Gets or sets the name of the SmartText entry (e.g. "sd").
**Value (property)**

Data type: **String**

Gets or sets the contents of the SmartText entry (e.g. "sales department").

**Application (pointer to object)**

Data type: **Object**

Returns the Application object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. AutoCorrectEntries.

**Delete (method)**

Deletes an AutoCorrectEntry object from the AutoCorrectEntries collection.

Syntax:

```
Delete
```

Parameters:

none

Return type:

none

Examples:

```
' Delete the first SmartText entry

' Delete the SmartText entry with the name "sd"
```

**Documents (collection)**

Access path: Application ➔ Documents
1 Description

The **Documents** collection contains all opened documents. The individual elements of this collection are of the type **Document**.

2 Access to the collection

There is exactly one instance of the **Documents** collection during the whole runtime of TextMaker. It is accessed through the **Application.Documents** object:

```
' Show the number of opened documents
MsgBox tm.Application.Documents.Count

' Show the name of the first opened document
MsgBox tm.Application.Documents(1).Name
```

3 Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → **Document** (default object)
- **Application** → **Application**
- **Parent** → **Application**

Methods:
- **Add**
- **Open**
- **Close**

**Count (property, R/O)**

Data type: **Long**

Returns the number of **Document** objects in the collection, ie the number of the currently opened documents

**Item (pointer to object)**

Data type: **Object**

Returns an individual **Document** object, ie an individual open document

*Which Document object you get depends on the value that you pass to Item. You can specify either the numeric index or the name of the desired document. Examples:*

```
' Show the name of the first document
MsgBox tm.Application.Documents.Item(1).FullName
```
Show the name of the document "Test.tmd" (provided that is it opened)
MsgBox tm.Application.Documents.Item("Test.tmd").FullName

' You can also specify the full path
MsgBox tm.Application.Documents.Item("c:\Documents\Test.tmd").FullName

**Application (pointer to object)**

Data type: Object

Returns the Application object

**Parent (pointer to object)**

Data type: Object

Returns the parent object, i.e. Application

**Add (method)**

Creates a new empty document, based either on the standard document template Normal.tmv or any other document template you specify.

Syntax:

```
Add [Template]
```

Parameters:

- **Template** (optional; type: String): Path and file name of the document template on which your document should be based. If omitted, the standard template Normal.tmv will be used.

  If you omit the path or give only a relative path, TextMaker's default template path will be automatically prefixed. If you omit the file extension .tmv, it will be automatically added.

Return type:

Object (a Document object which represents the new document)

Example:

```
Sub Sample()
    Dim tm as Object
    Dim newDoc as Object

    Set tm = CreateObject("TextMaker.Application")
    tm.Visible = True
    Set newDoc = tm.Documents.Add
    MsgBox newDoc.Name
End Sub
```

You can use the Document object returned by the Add method like any other document. Alternatively, you can ignore the return value of the Add method and access the new document with the ActiveDocument method, for example.
Open (method)

Opens an existing document.

Syntax:

    Open FileName, [ReadOnly], [Password], [WritePassword], [FileFormat]

Parameters:

FileName (type: String): Path and file name of the document or document template to be opened.

ReadOnly (optional; type: Boolean): Indicates whether the document should be opened only for reading.

Password (optional; type: String): The read password for password-protected documents. If you omit this parameter for a password-protected document, the user will be asked to input the read password.

WritePassword (optional; type: String): The write password for password-protected documents. If you omit this parameter for a password-protected document, the user will be asked to input the write password.

FileFormat (optional; type: Long or TmSaveFormat): The file format of the document to be opened. The possible values are:

- tmFormatDocument = 0 ' TextMaker document
- tmFormatTemplate = 1 ' TextMaker document template
- tmFormatWinWord97 = 2 ' Microsoft Word 97 and 2000
- tmFormatRTF = 4 ' Rich Text Format
- tmFormatPocketWordPPC = 5 ' Pocket Word for Pocket PCs
- tmFormatPocketWordHPC = 6 ' Pocket Word for Handheld PCs (Windows CE)
- tmFormatPlainTextAnsi = 7 ' Text file with Windows character set
- tmFormatPlainTextDOS = 8 ' Text file with DOS character set
- tmFormatPlainTextUnicode = 9 ' Text file with Unicode character set
- tmFormatPlainTextUTF8 = 10 ' Text file with UTF8 character set
- tmFormatHTML = 12 ' HTML document
- tmFormatWinWord6 = 13 ' Microsoft Word 6.0
- tmFormatPlainTextUnix = 14 ' Text file for UNIX, Linux, FreeBSD
- tmFormatWinWordXP = 15 ' Microsoft Word XP and 2003
- tmFormatTM2006 = 16 ' TextMaker 2006 document
- tmFormatOpenXML = 17 ' Microsoft Word 2007 and later
- tmFormatTM2008 = 18 ' TextMaker 2008 document
- tmFormatOpenXMLTemplate = 22 ' Microsoft Word document template 2007 and later
- tmFormatWinWordXPTemplate = 23 ' Microsoft Word document template XP and 2003
- tmFormatTM2012 = 27 ' TextMaker 2012 document
- tmFormatTM2016 = 28 ' TextMaker 2016 document
- tmFormatTM2016Template = 29 ' TextMaker 2016 document template

If you omit this parameter, the value tmFormatDocument will be taken.

Tip: Independent of the value for the FileFormat parameter TextMaker always tries to determine the file format by itself and ignores evidently false inputs.

Return type:

    Object (a Document object which represents the opened document)
Examples:

```
' Open a document
tm.Documents.Open "c:\docs\test.tmd"

' Open a document only for reading
tm.Documents.Open "c:\docs\Test.tmd", True
```

**Close (method)**

Closes all currently opened documents.

Syntax:

```
Close [SaveChanges]
```

Parameters:

- **SaveChanges** (optional; type: `Long` or `SmoSaveOptions`) indicates whether the documents which were changed since they were last saved should be saved or not. If you omit this parameter, the user will be asked to indicate it (if necessary). The possible values are:

  - `smoDoNotSaveChanges` = 0 ' Don't ask, don't save
  - `smoPromptToSaveChanges` = 1 ' Ask the user
  - `smoSaveChanges` = 2 ' Save without asking

Return type:

```
none
```

Example:

```
' Close all opened documents without saving them
tm.Documents.Close smoDoNotSaveChanges
```

---

**Document (object)**

Access paths:

- `Application` ➔ `Documents` ➔ `Item`
- `Application` ➔ `ActiveDocument`
- `Application` ➔ `Windows` ➔ `Item` ➔ `Document`
- `Application` ➔ `ActiveWindow` ➔ `Document`

**Description**

A **Document** object represents one individual document opened in TextMaker.

For each document there is its own **Document** object. If you open or close documents, the respective **Document** objects will be created or deleted dynamically.
Access to the object

The individual `Document` objects can be accessed in the following ways:

- All currently open documents are administrated in the `Application.Documents` collection (type: `Documents`):

```vba
' Show the names of all opened documents
For i = 1 To tm.Application.Documents.Count
    MsgBox tm.Application.Documents.Item(i).Name
Next i
```

- The active document can be accessed through the `Application.ActiveDocument` object:

```vba
' Show the name of the current document
MsgBox tm.Application.ActiveDocument.Name
```

- `Document` is the `Parent` object for different objects which are linked with it, for example, `BuiltInDocumentProperties` or `Selection`:

```vba
' Show the name of the current document in an indirect way
```

- The objects `Window` and `Selection` include the object pointer to the document which belongs to them:

```vba
' Access the active document through the active document window
MsgBox tm.Application.ActiveWindow.Document.Name
```

Properties, objects, collections, and methods

Properties:
- `Name` R/O
- `FullName` R/O
- `Path` R/O
- `PageCount` R/O
- `Saved`
- `ReadOnly`
- `EnableCaretMovement`
- `MergeFileName`
- `MergeFileFormat`
- `MergeFileHeader`
- `MergeRecord`

Objects:
- `PageSetup` → `PageSetup`
- `Selection` → `Selection`
- `ActiveWindow` → `Window`
- `Application` → `Application`
- `Parent` → `Application`

Collections:
BuiltInDocumentProperties → DocumentProperties
Paragraphs → Paragraphs
Tables → Tables
FormFields → FormFields

Methods:
- Activate
- Close
- Save
- SaveAs
- Select
- MailMerge
- PrintOut
- MergePrintOut

**Name (property, R/O)**

Data type: **String**

Returns the name of the document (e.g., Smith.tmd).

**FullName (property, R/O)**

Data type: **String**

Returns the path and name of the document (e.g. c:\Letters\Smith.tmd).

**Path (property, R/O)**

Data type: **String**

Returns the path of the document (e.g. c:\Letters).

**PageCount (property, R/O)**

Data type: **Long**

Returns the number of pages in the document.

**Saved (property)**

Data type: **Boolean**

Gets or sets the **Saved** property of the document. It indicates whether a document was changed since it was last saved:

- If **Saved** is set to **True**, the document was not changed since it was last saved.
- If **Saved** is set to **False**, the document was changed since it was last saved. When closing the document, the user will be asked if it should be saved.
Note: As soon as the user changes something in a document, its `Saved` property will be set to `False` automatically.

**ReadOnly (property)**

Data type: `Boolean`

Gets or sets the `ReadOnly` property of the document.

If the property is `True`, the document is protected against user changes. Users will not be able to edit, delete, or add content.

If you set this property to `True`, the `EnableCaretMovement` property (see there) will be automatically set to `False`. Therefore, the cursor cannot be moved inside the document anymore. However, you can always set the `EnableCaretMovement` property to `True` if you want to make cursor movement possible.

**EnableCaretMovement (property)**

Data type: `Boolean`

Gets or sets the `EnableCaretMovement` property of the document. This property is sensible only in combination with the `ReadOnly` property (see there).

If the `EnableCaretMovement` property is `True`, the cursor can be moved freely inside a write-protected document. If it is set to `False`, cursor movement is not possible.

**MergeFileName (property)**

Data type: `String`

Gets or sets the name of the merge database to which the document is assigned.

**MergeFileFormat (property)**

Data type: `Long` (TmMergeType)

Gets or sets the file format of the merge database to which the document is assigned. The possible values are:

- `tmMergeCSV Ansi` = 3
- `tmMergeDBaseAnsi` = 5
- `tmMergeCSV Dos` = 64
- `tmMergeDBaseDos` = 66
- `tmMergeDBaseUnicode` = 69

**MergeFileHeader (property)**

Data type: `Boolean`

Gets or sets the option `Get field names from the first record` (as found in the dialog of TextMaker's Tools > Assign Database menu command).
This property is applicable only for the CSV files (tmMergeCSVAnsi, tmMergeCSVDos).

**MergeRecord (property)**

Data type: **Long**

Gets or sets the record number of the record shown in a merge document. Corresponds to the setting **Show merge record** in the dialog of the **File > Properties** menu command, **View** tab.

**PageSetup (pointer to object)**

Data type: **Object**

Returns the **PageSetup** object that you can use to access the page formatting of the document (paper format, margins, etc).

**Selection (pointer to object)**

Data type: **Object**

Returns the **Selection** object that you can use to access the currently selected text in the document. If nothing is selected, the object returns the current text cursor.

**ActiveWindow (pointer to object)**

Data type: **Object**

Returns the **Window** object that contains settings related to the document window of a document (for example, its height and width).

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Documents**.

**BuiltInDocumentProperties (pointer to collection)**

Data type: **Object**

Returns the **DocumentProperties** collection that you can use to access the document info (title, subject, author etc).
Paragraphs (pointer to collection)

Data type: **Object**

Returns the **Paragraphs** collection, a collection of all paragraphs in the document

Tables (pointer to collection)

Data type: **Object**

Returns the **Tables** collection, a collection of all tables in the document

FormFields (pointer to collection)

Data type: **Object**

Returns the **FormFields** collection, a collection of all form objects in the document

Activate (method)

Brings the document window to the front (if the **Visible** property is True) and sets the focus to the document window.

Syntax:

```
Activate
```

Parameters:

- none

Return type:

- none

Example:

```
' Bring the first document of the Documents collection to the front
tm/Documents(1).Activate
```

Close (method)

Closes the document.

Syntax:

```
Close [SaveChanges]
```

Parameters:
**SaveChanges** (optional; type: **Long** or **SmoSaveOptions**) indicates whether the document should be saved or not. If you omit this parameter, the user will be asked – but only if the document was changed since it was last saved. The possible values are:

- `smoDoNotSaveChanges = 0` ' Don't ask, don't save
- `smoPromptToSaveChanges = 1` ' Ask the user
- `smoSaveChanges = 2` ' Save without asking

**Return type:**

- none

**Example:**

```vbnet
' Close the active document without saving
tm.ActiveDocument.Close smoDoNotSaveChanges
```

**Save (method)**

Saves the document.

**Syntax:**

```vbnet
Save
```

**Parameters:**

- none

**Return type:**

- none

**Example:**

```vbnet
' Save the active document
tm.ActiveDocument.Save
```

**SaveAs (method)**

Saves the document under a different name and/or path.

**Syntax:**

```vbnet
SaveAs FileName, [FileFormat]
```

**Parameters:**

- **FileName** (type: **String**): Path and file name under which the document should be saved.

- **FileFormat** (optional; type: **Long** or **TmSaveFormat**) determines the file format. This parameter can take the following values (left: the symbolic constants, right: the corresponding numeric values):

  - `tmFormatDocument = 0` ' TextMaker document
  - `tmFormatTemplate = 1` ' TextMaker document template
  - `tmFormatWinWord97 = 2` ' Microsoft Word 97 and 2000
If you omit this parameter, \texttt{tmFormatDocument} will be taken.

Return type: none

Example:

' Save the current document under the given name in RTF format
\texttt{tm.ActiveDocument.SaveAs "c:\docs\test.rtf", tmFormatRTF}

\texttt{Select (method)}

Selects the entire document.

Syntax:

\texttt{Select}

Parameters:

none

Return type:

none

Example:

' Select the current document
\texttt{tm.ActiveDocument.Select}

You can use the \texttt{Selection} object to change, for example, the text formatting or to copy the selected text into the clipboard
PrintOut (method)

Prints the document on the currently chosen printer.

Syntax:

```
PrintOut [From], [To]
```

Parameters:

- **From** (optional; type: **Long**) indicates from which page to start. If omitted, printing starts from the first page.
- **To** (optional; type: **Long**) indicates at which page to stop. If omitted, printing stops at the last page.

Return type:

- **Boolean** (True if printing was successful)

Example:

```pascal
' Print out the pages 2-5 from the current document
tm.ActiveDocument.PrintOut 2, 5
```

MailMerge (method)

Transfers database fields from the assigned database into the document, using the record number specified in the dialog of the **File > Properties** menu command.

Syntax:

```
MailMerge Options, [ReplaceFields]
```

Parameters:

- **Options** (type: **Long** or **TmMergeOption**) indicates what kind of data will be merged. The possible values are:
  - `tmSingleFax` = 1
  - `tmSingleAddress` = 2
  - `tmMultipleFax` = 3
  - `tmMultipleAddress` = 4

- **ReplaceFields** (optional; type: **Boolean**) determines whether the database fields in the document should be physically replaced by the corresponding field contents. The default value is **False**.

Return type:

- **none**

Example:

```pascal
' Insert record #5 from the assigned database into the document
tm.ActiveDocument.MergeRecord = 5
tm.ActiveDocument.MailMerge tmSingleAddress, True
```
**MergePrintOut (method)**

Prints the document on the currently chosen printer as a merge document.

Syntax:

```
MergePrintOut [From], [To]
```

Parameters:

- **From** (optional; type: `Long`) indicates the number of the first record to be printed. If omitted, printing starts with the first record.
- **To** (optional; type: `Long`) indicates the number of the last record to be printed. If omitted, printing stops at the last record.

Return type:

**Boolean** (True if printing was successful)

Example:

```
' Print out the current merge document, records 99 through 105
tm.ActiveDocument.MergePrintOut 99, 105
```

**DocumentProperties (collection)**

Access paths:

- `Application` ➔ `Documents` ➔ `Item` ➔ `DocumentProperties`
- `Application` ➔ `ActiveDocument` ➔ `DocumentProperties`

1. **Description**

The **DocumentProperties** collection contains all document properties of a document, including, for example, title, author, number of words, etc.

The individual elements of this collection are of the type **DocumentProperty**

2. **Access to the collection**

Each opened document has exactly one **DocumentProperties** collection. It is accessed through the `Document.BuiltInDocumentProperties` object:

```
' Set the title of the active document to "My Story"
tm.ActiveDocument.BuiltInDocumentProperties(smoPropertyTitle) = "My Story"

' Show the number of words of the active document
MsgBox tm.ActiveDocument.BuiltInDocumentProperties("Number of words")
```
3 Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → DocumentProperty (default object)
- **Application** → Application
- **Parent** → Document

**Count (property, R/O)**

Data type: Long

Returns the number of DocumentProperty objects in the collection, i.e. the number of the document properties of a document. The value of this property is fixed, since all TextMaker documents have the same number of the document properties.

**Item (pointer to object)**

Data type: Object

Returns an individual DocumentProperty object, i.e. an individual document property.

Which DocumentProperty object you get depends on the value that you pass to Item. You can specify either the numeric index or the name of the desired document property.

The following table contains the possible numeric values and the names associated to them:

<table>
<thead>
<tr>
<th>smoPropertyTitle</th>
<th>1</th>
<th>&quot;Title&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoPropertySubject</td>
<td>2</td>
<td>&quot;Subject&quot;</td>
</tr>
<tr>
<td>smoPropertyAuthor</td>
<td>3</td>
<td>&quot;Author&quot;</td>
</tr>
<tr>
<td>smoPropertyKeywords</td>
<td>4</td>
<td>&quot;Keywords&quot;</td>
</tr>
<tr>
<td>smoPropertyComments</td>
<td>5</td>
<td>&quot;Comments&quot;</td>
</tr>
<tr>
<td>smoPropertyAppName</td>
<td>6</td>
<td>&quot;Application name&quot;</td>
</tr>
<tr>
<td>smoPropertyTimeLastPrinted</td>
<td>7</td>
<td>&quot;Last print date&quot;</td>
</tr>
<tr>
<td>smoPropertyTimeCreated</td>
<td>8</td>
<td>&quot;Creation date&quot;</td>
</tr>
<tr>
<td>smoPropertyTimeLastSaved</td>
<td>9</td>
<td>&quot;Last save time&quot;</td>
</tr>
<tr>
<td>smoPropertyKeystrokes</td>
<td>10</td>
<td>&quot;Number of keystrokes&quot;</td>
</tr>
<tr>
<td>smoPropertyCharacters</td>
<td>11</td>
<td>&quot;Number of characters&quot;</td>
</tr>
<tr>
<td>smoPropertyWords</td>
<td>12</td>
<td>&quot;Number of words&quot;</td>
</tr>
<tr>
<td>smoPropertySentences</td>
<td>13</td>
<td>&quot;Number of sentences&quot;</td>
</tr>
<tr>
<td>smoPropertyParas</td>
<td>14</td>
<td>&quot;Number of paragraphs&quot;</td>
</tr>
<tr>
<td>smoPropertyChapters</td>
<td>15</td>
<td>&quot;Number of chapters&quot;</td>
</tr>
<tr>
<td>smoPropertySections</td>
<td>16</td>
<td>&quot;Number of sections&quot;</td>
</tr>
<tr>
<td>smoPropertyLines</td>
<td>17</td>
<td>&quot;Number of lines&quot;</td>
</tr>
<tr>
<td>smoPropertyPages</td>
<td>18</td>
<td>&quot;Number of pages&quot;</td>
</tr>
<tr>
<td>smoPropertyCells</td>
<td>19</td>
<td>n/a (not available in TextMaker)</td>
</tr>
<tr>
<td>smoPropertyTextCells</td>
<td>20</td>
<td>n/a (not available in TextMaker)</td>
</tr>
<tr>
<td>smoPropertyNumericCells</td>
<td>21</td>
<td>n/a (not available in TextMaker)</td>
</tr>
<tr>
<td>smoPropertyFormulaCells</td>
<td>22</td>
<td>n/a (not available in TextMaker)</td>
</tr>
<tr>
<td>smoPropertyNotes</td>
<td>23</td>
<td>n/a (not available in TextMaker)</td>
</tr>
<tr>
<td>smoPropertySheets</td>
<td>24</td>
<td>n/a (not available in TextMaker)</td>
</tr>
</tbody>
</table>
This list specifies all document properties that exist in SoftMaker Office, including those that are not available in TextMaker. The latter are marked as "not available in TextMaker".

### Application (pointer to object)

Data type: **Object**

Returns the **Application** object

### Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. an object of the type **Document**

---

### DocumentProperty (object)

Access paths:
- **Application** ➔ **Documents** ➔ **Item** ➔ **BuiltInDocumentProperties** ➔ **Item**
- **Application** ➔ **ActiveDocument** ➔ **BuiltInDocumentProperties** ➔ **Item**

#### 1. Description

A **DocumentProperty** object represents one individual document property of a document, for example, the title, the author, or the number of words in a document.

#### 2. Access to the object

The individual **DocumentProperty** objects can be accessed solely through enumerating the elements of the collection **DocumentProperties**.

For each opened document there is exactly one instance of the **DocumentProperties** collection, namely **BuiltInDocumentProperties** in the **Document** object:

```basic
' Set the title of the active document to "My Story"
RestaurantProgrammatics.ActiveDocument.BuiltInDocumentProperties.Item(smoPropertyTitle) = "My Story"
```
## Properties, objects, collections, and methods

### Properties:
- **Name** R/O
- **Value** (default property)
- **Valid**
- **Type**

### Objects:
- **Application** → **Application**
- **Parent** → **BuiltInDocumentProperties**

### Name (property, R/O)

**Data type**: String

Returns the name of the document property. Examples:

```vba
' Show the name of the document property smoPropertyTitle, i.e. "Title"
MsgBox tm.ActiveDocument.BuiltInDocumentProperties.Item(smoPropertyTitle).Name

' Show the name of the document property "Author", i.e. "Author"
MsgBox tm.ActiveDocument.BuiltInDocumentProperties.Item("Author").Name
```

### Value (property)

**Data type**: String

Gets or sets the contents of a document property.

The following example assigns a value to the document property "Title" defined by the numeric constant smoPropertyTitle and then reads its value again using the string constant "Title":

```vba
Sub Example()
    Dim tm as Object
    Set tm = CreateObject("TextMaker.Application")
    tm.Documents.Add ' Add a new empty document

    ' Set the new title (using the numeric constant smoPropertyTitle)

    ' Get again the same property (using the string constant this time)
    MsgBox tm.ActiveDocument.BuiltInDocumentProperties.Item("Title").Value
End Sub
```

Since **Item** is the default object of the **DocumentProperties** and **Value** is the default property of **DocumentProperty**, the example can be written clearer in the following way:

```vba
Sub Example()
    Dim tm as Object
    Set tm = CreateObject("TextMaker.Application")
    tm.Documents.Add ' Add a new empty document


    MsgBox tm.ActiveDocument.BuiltInDocumentProperties.Item("Title").Value
End Sub
```
```vbscript
Set tm = CreateObject("TextMaker.Application")
tm.Documents.Add ' Add a new empty document

' Set the new title (using the numeric constant smoPropertyTitle)
tm.ActiveDocument.BuiltinDocumentProperties(smoPropertyTitle) = "New Title"

' Get again this property (using the string constant this time)
MsgBox tm.ActiveDocument.BuiltinDocumentProperties("Title")
End Sub

Valid (property, R/O)

Data type:  **Boolean**

Returns **True** if the document property is available in TextMaker.

Background: The list of document properties also contains items that are available only in PlanMaker (for example, smoPropertySheets, "Number of sheets"). When working with TextMaker, you can retrieve only those document properties that are known by this program – otherwise an empty value will be returned (VT_EMPTY).

The **Valid** property allows you to test whether the respective document property is available in TextMaker before using it. Example:

```vbscript
Sub Test
    Dim tm as Object
    Dim i as Integer

    Set tm = CreateObject("TextMaker.Application")
    tm.Visible = True
    tm.Documents.Add ' Add an empty document

    With tm.ActiveDocument
        For i = 1 to .BuiltinDocumentProperties.Count
            If .BuiltinDocumentProperties(i).Valid then
                Print i, .BuiltinDocumentProperties(i).Name, ",=", _
                .BuiltinDocumentProperties(i).Value
            Else
                Print i, "Not available in TextMaker"
            End If
        Next i
    End With
End Sub
```

Type (property, R/O)

Data type: **Long** (SmoDocProperties)

Returns the data type of the document property. In order to evaluate a document property correctly, you must know its type. For example, **Title** (smoPropertyTitle) is a string value, **Creation Date** (smoPropertyTimeCreated) is a date. The possible values are:

```
smoPropertyTypeBoolean  = 0 ' Boolean
```
smoPropertyTypeDate = 1 ' Date
smoPropertyTypeFloat = 2 ' Floating-point value
smoPropertyTypeNumber = 3 ' Integer number
smoPropertyTypeString = 4 ' String

Application (pointer to object)
Data type: Object
Returns the Application object

Parent (pointer to object)
Data type: Object
Returns the parent object, i.e. BuiltInDocumentProperties

PageSetup (object)
Access paths:
- Application ➔ Documents ➔ Item ➔ PageSetup
- Application ➔ ActiveDocument ➔ PageSetup

1 Description
The PageSetup object contains the page settings of the Document object to which it belongs. This object can be used to return or change the paper format, the page size, and the margins, as well as the print orientation of a document.

2 Access to the object
Each opened document has exactly one instance of the PageSetup object. It is accessed through the Document.PageSetup object:

' Set the left margin of the page to 2 cm
tm.ActiveDocument.PageSetup.LeftMargin = tm.CentimetersToPoints(2)

Hint: TextMaker allows you to divide a document into multiple chapters and then define different page settings for each of them. In this case, the PageSetup object always refers to the page settings of the chapter where the text cursor is placed at the moment.

3 Properties, objects, collections, and methods
Properties:
- LeftMargin
- RightMargin
Objects:
- Application ➔ Application
- Parent ➔ Document

**LeftMargin (property)**
Data type: Single
Gets or sets the left page margin of the document in points (1 point corresponds to 1/72 inches).

**RightMargin (property)**
Data type: Single
Gets or sets the right page margin of the document in points (1 point corresponds to 1/72 inches).

**TopMargin (property)**
Data type: Single
Gets or sets the top page margin of the document in points (1 point corresponds to 1/72 inches).

**BottomMargin (property)**
Data type: Single
Gets or sets the bottom page margin of the document in points (1 point corresponds to 1/72 inches).

**PageHeight (property)**
Data type: Single
Gets or sets the page height of the document in points (1 point corresponds to 1/72 inches).
If you set this property, the PaperSize property (see below) will be automatically changed to a corresponding paper format.

**PageWidth (property)**
Data type: Single
Gets or sets the page width of the document in points (1 point corresponds to 1/72 inches).
If you set this property, the **PaperSize** property (see below) will be automatically changed to a corresponding paper format.

---

### Orientation (property)

Data type: **Long** (SmoOrientation)

Gets or sets the page orientation. The following constants are allowed:

<table>
<thead>
<tr>
<th>Constant</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoOrientLandscape</td>
<td>0</td>
<td>Landscape format</td>
</tr>
<tr>
<td>smoOrientPortrait</td>
<td>1</td>
<td>Orient portrait</td>
</tr>
</tbody>
</table>

---

### PaperSize (property)

Data type: **Long** (SmoPaperSize)

Gets or sets the page size of the document. The following constants are allowed:

<table>
<thead>
<tr>
<th>Constant</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoPaperCustom</td>
<td>-1</td>
<td></td>
</tr>
<tr>
<td>smoPaperLetter</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>smoPaperLetterSmall</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>smoPaperTabloid</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>smoPaperLedger</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>smoPaperLegal</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>smoPaperStatement</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>smoPaperExecutive</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>smoPaperA3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>smoPaperA4</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>smoPaperA4Small</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>smoPaperA5</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>smoPaperB4</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>smoPaperB5</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>smoPaperFolio</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>smoPaperQuarto</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>smoPaper10x14</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>smoPaper11x17</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>smoPaperNote</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelope9</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelope10</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelope11</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelope12</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelope14</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>smoPaperCSheet</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>smoPaperDSheet</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>smoPaperESheet</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeDL</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeC5</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeC3</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeC4</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeC6</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeC65</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeB4</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeB5</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeB6</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>smoPaperEnvelopeItaly</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>
smoPaperEnvelopeMonarch = 37
smoPaperEnvelopePersonal = 38
smoPaperFanfoldUS = 39
smoPaperFanfoldStdGerman = 40
smoPaperFanfoldLegalGerman = 41

### Application (pointer to object)

Data type: **Object**

Returns the **Application** object

### Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. an object of the type **Document**

### Selection (object)

Access paths:
- Application → Documents → Item → Selection
- Application → ActiveDocument → Selection

#### Description

**Selection** identifies the current selection in a document.

If text is selected, the **Selection** object stands for the contents of this selection. If nothing is selected, the **Selection** object stands for the current cursor position. If you add text (for example, with the method **Selection.TypeText**), the contents of the selected area will be replaced with this text. If nothing was selected, the text will be pasted at the current cursor position.

You can use the **Font** object accessible from the **Selection** object to make changes in the text formatting.

Example: `tmActiveDocumentSelectionFontSize = 24` changes the font size for the text selected in the active document to 24 points

#### Access to the object

Each opened document has exactly one instance of the **Selection** object. It can be accessed through the **Document.Selection** object:

```plaintext
' Copy the selection from the active document to the clipboard
tm.ActiveDocument.Selection.Copy
```
Properties, objects, collections, and methods

Objects:
- Document → Document
- Font → Font
- Application → Application
- Parent → Document

Methods:
- Copy
- Cut
- Paste
- Delete
- TypeText
- TypeParagraph
- TypeBackspace
- InsertBreak
- GoTo
- ConvertToTable
- SetRange
- InsertPicture

Document (pointer to object)
Data type: Object

Returns the Document object which is assigned to the current selection.

Font (pointer to object)
Data type: Object

Returns the Font object which is assigned to the current selection. It contains the properties which get and set the chosen character formatting inside the selection area.

Application (pointer to object)
Data type: Object

Returns the Application object.

Parent (pointer to object)
Data type: Object

Returns the parent object, i.e., an object of the type Document.
**Copy (method)**

Copies the contents of the selection to the clipboard.

Syntax:

```makefile
Copy
```

Parameters:

none

Return type:

none

Example:

```plaintext
' Copy the active selection to the clipboard
tm.ActiveDocument.Selection.Copy
```

**Cut (method)**

Cuts out the contents of the selection and places them in the clipboard.

Syntax:

```makefile
Cut
```

Parameters:

none

Return type:

none

Example:

```plaintext
' Cut the active selection and place it in the clipboard
tm.ActiveDocument.Selection.Cut
```

**Paste (method)**

Pastes the contents of the clipboard to the selection.

Syntax:

```makefile
Paste
```

Parameters:

none

Return type:
Delete (method)

Deletes the contents of the selection.

Syntax:
```
Delete
```

Parameters:
- none

Return type:
- none

Example:
```'
' Delete the active selection

Delete
```

TypeText (method)

Insert a string into the selection.

Syntax:
```
TypeText Text
```

Parameters:
- Text (type: String) is the string to be inserted.

Return type:
- none

Example:
```'
' Insert text at the current cursor position in the active document

TypeText "Programming with BasicMaker"
```

TypeParagraph (method)

Insert a carriage return sign (CR) into the selection.

Syntax:
```
TypeParagraph
```
Parameters:
none
Return type:
none
Example:

' Insert a CR sign at the current cursor position in the active document
tm.ActiveDocument.Selection.TypeParagraph

**TypeBackspace (method)**

Insert a backspace character.

Syntax:

    TypeBackspace

Parameters:
none
Return type:
none
Example:

' Executes backspace at the current cursor position in the active document
tm.ActiveDocument.Selection.TypeBackspace

**InsertBreak (method)**

Insert a manual break.

Syntax:

    InsertBreak [Type]

Parameters:

    Type (optional; type: Long or TmBreakType) defines the type of the break. The possible values are:

    tmLineBreak = 0 ' Line break
    tmColumnBreak = 1 ' Column break
    tmSectionBreak = 2 ' Section break
    tmPageBreak = 3 ' Page break
    tmChapterBreak = 4 ' Chapter break

    If you omit the Type parameter, the value tmPageBreak will be taken.

Return type:
none
Example:

```plaintext
' Insert a page break at the current cursor position
tm.ActiveDocument.Selection.InsertBreak tmPageBreak
```

### GoTo (method)

Moves the text cursor to the specified position.

**Syntax:**

```plaintext
GoTo [What], [Which], [Count], [NumRow], [NumCol]
```

**Parameters:**

- **What** (optional; type: **Long** or **TmGoToItem**) indicates whether the destination is a table or a paragraph:
  ```plaintext
tmGoToParagraph = 1 ' Paragraph
tmGoToTable = 2 ' Table
```
  If you omit the **What** parameter, the value **tmGoToParagraph** will be taken.

- **Which** (optional; type: **Long** or **TmGoToDirection**) indicates whether the movement should be absolute or relative to the current position:
  ```plaintext
tmGoToAbsolute = 1 ' absolute
tmGoToRelative = 2 ' relative
```
  If you omit the **Which** parameter, the value **tmGoToAbsolute** will be taken.

- **Count** (optional; type: **Long**): Indicates the number of the item (i.e. the index of the table or the index of the paragraph in the document) that should be accessed.
  If you omit the **Count** parameter, the value 1 will be taken.

- **NumRow** (optional; type: **Long**): If **What** is set to **tmGoToTable**, this parameter optionally allows you to specify into which line of the table the cursor should be moved.

- **NumCol** (optional; type: **Long**): If **What** is set to **tmGoToTable**, this parameter optionally allows you to specify into which row of the table the cursor should be moved.

**Return type:**

- none

**Examples:**

```plaintext
' Move the cursor to the fourth paragraph
tm.ActiveDocument.Selection.GoTo tmGoToParagraph, tmGoToAbsolute, 4

' Move the cursor to the previous paragraph
tm.ActiveDocument.Selection.GoTo tmGoToParagraph, tmGoToRelative, -1

' Move the cursor to the first line of the first table
tm.ActiveDocument.Selection.GoTo tmGoToTable, tmGoToAbsolute, 1, 1, 1
```
### ConvertToTable (method)

Converts the selected text to a table.

Syntax:

```
ConvertToTable NumRows, NumCols, Separator, RemoveQuotationMarks, RemoveSpaces
```

Parameters:

**NumRows** (optional; type: Long) indicates how many lines the table should have. If omitted, TextMaker will calculate the number of lines by itself.

**NumCols** (optional; type: Long) indicates how many columns the table should have. If omitted, TextMaker will calculate the number of columns by itself.

**Separator** (optional; type: either String or Long or TmTableFieldSeparator) specifies one or more characters that TextMaker should use to recognize the columns. You can indicate either a string or one of the following constants:

- `tmSeparateByCommas` = 0 ' Columns separated by commas
- `tmSeparateByParagraphs` = 1 ' Columns separated by paragraphs
- `tmSeparateByTabs` = 2 ' Columns separated by tabs
- `tmSeparateBySemicolons` = 3 ' Columns separated by semicolons

If you omit this parameter, the value `tmSeparateByTabs` will be taken.

**RemoveQuotationMarks** (optional; type: Boolean): Set this parameter to True, if TextMaker should delete all leading and trailing quotation marks from the entries. If you omit this parameter, the value False will be taken.

**RemoveSpaces** (optional; type: Boolean): Set this parameter to True, if TextMaker should delete all leading and trailing space characters from the entries. If you omit this parameter, the value True will be taken.

Return type:

Object (a Table object which represents the new table)

Example:

```
' Convert the current selection to a table. Column separator is comma.
tm.ActiveDocument.Selection.ConvertToTable Separator := tmSeparateByCommas

' Here, slashes are used as the separator
tm.ActiveDocument.Selection.ConvertToTable Separator := "/"
```

### SetRange (method)

Sets the start and end point of the selection, by specifying their character positions.

Syntax:

```
SetRange Start, End
```
Parameters:

- **Start** (type: **Long**) sets the start position of the new selection, specified as the number of characters from the document beginning.

- **End** (type: **Long**) sets the end position of the new selection, specified as the number of characters from the document beginning.

Return type:

none

Examples:

```vbnet
' Select the area from character 1 to character 4
tm.ActiveDocument.Selection.SetRange 1, 4
```

**Hint:** You can also use this method to select whole paragraphs. For this purpose, use the **Paragraph.Range.Start** and **Paragraph.Range.End** values to indicate the start and end position of the paragraph and pass it to the **SetRange** method.

---

**InsertPicture (method)**

Insert a picture from a file into the selection.

Syntax:

```vbnet
InsertPicture PictureName
```

Parameters:

- **PictureName** (type: **String**) is the path and file name of the picture to be inserted.

Return type:

none

Examples:

```vbnet
' Insert a picture at the current position
tm.ActiveDocument.Selection.InsertPicture "c:\Pictures\Fish.bmp"
```

---

**Font (object)**

Access paths:

- **Application** → **Documents** → **Item** → **Selection** → **Font**
- **Application** → **ActiveDocument** → **Selection** → **Font**
1 **Description**

The **Font** object describes the character formatting of a text fragment. It is a child object of **Selection** and allows you to get and set all character attributes of the current selection.

2 **Access to the object**

Each opened document has exactly one instance of the **Font** object. It is accessed through the 

```vbnet
Document.Selection.Font
```

![Code example]

' Assign the Arial font to the current selection

```vbnet
tm.ActiveDocument.Selection.Font.Name = "Arial"
```

3 **Properties, objects, collections, and methods**

**Properties:**

- **Name** (default property)
- Size
- Bold
- Italic
- Underline
- StrikeThrough
- Superscript
- Subscript
- AllCaps
- SmallCaps
- PreferredSmallCaps
- Blink
- Color
- ColorIndex
- BColor
- BColorIndex
- Spacing
- Pitch

**Objects:**

- **Application** → Application
- **Parent** → Selection

**Name (property)**

Data type: String

Gets or sets the font name (as a string).

If multiple fonts are used inside the selection, an empty string will be returned.
BasicMaker and TextMaker

**Size (property)**

Data type: **Single**

Gets or sets the font size in points (pt).

If multiple font sizes are used inside the selection, the constant **smoUndefined** (9.999.999) will be returned.

Example:

```
' Set the size of the selected text to 10.3 pt
```

**Bold (property)**

Data type: **Long**

Gets or sets the character formatting "Bold":

- **True**: Bold on
- **False**: Bold off
- **smoToggle** (only when setting): The current state is reversed.
- **smoUndefined** (only when reading): The selection is partly bold and partly not.

**Italic (property)**

Data type: **Long**

Gets or sets the character formatting "Italic":

- **True**: Italic on
- **False**: Italic off
- **smoToggle** (only when setting): The current state is reversed.
- **smoUndefined** (only when reading): The selection is partly italic and partly not.

**Underline (property)**

Data type: **Long** (TmUnderline)

Gets or sets the character formatting "Underline". The following values are allowed:

- **tmUnderlineNone** = 0 ' off
- **tmUnderlineSingle** = 1 ' single underline
- **tmUnderlineDouble** = 2 ' double underline
- **tmUnderlineWords** = 3 ' word underline
- **tmUnderlineWordsDouble** = 4 ' double word underline
If you are reading this property and the selection is partly underlined and partly not, the constant `smoUndefined` will be returned.

**StrikeThrough (property)**

Data type: **Long**

Gets or sets the character formatting "StrikeThrough":

- **True:** StrikeThrough on
- **False:** StrikeThrough off
- `smoToggle` (only when setting): The current state is reversed.
- `smoUndefined` (only when reading): The selection is partly struck through and partly not.

**Superscript (property)**

Data type: **Long**

Gets or sets the character formatting "Superscript":

- **True:** Superscript on
- **False:** Superscript off
- `smoToggle` (only when setting): The current state is reversed.
- `smoUndefined` (only when reading): The selection is partly superscripted and partly not.

**Subscript (property)**

Data type: **Long**

Gets or sets the character formatting "Subscript":

- **True:** Subscript on
- **False:** Subscript off
- `smoToggle` (only when setting): The current state is reversed.
- `smoUndefined` (only when reading): The selection is partly subscripted and partly not.

**AllCaps (property)**

Data type: **Long**

Gets or sets the character formatting "All caps" (whole text in uppercase letters):

- **True:** AllCaps on
- **False:** AllCaps off
 smoToggle (only when setting): The current state is reversed.

 smoUndefined (only when reading): The option is partly set and partly not in the selection.

### SmallCaps (property)

Data type: **Long**

Gets or sets the character formatting "Small caps":

- **True**: SmallCaps on
- **False**: SmallCaps off

 smoToggle (only when setting): The current state is reversed.

 smoUndefined (only when reading): The selection is partly in small capitals and partly not.

### PreferredSmallCaps (property)

Data type: **Long**

Gets or sets the character formatting "Small caps", but as opposed to the SmallCaps property, lets you choose the scale factor. The value 0 turns small caps off, all other values represent the percental scale factor of the small capitals.

Example:

```plaintext
' Format the selected text in small capitals with 75% of size

' Deactivate the SmallCaps formatting
tm.ActiveDocument.Selection.Font.PreferredSmallCaps = 0
```

### Blink (property)

Data type: **Long**

Gets or sets the character formatting "Blink" (obsolete):

- **True**: Blink on
- **False**: Blink off

 smoToggle (only when setting): The current state is reversed.

 smoUndefined (only when reading): The selection is partly blinking and partly not.

### Color (property)

Data type: **Long** (SmoColor)

Gets or sets the foreground color of text as a "BGR" value (Blue-Green-Red triplet). You can either specify an arbitrary value or use one of the predefined BGR color constants
If the selection is formatted in different colors, the constant `smoUndefined` will be returned when you read this property.

**ColorIndex (property)**

Data type: **Long** (SmoColorIndex)

Gets or sets the foreground color of text using an index color. "Index colors" consist of the 16 standard colors of TextMaker, numbered from 0 for black to 15 for light gray. Only values listed in the [Color Indices](#) table are allowed. If the selection is formatted in different colors or in a color that is not an index color, the constant `smoUndefined` will be returned when you read this property.

Note: It is recommended to use the `Color` property (see above) instead of this one, since it is not limited to the 16 standard colors but enables you to access the entire BGR color palette.

**BColor (property)**

Data type: **Long** (SmoColor)

Gets or sets the background color of text as a "BGR" value (Blue-Green-Red triplet). You can either specify an arbitrary value or use one of the predefined BGR color constants.

If the selection is formatted in different colors, the constant `smoUndefined` will be returned when you read this property.

**BColorIndex (property)**

Data type: **Long** (SmoColorIndex)

Gets or sets the background color of text using an index color. "Index colors" consist of the 16 standard colors of TextMaker, numbered from -1 for transparent to 15 for light gray. Only values listed in the [Color Indices](#) table are allowed. If the selection is formatted in different colors or in a color that is not an index color, the constant `smoUndefined` will be returned when you read this property.

Note: It is recommended to use the `BColor` property (see above) instead of this one, since it is not limited to the standard colors but enables you to access the entire BGR color palette.

**Spacing (property)**

Data type: **Long**

Gets or sets the character spacing. The standard value is 100 (normal character spacing of 100%).

If you are reading this property and the selection is formatted in different character spacings, the constant `smoUndefined` will be returned.
**Pitch (property)**

Data type: **Long**

Gets or sets the character pitch. The standard value is 100 (normal character pitch of 100%).

If you are reading this property and the selection is formatted in different character pitches, the constant **smoUndefined** will be returned.

Note that some printers ignore changes to the character pitch for their *internal* fonts.

---

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

---

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **Document**

---

**Paragraphs (collection)**

Access paths:
- **Application** → **Documents** → **Item** → **Paragraphs**
- **Application** → **ActiveDocument** → **Paragraphs**

---

**Description**

**Paragraphs** is a collection of all paragraphs in a document. The individual elements of this collection are of the type **Paragraph**

---

**Access to the collection**

Each open document has exactly one instance of the **Paragraphs** collection. It is accessed through the **Document.Paragraphs** object:

```
' Show the number of paragraphs in the current document
MsgBox tm.ActiveDocument.Paragraphs.Count
```
3 Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → **Paragraph** (default object)
- **Application** → **Application**
- **Parent** → **Document**

**Count (property, R/O)**

Data type: **Long**

Returns the number of **Paragraph** objects in the document – in other words: the number of paragraphs in the document.

**Item (pointer to object)**

Data type: **Object**

Returns an individual **Paragraph** object, i.e., an individual paragraph.

*Which Paragraph object you get depends on the numeric value that you pass to Item: 1 for the first paragraph in the document, 2 for the second, etc.*

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e., an object of the type **Document**

**Paragraph (object)**

Access paths:
- **Application** → **Documents** → **Item** → **Paragraphs** → **Item**
- **Application** → **ActiveDocument** → **Paragraphs** → **Item**
1 Description

A **Paragraph** object represents one individual paragraph of the document and allows you to change its formatting.

For each paragraph there is its own **Paragraph** object. If you add paragraphs to a document or delete them, the respective **Paragraph** objects will be created or deleted dynamically.

2 Access to the object

The individual **Paragraph** objects can be accessed solely through enumerating the elements of the **Paragraphs** collection. Each document has exactly one instance of this collection.

An example:

```vba
' Set alignment to "justified" for the first paragraph

' The same using an auxiliary object
Dim paragr as Object
Set paragr = tm.ActiveDocument.Paragraphs.Item(1)
paragr.Alignment = tmAlignParagraphJustify
Set paragr = Nothing ' Auxiliary object deleted again
```

3 Properties, objects, collections, and methods

Properties:
- BorderBounds
- FirstLineIndent
- LeftIndent
- RightIndent
- LineSpacingRule
- LineSpacing
- PreferredLineSpacing
- SpaceBefore
- SpaceAfter
- Alignment
- Hyphenation
- OutlineLevel
- PageBreakBefore
- ColumnBreakBefore
- KeepWithNext
- KeepTogether
- WidowControl
- BorderClearance

Objects:
- Shading → **Shading**
- DropCap → **DropCap**
- Range → **Range**
Collections:
- Borders

<table>
<thead>
<tr>
<th>Property</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BorderBounds (property)</td>
<td>Long (TmBorderBounds)</td>
<td>Gets or sets the spacing between the paragraph borders and the paragraph itself. The possible values are:</td>
</tr>
<tr>
<td>tmBoundsPage</td>
<td>= 0  ' Borders extend to the page margins</td>
<td></td>
</tr>
<tr>
<td>tmBoundsIndents</td>
<td>= 1  ' Borders extend to the paragraph margins</td>
<td></td>
</tr>
<tr>
<td>tmBoundsText</td>
<td>= 2  ' Borders extend to the paragraph text</td>
<td></td>
</tr>
<tr>
<td>FirstLineIndent (property)</td>
<td>Single</td>
<td>Gets or sets the first line indent of the paragraph in points (1 point corresponds to 1/72 inches).</td>
</tr>
<tr>
<td>LeftIndent (property)</td>
<td>Single</td>
<td>Gets or sets the left indent of the paragraph in points (1 point corresponds to 1/72 inches).</td>
</tr>
<tr>
<td>RightIndent (property)</td>
<td>Single</td>
<td>Gets or sets the right indent of the paragraph in points (1 point corresponds to 1/72 inches).</td>
</tr>
<tr>
<td>LineSpacingRule (property)</td>
<td>Long (TmLineSpacing)</td>
<td>Gets or sets the way in which the line spacing of the paragraph is performed. The possible values are:</td>
</tr>
<tr>
<td>tmLineSpaceAuto</td>
<td>= 0  ' Automatically (in percent)</td>
<td></td>
</tr>
<tr>
<td>tmLineSpaceExactly</td>
<td>= 1  ' Exactly (in points)</td>
<td></td>
</tr>
<tr>
<td>tmLineSpaceAtLeast</td>
<td>= 2  ' At least (in points)</td>
<td></td>
</tr>
<tr>
<td>LineSpacing (property)</td>
<td>Single</td>
<td>Gets or sets the line spacing of the paragraph.</td>
</tr>
</tbody>
</table>
Unlike the property **PreferredLineSpacing** (see below), the line spacing mode (see **LineSpacingRule**) is ignored here – the line spacing will be always specified in points and normalized to a standard font size of 12 points.

In other words: No matter if the line spacing is set to "Automatically 100%", to "Exactly 12 pt" or to "At least 12 points", this property will always return the result 12.

**PreferredLineSpacing (property)**

Data type: **Single**

Gets or sets the line spacing of the paragraph.

This property returns and expects values dependent on the chosen line spacing mode (see **LineSpacingRule**):

- **tmLineSpaceAuto**: The values are expressed in percent. For example, 100 stands for 100% line spacing.
- **tmLineSpaceExactly**: The values are absolute values in points.
- **tmLineSpaceAtLeast**: The values are absolute values in points.

Example:

' Set the line spacing to "Automatically 150%"
```
tm.ActiveDocument.Paragraphs(1).LineSpacingRule = LineSpacingAuto
tm.ActiveDocument.Paragraphs(1).PreferredLineSpacing = 150
```

**SpaceBefore (property)**

Data type: **Single**

Gets or sets the space above the paragraph in points (1 point corresponds to 1/72 inches).

**SpaceAfter (property)**

Data type: **Single**

Gets or sets the space below the paragraph in points (1 point corresponds to 1/72 inches).

**Alignment (property)**

Data type: **Long** (TmParagraphAlignment)

Gets or sets the alignment of the paragraph. The possible values are:

- **tmAlignParagraphLeft** = 0 ' left aligned
- **tmAlignParagraphRight** = 1 ' right aligned
- **tmAlignParagraphCenter** = 2 ' centered
- **tmAlignParagraphJustify** = 3 ' justified
Hyphenation (property)

Data type: Long (TmHyphenation)

Gets or sets the hyphenation mode. The possible values are:

- **tmHyphenationNone** = 0 ' no hyphenation
- **tmHyphenationAlways** = 1 ' hyphenate wherever possible
- **tmHyphenationEvery2Lines** = 2 ' 2 lines hyphenation
- **tmHyphenationEvery3Lines** = 3 ' 3 lines hyphenation

OutlineLevel (property)

Data type: Long (TmOutlineLevel)

Gets or sets the outline level of the paragraph. The possible values are:

- **tmOutlineLevelBodyText** = 0 ' Body Text
- **tmOutlineLevel1** = 1 ' Level 1
- **tmOutlineLevel2** = 2 ' Level 2
- **tmOutlineLevel3** = 3 ' Level 3
- **tmOutlineLevel4** = 4 ' Level 4
- **tmOutlineLevel5** = 5 ' Level 5
- **tmOutlineLevel6** = 6 ' Level 6
- **tmOutlineLevel7** = 7 ' Level 7
- **tmOutlineLevel8** = 8 ' Level 8
- **tmOutlineLevel9** = 9 ' Level 9

PageBreakBefore (property)

Data type: Boolean

Gets or sets the property "Page break" of the paragraph (True or False).

ColumnBreakBefore (property)

Data type: Boolean

Gets or sets the property "Column break" of the paragraph (True or False).

KeepWithNext (property)

Data type: Boolean

Gets or sets the property "Keep with next" (paragraph) of the paragraph (True or False).

KeepTogether (property)

Data type: Boolean
Gets or sets the property "Keep together" of the paragraph (True or False).

**WidowControl (property)**

Data type: **Boolean**

Gets or sets the property "Avoid widows/orphans" of the paragraph (True or False).

**BorderClearance (property)**

Gets or sets the spacing between the paragraph borders and the paragraph text. Each of four sides can be accessed individually.

Syntax 1 (setting a value):

\[
\text{BorderClearance}(\text{Index}) = n
\]

Syntax 2 (reading a value):

\[
n = \text{BorderClearance}(\text{Index})
\]

Parameters:

- **Index** (type: Long or TmBorderClearance) indicates which side of the paragraph should be accessed:
  - \( \text{tmBorderClearanceLeft} = 1 \)
  - \( \text{tmBorderClearanceRight} = 2 \)
  - \( \text{tmBorderClearanceTop} = 3 \)
  - \( \text{tmBorderClearanceBottom} = 4 \)

- \( n \) (type: Single) identifies the spacing in points.

Return type: Single

Examples:

' Set the spacing to the left border to 5 pt in the first paragraph
\[
\text{tm.ActiveDocument.Paragraphs(1).BorderClearance(tmBorderClearanceLeft)} = 5
\]

' Get the spacing to the left border in the first paragraph
\[
\text{MsgBox tm.ActiveDocument.Paragraphs(1).BorderClearance(tmBorderClearanceLeft)}
\]

**Shading (pointer to object)**

Data type: **Object**

Returns the Shading object that describes the shading of the paragraph

**DropCap (pointer to object)**

Data type: **Object**
Returns the DropCap object that describes the drop cap character of the paragraph

**Range (pointer to object)**

Data type: Object

Returns the Range object that describes the start and end position of the paragraph calculated as the number of signs from the document beginning

**Application (pointer to object)**

Data type: Object

Returns the Application object

**Parent (pointer to object)**

Data type: Object

Returns the parent object, i.e. an object of the type Paragraphs

**Borders (pointer to collection)**

Data type: Object

Returns the Borders collection which represents the five border lines of a paragraph. You can use this collection to get or change the line settings (thickness, color, etc)

---

**Range (object)**

Access paths:
- Application → Documents → Item → Paragraphs → Item → Range
- Application → ActiveDocument → Paragraphs → Item → Range

1 Description

The Range object is a child object of the Paragraph object. It returns the start and end position of the paragraph, expressed as the number of characters from the beginning of the document

2 Access to the object

For each Paragraph object there is exactly one Range object. This Range object can be accessed solely through the object pointer Range in the associated Paragraph object:
Properties, objects, collections, and methods

Properties:
- **Start** R/O
- **End** R/O

Objects:
- **Application** → Application
- **Parent** → Paragraph

**Start (property, R/O)**

Data type: Long

Returns the start position of the paragraph, expressed as the number of characters from the beginning of the document.

**End (property, R/O)**

Data type: Long

Returns the end position of the paragraph, expressed as the number of characters from the beginning of the document.

An example for the **Start** and **End** properties:

If the first paragraph of a document consists of the text "The first paragraph", the following applies:

- **tm.ActiveDocument.Paragraphs.Item(1).Range.Start** returns the value 0 ("the zeroth character from the beginning of the document").

You can use these values to select a paragraph or a part of it:

```vba
' Select the first two signs from the first paragraph
tm.ActiveDocument.Selection.SetRange 0, 1

' Select the whole paragraph
With tm.ActiveDocument
End With
```

You can select the first four paragraphs as follows:

```vba
With tm.ActiveDocument
End With
```
**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

---

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **Paragraph**

---

**DropCap (object)**

Access paths:
- **Application** → **Documents** → **Item** → **Paragraphs** → **Item** → **DropCap**
- **Application** → **ActiveDocument** → **Paragraphs** → **Item** → **DropCap**

1 **Description**

The **DropCap** object describes the drop cap character of a paragraph. It is a child object of **Paragraph** and allows you to get and set the properties of the drop cap character.

2 **Access to the object**

Each paragraph has exactly one instance of the **DropCap** object. It is accessed through the object pointer **DropCap** in the **Paragraph** object:

```plaintext
' Activate a drop cap for the first paragraph

' ... and change the font of the drop cap character
tm.ActiveDocument.Paragraphs(1).DropCap.FontName = "Arial"
```

3 **Properties, objects, collections, and methods**

Properties:
- **FontName**
- **Size**
- **Position**
- **LeftMargin**
- **RightMargin**
- **TopMargin**
- **BottomMargin**
Objects:
- Application → Application
- Parent → Paragraph

**FontName (property)**

Data type: String

Gets or sets the font name of the drop cap character.

**Size (property)**

Data type: Single

Gets or sets the font size of the drop cap character in points.

**Position (property)**

Data type: Long (TmDropPosition)

Gets or sets the mode in which the drop cap character is positioned. The possible values are:

- `tmDropNone` = 0 ' No drop cap character
- `tmDropNormal` = 1 ' In the paragraph
- `tmDropMargin` = 2 ' To the left of the paragraph
- `tmDropBaseLine` = 3 ' On the base line

**LeftMargin (property)**

Data type: Single

Gets or sets the left margin of the drop cap character in points (1 point corresponds to 1/72 inches).

**RightMargin (property)**

Data type: Single

Gets or sets the right margin of the drop cap character in points (1 point corresponds to 1/72 inches).

**TopMargin (property)**

Data type: Single

Gets or sets the top margin of the drop cap character in points (1 point corresponds to 1/72 inches).

**BottomMargin (property)**

Data type: Single
Gets or sets the bottom margin of the drop cap character in points (1 point corresponds to 1/72 inches).

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **Paragraph**

---

**Tables (collection)**

Access paths:
- **Application** ➔ **Documents** ➔ **Item** ➔ **Tables**
- **Application** ➔ **ActiveDocument** ➔ **Tables**

**Description**

**Tables** is a collection of all tables in a document. The individual elements of this collection are of the type **Table**

**Access to the collection**

Each open document has exactly one instance of the **Tables** collection. It is accessed through the **Document.Tables** object:

```vba
MsgBox tm.ActiveDocument.Tables.Count
```

**Properties, objects, collections, and methods**

Properties:
- **Count** R/O

Objects:
- **Item** ➔ **Table** (default object)
- **Application** ➔ **Application**
- **Parent** ➔ **Document**

Methods:
Add

**Count (property, R/O)**

Data type: **Long**

Returns the number of **Table** objects in the document – in other words: the number of the tables in the document.

**Item (pointer to object)**

Data type: **Object**

Returns an individual **Table** object, i.e. an individual table.

*Which Table object you get depends on the parameter that you pass to Item. You can specify either the numeric index or the name of the desired table. Examples:*

```
' Display the number of rows in the first table
MsgBox tm.Tables.Item(1).Rows.Count

' Display the number of rows in the table names "Table1"
MsgBox tm.Tables.Item("Table1").Rows.Count
```

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the **Document**

**Add (method)**

Add a new table to the document at the current selection.

Syntax:

```
Add NumRows, NumColumns
```

Parameters:

- **NumRows** (type: **Long**) defines the number of rows for the new table. If you specify a value of 0 or less, the default value 3 will be used.

- **NumColumns** (type: **Long**) defines the number of columns for the new table. If you specify a value of 0 or less, the default value 3 will be used.

Return type:
**Object** (a Table object which represents the new table)

Example:

```vbnet
' Add a 3*3 table to the document
tm.ActiveDocument.Tables.Add 3, 3

' The same getting the table as an object directly
Dim newTable as Object
Set newTable = tm.ActiveDocument.Tables.Add(3, 3)
MsgBox newTable.Rows.Count ' Display the number of table rows
```

---

**Table (object)**

Access paths:
- Application ➔ Documents ➔ Item ➔ Tables ➔ Item
- Application ➔ ActiveDocument ➔ Tables ➔ Item

1. **Description**

A Table object represents one individual table of the document and allows you to change its formatting.

For each table there is its own Table object. If you add tables to a document or delete them, the respective Table objects will be created or deleted dynamically.

2. **Access to the object**

The individual Table objects can be accessed solely through enumerating the elements of the Tables collection.

Each document has exactly one instance of this collection.

An example:

```vbnet
' Convert the first table of the document to text
tm.ActiveDocument.Tables.Item(1).ConvertToText
```

3. **Properties, objects, collections, and methods**

Objects:
- Shading ➔ Shading
- Cell ➔ Cell
- Application ➔ Application
- Parent ➔ Tables

Collections:
- Rows ➔ Rows
- Borders ➔ Borders
Methods:
- **ConvertToText**

### Shading (pointer to object)

**Data type:** `Object`

Returns the `Shading` object assigned to the table which represents the shading of the entire table.

### Cell (pointer to object)

**Data type:** `Object`

Returns a `Cell` object that represents a table cell specified by a row and a column.

**Syntax:**

```
Cell(Row, Column)
```

**Parameters:**

- **Row** (type: `Long`) specifies the row of the cell within the table.
- **Column** (type: `Long`) specifies the column of the cell within the table.

**Examples:**

```
' Set the vertical alignment of cell B3 in the first table to "Centered"
With tm.ActiveDocument.
    .Tables(1).Cell(2,3).Format.VerticalAlignment = tmCellVerticalAlignmentCenter
End With

' The same, but with a detour through the Rows collection
With tm.ActiveDocument.
    .Tables(1).Rows(2).Cells(3).Format.VerticalAlignment = tmCellVerticalAlignmentCenter
End With
```

### Application (pointer to object)

**Data type:** `Object`

Returns the `Application` object.

### Parent (pointer to object)

**Data type:** `Object`

Returns the parent object, i.e. an object of the type `Tables`.

### Rows (pointer to collection)

**Data type:** `Object`

Returns a collection of objects representing the rows of the table.
Returns the **Rows** collection assigned to the table. You can use it to enumerate the individual rows in the table, allowing you to get or set their formatting.

### Borders (pointer to collection)

**Data type:** Object

Returns the **Borders** collection which represents the six border lines of a table. You can use this collection to get or change the line settings (thickness, color, etc).

### ConvertToText (method)

Converts the table to text.

**Syntax:**

```
ConvertToText [Separator]
```

**Parameters:**

- **Separator** (optional; type: either **String** or **Long** or **TmTableFieldSeparator**) indicates the character that should be used to separate the columns. You can specify either an arbitrary character or one of the following symbolic constants:

  - `tmSeparateByCommas` = 0 ' Columns separated by commas
  - `tmSeparateByParagraphs` = 1 ' Columns separated by paragraphs
  - `tmSeparateByTabs` = 2 ' Columns separated by tabulators
  - `tmSeparateBySemicolons` = 3 ' Columns separated by semicolons

If you omit this parameter, the constant `tmSeparateByTabs` will be used.

**Return type:**

Object (a **Range** object which represents the converted text)

**Example:**

```
' Convert the first table in the document to text
tm.ActiveDocument.Tables.Item(1).ConvertToText tmSeparateByTabs
```

### Rows (collection)

**Access paths:**

- Application → Documents → Item → Tables → Item → Rows
- Application → ActiveDocument → Tables → Item → Rows

**Description:**

**Rows** is a collection of all table rows in a table. The individual elements of this collection are of the type **Row**.
Access to the collection

Each table has exactly one instance of the **Rows** collection. It is accessed through the object pointer **Rows** of the table:

```vba
' Display the number of rows in the first table of the document
MsgBox tm.ActiveDocument.Tables(1).Rows.Count
```

Properties, objects, collections, and methods

**Properties:**
- **Count** R/O

**Objects:**
- **Item** → **Row** (default object)
- **Application** → **Application**
- **Parent** → **Table**

**Count (property, R/O)**

Data type: **Long**

Returns the number of **Row** objects in the table – in other words: the number of rows in the table.

**Item (pointer to object)**

Data type: **Object**

Returns an individual **Row** object, i.e. an individual table row.

*Which Row object you get depends on the numeric value that you pass to **Item**: 1 for the first row in the table, 2 for the second, etc.*

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **Table**
Row (object)

Access paths:
- `Application` → `Documents` → `Item` → `Tables` → `Item` → `Rows` → `Item`
- `Application` → `ActiveDocument` → `Tables` → `Item` → `Rows` → `Item`

1 Description

A Row object represents one individual table row of a table and allows you to change the formatting of this table row.

For each table row there is its own Row object. If you add the rows to a table or delete them, the respective Row objects will be created or deleted dynamically.

2 Access to the object

The individual Row objects can be accessed solely through enumerating the elements of the `Rows` collection. Each table has exactly one instance of this collection.

An example:

```
' Display the height of the 2nd row of the 1st table
MsgBox tm.ActiveDocument.Tables(1).Rows.Item(2).Height
```

3 Properties, objects, collections, and methods

Properties:
- `Height`
- `HeightRule`
- `KeepTogether`
- `BreakPageAtRow`
- `AllowBreakInRow`
- `RepeatAsHeaderRow`

Objects:
- `Shading` → `Shading`
- `Application` → `Application`
- `Parent` → `Rows`

Collections:
- `Cells` → `Cells`
- `Borders` → `Borders`
**Height (property)**

Data type: **Single**

Gets or sets the height of the table represented by **Row** in points (1 point corresponds to 1/72 inches).

Please note that the following applies if the **HeightRule** property (see below) of the table row is set to "Automatic":

- When reading this property, the value **SmoUndefined** (9.999.999) will be returned.
- When changing this property, the method used to determine the height of the table row (**HeightRule**) will automatically be changed to "At least".

**HeightRule (property)**

Data type: **Long** (TmRowHeightRule)

Gets or sets the method used to determine the height of the table row represented by **Row**. The possible values are:

- **tmRowHeightAuto** = 0 ' Set row height to "automatic"
- **tmRowHeightExact** = 1 ' Set row height to "exact"
- **tmRowHeightAtLeast** = 2 ' Set row height to "at least"

**KeepTogether (property)**

Data type: **Boolean**

Gets or sets the property "Keep together with next row".

If set to **True**, TextMaker will not be allowed to insert an automatic page break between the table row and the next one. Instead, the break will be inserted above the row.

**BreakPageAtRow (property)**

Data type: **Boolean**

Gets or sets the property "Break page at row". If set to **True**, TextMaker inserts a page break above the table row.

**AllowBreakInRow (property)**

Data type: **Boolean**

Gets or sets the property "Allow page break in row".

If set to **True**, TextMaker is allowed to insert a page break within the row if required. If set to **False**, the whole table row will be transferred to the next page.
**RepeatAsHeaderRow (property)**

Data type: **Boolean**

Gets or sets the property "Repeat row as header". This property is available only for the first row in a table. If set to **True**, TextMaker repeats the row on every page, if the table extends over two or more pages. This is useful for repeating table headings on each page.

**Shading (pointer to object)**

Data type: **Object**

Returns the **Shading** object assigned to the **Row** object which represents the shading of the entire table row.

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **Rows**.

**Cells (pointer to collection)**

Data type: **Object**

Returns the **Cells** collection assigned to the table which contains all cells of the table row.

**Borders (pointer to collection)**

Data type: **Object**

Returns the **Borders** collection which represents the five border lines of a table row. You can use this collection to get or change the line settings (thickness, color, etc).

---

**Cells (collection)**

Access paths:
- **Application** → **Documents** → **Item** → **Tables** → **Item** → **Rows** → **Item** → **Cells**
- **Application** → **ActiveDocument** → **Tables** → **Item** → **Rows** → **Item** → **Cells**
**Description**

**Cells** is a collection of all table cells in an individual table row. The individual elements of this collection are of the type **Cell**

**Access to the collection**

Each row of a table has exactly one instance of the **Cells** collection. It is accessed through the object pointer **Cells** of the table row:

```vba
' Display the number of cells in the 2nd row of the 1st table
MsgBox tm.ActiveDocument.Tables(1).Rows(2).Cells.Count
```

**Properties, objects, collections, and methods**

Properties:
- **Count** R/O

Objects:
- **Item** → **Cell** (default object)
- **Application** → **Application**
- **Parent** → **Row**

**Count (property, R/O)**

Data type: **Long**

Returns the number of **Cell** objects in the table row – in other words: the number of cells in the table row

**Item (pointer to object)**

Data type: **Object**

Returns an individual **Cell** object, ie an individual table cell

*Which* **Cell** object you get depends on the numeric value that you pass to **Item**: 1 for the first cell in the table row, 2 for the second, etc.

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object
Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. an object of the type **Table**

---

**Cell (object)**

Access paths:
- Application → Documents → Item → Tables → Item → Cell(x, y) → Item
- Application → ActiveDocument → Tables → Item → Cell(x, y) → Item
- Application → Documents → Item → Tables → Item → Rows → Item → Cells → Item
- Application → ActiveDocument → Tables → Item → Rows → Item → Cells → Item

1 Description

A **Cell** object represents one individual cell of a table row and allows you to retrieve and change the formatting of this table cell.

For each cell there is its own **Cell** object. If you add cells to a table row or delete them, the respective **Cell** objects will be created or deleted dynamically.

2 Access to the object

The individual **Cell** objects can be accessed solely through enumerating the elements of the **Cells** collection. Each row of a table has exactly one instance of this collection.

An example:

```
' Set the width of the 5th cell in the 2nd row of the 1st table to 25
tm.ActiveDocument.Tables(1).Rows(2).Cells(5).PreferredWidth = 25
```

3 Properties, objects, collections, and methods

Properties:
- **PreferredWidthType**
- **PreferredWidth**
- **Width**
- **VerticalAlignment**
- **Orientation**
- **LockText**
- **LeftPadding**
- **RightPadding**
- **TopPadding**
- **BottomPadding**
Objects:
- **Shading** → *Shading*
- **Application** → *Application*
- **Parent** → *Row*

Collections:
- **Borders** → *Borders*

---

**PreferredWidthType (property)**

Data type: **Long** (*TmPreferredWidthType*)

Gets or sets the method used to determine the width of the cell. The possible values are:

- `tmPreferredWidthPoints` = 0 ' Width in points
- `tmPreferredWidthPercent` = 1 ' Width in percent
- `tmPreferredWidthAuto` = 2 ' Automatic width

---

**PreferredWidth (property)**

Data type: **Single**

Gets or sets the width of the cell. It depends on the width type of the cell whether the value is expressed in points or in percent (see **PreferredWidthType** above).

Example:

```vbscript
' Set the width for the first cell to 25 percent
tm.ActiveDocument.Tables(1).Rows(1).Cells(1).PreferredWidthType = tmPreferredWidthPercent

' Set the width for the second cell to 3.5cm
tm.ActiveDocument.Tables(1).Rows(1).Cells(2).PreferredWidthType = tmPreferredWidthPoints
tm.ActiveDocument.Tables(1).Rows(1).Cells(2).PreferredWidth = tm.CentimetersToPoints(3.5)
```

---

**Width (property)**

Data type: **Single**

Gets or sets the width of the cell in points (1 point corresponds to 1/72 inches).

Unlike the **PreferredWidth** property (see there), it will be ignored whether the cell has an absolute, percental or automatic width – it will always return the width in points.

---

**VerticalAlignment (property)**

Data type: **Long** (*TmCellVerticalAlignment*)
Gets or sets the vertical alignment of the text inside the cell. The possible values are:

- `tmCellVerticalAlignmentTop` = 0 ' top alignment
- `tmCellVerticalAlignmentCenter` = 1 ' center alignment
- `tmCellVerticalAlignmentBottom` = 2 ' bottom alignment
- `tmCellVerticalAlignmentJustify` = 3 ' vertical justification

**Orientation (property)**

Data type: `Long`

Gets or sets the print orientation of the cell. The possible values are: 0, 90, 180 and -90, corresponding to the respective rotation angle.

Note: The value 270 will be automatically converted to -90.

**LockText (property)**

Data type: `Boolean`

Gets or sets the property "Lock text" for the cell (True or False).

Note that TextMaker locks the cell only when form mode is active.

**LeftPadding (property)**

Data type: `Single`

Gets or sets the left text margin inside the cell, measured in points (1 point corresponds to 1/72 inches).

**RightPadding (property)**

Data type: `Single`

Gets or sets the right text margin inside the cell, measured in points (1 point corresponds to 1/72 inches).

**TopPadding (property)**

Data type: `Single`

Gets or sets the top text margin inside the cell, measured in points (1 point corresponds to 1/72 inches).

**BottomPadding (property)**

Data type: `Single`

Gets or sets the bottom text margin inside the cell, measured in points (1 point corresponds to 1/72 inches).
Shading (pointer to object)

Data type: Object

Returns the Shading object which you can use to access the shading of the table cell

Application (pointer to object)

Data type: Object

Returns the Application object

Parent (pointer to object)

Data type: Object

Returns the parent object, i.e. an object of the type Row

Borders (pointer to collection)

Data type: Object

Returns the Borders collection which represents the four border lines of a table cell. You can use this collection to get or change the line settings (thickness, color, etc)

Borders (collection)

Access paths for paragraph borders:

- Application ➔ Documents ➔ Item ➔ Paragraphs ➔ Item ➔ Borders
- Application ➔ ActiveDocument ➔ Paragraphs ➔ Item ➔ Borders

Access paths for table borders:

- Application ➔ Documents ➔ Item ➔ Tables ➔ Item ➔ Borders
- Application ➔ ActiveDocument ➔ Tables ➔ Item ➔ Borders

Access path for table row borders:

- Application ➔ Documents ➔ Item ➔ Tables ➔ Item ➔ Rows ➔ Item ➔ Borders
- Application ➔ ActiveDocument ➔ Tables ➔ Item ➔ Rows ➔ Item ➔ Borders

Access path for table cell borders:

- Application ➔ Documents ➔ Item ➔ Tables ➔ Item ➔ Cell(x, y) ➔ Borders
- Application ➔ ActiveDocument ➔ Tables ➔ Item ➔ Cell(x, y) ➔ Borders
- Application ➔ Documents ➔ Item ➔ Tables ➔ Item ➔ Rows ➔ Item ➔ Cells ➔ Item ➔ Borders
- Application ➔ ActiveDocument ➔ Tables ➔ Item ➔ Rows ➔ Item ➔ Cells ➔ Item ➔ Borders
Description

**Borders** is a collection of the border lines (left, right, top, bottom, etc.) of a paragraph, a table, a table row, or a cell. Accordingly, it is a child object of the **Paragraph**, **Table**, **Row** or **Cell** object.

The individual elements of this collection are of the type **Border**.

Access to the object

Each paragraph, table, table row or cell has exactly one instance of the **Borders** collection. It is accessed through the object pointer **Borders** in the respective object. The parameter you pass is the number of the border that you would like to access, as follows:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmBorderTop</td>
<td>-1 ' Top border line</td>
</tr>
<tr>
<td>tmBorderLeft</td>
<td>-2 ' Left border line</td>
</tr>
<tr>
<td>tmBorderBottom</td>
<td>-3 ' Bottom border line</td>
</tr>
<tr>
<td>tmBorderRight</td>
<td>-4 ' Right border line</td>
</tr>
<tr>
<td>tmBorderHorizontal</td>
<td>-5 ' Horizontal grid line (only for tables)</td>
</tr>
<tr>
<td>tmBorderVertical</td>
<td>-6 ' Vertical grid line (only for tables and table rows)</td>
</tr>
<tr>
<td>tmBorderBetween</td>
<td>-7 ' Border line between paragraphs (only for paragraphs)</td>
</tr>
</tbody>
</table>

Some examples:

' Change the left border of the first paragraph
```
    tm.ActiveDocument.Paragraphs(1).Borders(tmBorderLeft).Type = tmLineStyleSingle
```

' Change the top border of the first table
```
    tm.ActiveDocument.Tables(1).Borders(tmBorderTop).Type = tmLineStyleDouble
```

' Change the vertical grid lines of the second row in the first table
```
```

' Change the bottom border of the third cell in the second row from the first table
```
    tm.ActiveDocument.Tables(1).Rows(2).Cells(3).Borders(tmBorderBottom).Type = tmLineStyleDouble
```

Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → **Border** (default object)
- **Application** → **Application**
- **Parent** → **Paragraph**, **Table**, **Row** or **Cell**
**Count (property, R/O)**

Data type: **Long**

Returns the number of **Border** objects in the collection, i.e., the number of border lines available for an object:

- When used with a child object of a **Paragraph** object, 5 is returned, since paragraphs can have five different types of border lines (left, right, top, bottom, between the paragraphs).
- When used with a child object of a **Table** object, 6 is returned, since tables can have six different types of border lines (left, right, top, bottom, horizontal gutter, vertical gutter).
- When used with a child object of a **Row** object, 5 is returned, since table rows can have five different types of border lines (left, right, top, bottom, vertical gutter).
- When used with a child object of a **Cell** object, 4 is returned, since table cells can have four different types of border lines (left, right, top, bottom).

**Item (pointer to object)**

Data type: **Object**

Returns an individual **Border** object that you can use to get or set the properties (thickness, color, etc.) of one individual border line.

Which Border object you get depends on the numeric value that you pass to **Item**. The following table shows the admissible values:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmBorderTop</td>
<td>-1</td>
<td>Top border line</td>
</tr>
<tr>
<td>tmBorderLeft</td>
<td>-2</td>
<td>Left border line</td>
</tr>
<tr>
<td>tmBorderBottom</td>
<td>-3</td>
<td>Bottom border line</td>
</tr>
<tr>
<td>tmBorderRight</td>
<td>-4</td>
<td>Right border line</td>
</tr>
<tr>
<td>tmBorderHorizontal</td>
<td>-5</td>
<td>Horizontal grid line (only for tables)</td>
</tr>
<tr>
<td>tmBorderVertical</td>
<td>-6</td>
<td>Vertical grid line (only for tables and table rows)</td>
</tr>
<tr>
<td>tmBorderBetween</td>
<td>-7</td>
<td>Border line between paragraphs (only for paragraphs)</td>
</tr>
</tbody>
</table>

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e., an object of the types **Paragraph, Table, Row** or **Cell**.

**Example for the usage of the Borders collection**

Sub Main
BasicMaker and TextMaker

Dim tm as Object

Set tm = CreateObject("TextMaker.Application")
TM.Visible = True

With tm.ActiveDocument.Paragraphs.Item(1)
  .Borders(tmBorderLeft).Type = tmLineStyleSingle
  .Borders(tmBorderLeft).Thick1 = 4
  .Borders(tmBorderLeft).Color = smoColorBlue

  .Borders(tmBorderRight).Type = tmLineStyleDouble
  .Borders(tmBorderRight).Thick1 = 1
  .Borders(tmBorderRight).Thick2 = 1
  .Borders(tmBorderRight).Color = smoColorRed
End With

Set tm = Nothing
End Sub

---

## Border (object)

### Access paths for paragraph borders:

- **Application** → **Documents** → **Item** → **Paragraphs** → **Item** → **Borders** → **Item**
- **Application** → **ActiveDocument** → **Paragraphs** → **Item** → **Borders** → **Item**

### Access paths for table borders:

- **Application** → **Documents** → **Item** → **Tables** → **Item** → **Borders** → **Item**
- **Application** → **ActiveDocument** → **Tables** → **Item** → **Borders** → **Item**

### Access path for table row borders:

- **Application** → **Documents** → **Item** → **Tables** → **Item** → **Rows** → **Item** → **Borders** → **Item**
- **Application** → **ActiveDocument** → **Tables** → **Item** → **Rows** → **Item** → **Borders** → **Item**

### Access path for table cell borders:

- **Application** → **Documents** → **Item** → **Tables** → **Item** → **Cell(x, y)** → **Borders** → **Item**
- **Application** → **ActiveDocument** → **Tables** → **Item** → **Cell(x, y)** → **Borders** → **Item**
- **Application** → **Documents** → **Item** → **Tables** → **Item** → **Rows** → **Item** → **Cells** → **Item** → **Borders** → **Item**
- **Application** → **ActiveDocument** → **Tables** → **Item** → **Rows** → **Item** → **Cells** → **Item** → **Borders** → **Item**

---

### 1 Description

A **Border** object represents one individual border line of a paragraph, a table, a table row, or a table cell – for example the left, right, top, or bottom line. You can use this object to get or change the line settings (thickness, color, etc.) of a border line.

---

### 2 Access to the object

The individual **Border** objects can be accessed solely through enumerating the elements of the **Borders** collection of a paragraph, table, table row, or table cell As a parameter, you pass the number of the border that you would like to access, as follows:
BasicMaker and TextMaker

```
tmBorderTop    = -1 ' Top border line
tmBorderLeft   = -2 ' Left border line
tmBorderBottom = -3 ' Bottom border line
tmBorderRight  = -4 ' Right border line
tmBorderHorizontal = -5 ' Horizontal grid line (only for tables)
tmBorderVertical = -6 ' Vertical grid line (only for tables and table rows)
tmBorderBetween = -7 ' Border line between paragraphs (only for paragraphs)
```

Examples:

' Change the left border of the first paragraph
tm.ActiveDocument.Paragraphs(1).Borders(tmBorderLeft).Type = tmLineStyleSingle

' Change the top border of the first table
tm.ActiveDocument.Tables(1).Borders(tmBorderTop).Type = tmLineStyleDouble

' Change the vertical grid lines of the second row in the first table

' Change the bottom border of the third cell in the second row from the first table
tm.ActiveDocument.Tables(1).Rows(2).Cells(3).Borders(tmBorderBottom).Type = tmLineStyleDouble

### Properties, objects, collections, and methods

**Properties:**
- **Type**
- **Thick1**
- **Thick2**
- **Separation**
- **Color**
- **ColorIndex**

**Objects:**
- **Application → Application**
- **Parent → Borders**

#### Type (property)

Data type: **Long** (TmLineStyle)

Gets or sets the type of the border line. The possible values are:

```
tmLineStyleNone    = 0 ' No border
tmLineStyleSingle  = 1 ' Simple border
tmLineStyleDouble  = 2 ' Double border
```

#### Thick1 (property)

Data type: **Single**

Gets or sets the thickness of the first border line in points (1 point corresponds to 1/72 inches).
**Thick2 (property)**

Data type: **Single**

Gets or sets the thickness of the second border line in points (1 point corresponds to 1/72 inches).

This property is used only if the type of the border is set to **tmLineStyleDouble**.

**Separation (property)**

Data type: **Single**

Gets or sets the offset between two border lines in points (1 point corresponds to 1/72 inches).

This property is used only if the type of the border is set to **tmLineStyleDouble**.

**Color (property)**

Data type: **Long** (SmoColor)

Gets or sets the color of the border line(s) as a "BGR" value (Blue-Green-Red triplet). You can either specify an arbitrary value or use one of the predefined BGR color constants.

**ColorIndex (property)**

Data type: **Long** (SmoColorIndex)

Gets or sets the color of the border line(s) as an index color. "Index colors" are the standard colors of TextMaker, consecutively numbered from 0 for black to 15 for light gray. You can use only one of the values listed in the Color Indices table.

Note: It is recommended to use the **Color** property (see above) instead of this one, since it is not limited to the 16 standard colors but enables you to access the entire BGR color palette.

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Borders**
## Shading (object)

Access paths for paragraph shading:
- **Application** → **Documents** → **Item** → **Paragraphs** → **Item** → **Shading**
- **Application** → **ActiveDocument** → **Paragraphs** → **Item** → **Shading**

Access paths for table shading:
- **Application** → **Documents** → **Item** → **Tables** → **Item** → **Shading**
- **Application** → **ActiveDocument** → **Tables** → **Item** → **Shading**

Access paths for table row shading:
- **Application** → **Documents** → **Item** → **Tables** → **Item** → **Rows** → **Item** → **Shading**
- **Application** → **ActiveDocument** → **Tables** → **Item** → **Rows** → **Item** → **Shading**

Access paths for table cell shading:
- **Application** → **Documents** → **Item** → **Tables** → **Item** → **Rows** → **Item** → **Cells** → **Item** → **Shading**
- **Application** → **ActiveDocument** → **Tables** → **Item** → **Rows** → **Item** → **Cells** → **Item** → **Shading**

### 1 Description

The Shading object represents the shading of one of the following objects: paragraphs, tables, table rows or cells. It is a child object of the Paragraph, Table, Row or Cell object.

### 2 Access to the object

Each paragraph, table, table row or cell has exactly one instance of the Shading object. It is accessed through the object pointer Shading in the respective object:

```plaintext
' Change the shading of the first paragraph

' Change the shading of the first table
tm.ActiveDocument.Tables(1).Shading.Texture = smoPatternHalftone

' Change the shading of the second row in the first table
tm.ActiveDocument.Tables(1).Rows(2).Shading.Texture = smoPatternHalftone

' Change the shading of the third cell in the second row from the first table
```

### 3 Properties, objects, collections, and methods

Properties:
- Texture
- Intensity
- ForegroundPatternColor
BasicMaker and TextMaker

- ForegroundPatternColorIndex
- BackgroundPatternColor
- BackgroundPatternColorIndex

Objects:
- Application  ➔ Application
- Parent ➔ Paragraph, Table, Row oder Cell

**Texture (property)**

Data type: Long (SmoShadePatterns)

Gets or sets the fill pattern for the shading. The possible values are:

<table>
<thead>
<tr>
<th>Texture</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoPatternNone</td>
<td>0</td>
</tr>
<tr>
<td>smoPatternHalftone</td>
<td>1</td>
</tr>
<tr>
<td>smoPatternRightDiagCoarse</td>
<td>2</td>
</tr>
<tr>
<td>smoPatternLeftDiagCoarse</td>
<td>3</td>
</tr>
<tr>
<td>smoPatternHashDiagCoarse</td>
<td>4</td>
</tr>
<tr>
<td>smoPatternVertCoarse</td>
<td>5</td>
</tr>
<tr>
<td>smoPatternHorzCoarse</td>
<td>6</td>
</tr>
<tr>
<td>smoPatternHashCoarse</td>
<td>7</td>
</tr>
<tr>
<td>smoPatternRightDiagFine</td>
<td>8</td>
</tr>
<tr>
<td>smoPatternLeftDiagFine</td>
<td>9</td>
</tr>
<tr>
<td>smoPatternHashDiagFine</td>
<td>10</td>
</tr>
<tr>
<td>smoPatternVertFine</td>
<td>11</td>
</tr>
<tr>
<td>smoPatternHorzFine</td>
<td>12</td>
</tr>
<tr>
<td>smoPatternHashFine</td>
<td>13</td>
</tr>
</tbody>
</table>

To add a shading, set the **Texture** property to smoPatternHalftone and specify the required intensity of shading with the **Intensity** property.

To add a pattern, set the **Texture** property to one of the values between smoPatternRightDiagCoarse and smoPatternHashFine.

To remove an existing shading or pattern, set the **Texture** property to smoPatternNone.

**Intensity (property)**

Data type: Long

Gets or sets the intensity of the shading. The possible values are between 0 and 100 (percent).

This value can be set or get only if a shading was chosen with the **Texture** property (i.e., the **Texture** property was set to smoPatternHalftone). If a pattern was chosen (i.e., the **Texture** property has any other value), accessing the **Intensity** property fails.

**ForegroundPatternColor (property)**

Data type: Long (SmoColor)

Gets or sets the foreground color for the shading or pattern as a "BGR" value (Blue-Green-Red triplet). You can either specify an arbitrary value or use one of the predefined BGR color constants.
### ForegroundPatternColorIndex (property)

Data type: **Long** (SmoColorIndex)

Gets or sets the foreground color for the shading or pattern as an index color. "Index colors" are the standard colors of TextMaker, consecutively numbered from 0 for black to 15 for light gray. You can use only one of the values presented in the Color Indices table.

Note: It is recommended to use the **ForegroundPatternColor** property (see above) instead of this one, since it is not limited to the 16 standard colors but enables you to access the entire BGR color palette.

### BackgroundPatternColor (property)

Data type: **Long** (SmoColor)

Gets or sets the background color for the shading or pattern as a "BGR" value (Blue-Green-Red triplet). You can either specify an arbitrary value or use one of the predefined BGR color constants.

### BackgroundPatternColorIndex (property)

Data type: **Long** (SmoColorIndex)

Gets or sets the background color for the shading or pattern as an index color. "Index colors" are the standard colors of TextMaker, consecutively numbered from 0 for black to 15 for light gray. You can use only one of the values presented in the Color Indices table.

Note: It is recommended to use the **BackgroundPatternColor** property (see above) instead of this one, since it is not limited to the 16 standard colors but enables you to access the entire BGR color palette.

### Application (pointer to object)

Data type: **Object**

Returns the **Application** object.

### Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. an object of the types **Paragraph, Table, Row** or **Cell**.

### Example for the usage of the Shading object

```vba
Sub Main
    Dim tm as Object
    Set tm = CreateObject("TextMaker.Application")
    tm.Visible = True
    With tm.ActiveDocument.Paragraphs.Item(1)
        ' Your shading code here
    End With
End Sub
```
FormFields (collection)

Access paths:
- Application → Documents → Item → FormFields
- Application → ActiveDocument → FormFields

1 Description

FormFields is a collection of all form objects (text fields, check boxes and drop-down lists) in a document. The individual elements of this collection are of the type FormField.

2 Access to the collection

Each opened document has exactly one instance of the FormFields collection. It is accessed through the Document.FormFields object:

' Display the number of form fields in the active document
MsgBox tm.ActiveDocument.FormFields.Count

3 Properties, objects, collections, and methods

Properties:
- Count R/O
- DisplayFieldNames
- Shaded

Objects:
- Item → FormField (default object)
- Application → Application
- Parent → Document

Count (property, R/O)

Data type: Long

Returns the number of FormField objects in the document – in other words: the number of form objects in the document.
**DisplayFieldNames (property)**

Data type: **Boolean**

Gets or sets the setting "Display field names" in the respective document (True or False).

**Shaded (property)**

Data type: **Boolean**

Gets or sets the setting "Shade fields" in the respective document (True or False).

**Item (pointer to object)**

Data type: **Object**

Returns an individual **FormField** object, ie an individual form object

*Which* FormField object you get depends on the parameter that you pass to **Item**. You can specify either the numeric index or the name of the desired form object. Examples:

```vba
' Show the numeric type of the first form field in the document
MsgBox tm.ActiveDocument.FormFields(1).Type

' Show the numeric type of the form field named "DropDown1"
MsgBox tm.ActiveDocument.FormFields("DropDown1").Type
```

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **Document**

---

**FormField (object)**

Access paths:
- Application → Documents → Item → FormFields → Item
- Application → ActiveDocument → FormFields → Item
1 Description

A `FormField` object represents one individual form object of a document and allows you to retrieve the value it returns or to change its formatting.

Each form object can represent either a text field, a check box or a drop-down list.

For each form object there is its own `FormField` object. If you add form objects to a document or delete them, the respective `FormField` objects will be created or deleted dynamically.

2 Access to the object

The individual `FormField` objects can be accessed solely through enumerating the elements of the `FormFields` collection. Each document has exactly one instance of this collection.

An example:

```bash
' Show the name of the first form object in the document
MsgBox tm.ActiveDocument.FormFields(1).Name
```

Text fields, checkboxes and drop-down lists have common properties as well as type-specific ones. Accessing these properties can be performed in different ways:

- Properties that are available in all form objects (for example, whether they are visible) can be found directly in the `FormField` object. Details on these properties will follow below.

- On the other hand, properties that are type-specific (for example, only drop-down lists have a list of the items they contain) can be found in the child objects `TextInput`, `CheckBox` and `DropDown`. Details on these properties will be presented for each child object separately.

3 Properties, objects, collections, and methods

Properties:
- Name
- Visible
- Printable
- Locked
- Tabstop
- Type R/O
- Result R/O

Objects:
- `TextInput` → `TextInput`
- `CheckBox` → `CheckBox`
- `DropDown` → `DropDown`
- `Application` → `Application`
- `Parent` → `FormFields`
Name (property)

Data type: String

Gets or sets the name of the object. Corresponds to the Name option in the dialog box of TextMaker's Object > Properties menu command.

Visible (property)

Data type: Boolean

Gets or sets the "Visible" setting of the object (True or False). Corresponds to the "Visible" option in the dialog box of TextMaker's Object > Properties menu command.

Printable (property)

Data type: Boolean

Gets or sets the "Printable" setting of the object (True or False). Corresponds to the "Printable" option in the dialog box of TextMaker's Object > Properties menu command.

Locked (property)

Data type: Boolean

Gets or sets the "Locked" setting of the object (True or False). Corresponds to the "Locked" option in the dialog box of TextMaker's Object > Properties menu command.

Tabstop (property)

Data type: Boolean

Gets or sets the setting whether the object has a tab stop (True or False). Corresponds to the "Tab stop" option in the dialog box of TextMaker's Object > Properties menu command.

Type (property, R/O)

Data type: Long (TmFieldType)

Returns the type of the object as an integer. The possible values are:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmFieldFormTextInput</td>
<td>1</td>
<td>Text field</td>
</tr>
<tr>
<td>tmFieldFormCheckBox</td>
<td>10</td>
<td>Check box</td>
</tr>
<tr>
<td>tmFieldFormDropDown</td>
<td>11</td>
<td>Drop-down list</td>
</tr>
</tbody>
</table>

Result (property, R/O)

Data type: String
Returns the current result of the object:

- For **CheckBox**: the text of the checkbox if it is checked; otherwise an empty string
- For **DropDown**: the entry selected at the moment (as text)
- For **TextInput**: the content of the text field

### TextInput (pointer to object)

Data type: **Object**

Returns the **TextInput** object that allows you to access the text field specific properties of the form object

Note: The form object represents a text field or a text frame only if the property **TextInput.Valid** returns **True**.

### CheckBox (pointer to object)

Data type: **Object**

Returns the **CheckBox** object that allows you to access the checkbox specific properties of the form object

Note: The form object represents a checkbox only if the property **CheckBox.Valid** returns **True**.

### DropDown (pointer to object)

Data type: **Object**

Returns the **DropDown** object that allows you to access the drop-down list specific properties of the form object

Note: The form object represents a drop-down list only if the property **DropDown.Valid** returns **True**.

### Application (pointer to object)

Data type: **Object**

Returns the **Application** object

### Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. an object of the type **FormFields**
TextInput (object)

Access paths:
- Application → Documents → Item → FormFields → Item → TextInput
- Application → ActiveDocument → FormFields → Item → TextInput

1 Description

A TextInput object represents one individual form object of the type TextInput and allows you to retrieve and change its value.

A TextInput object can be any of the following object types:
- a text field (created e.g. with the Object > New Form Object > Text Field menu command)
- a text frame (created e.g. with the Object > New Text Frame menu command)
- a drawing, to which text has been added using the Add Text command

TextInput is a child object of the FormField object

2 Access to the object

The TextInput object can be accessed solely through the parent object FormField

Only if the property TextInput.Valid returns the value True, the form object really represents a text field – and not a checkbox or a drop-down list.

An example:

```vba
' Check the type of the first form object.
' If it is a TextInput object, retrieve the text it contains
If tm.ActiveDocument.FormFields(1).TextInput.Valid Then
    MsgBox tm.ActiveDocument.FormFields(1).TextInput.Text
End If
```

3 Properties, objects, collections, and methods

Properties:
- Text (default property)
- Valid R/O
- LockText

Objects:
- Application → Application
- Parent → FormField
BasicMaker and TextMaker

**Text (property)**

Data type: **String**

Gets or sets the content of the text field.

**Valid (property, R/O)**

Data type: **Boolean**

Returns **False** if the object is not a **TextInput** object.

**LockText (property)**

Data type: **Boolean**

Gets or sets the setting "Lock text" of the text field (**True** or **False**). Corresponds to the option "Lock text" in the dialog box of TextMaker's **Object > Properties** menu command.

Note that TextMaker locks the text field for text input only when form mode is active.

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **FormField**

---

**CheckBox (object)**

Access paths:
- **Application** ➔ **Documents** ➔ **Item** ➔ **FormFields** ➔ **Item** ➔ **CheckBox**
- **Application** ➔ **ActiveDocument** ➔ **FormFields** ➔ **Item** ➔ **CheckBox**

**Description**

A **CheckBox** object represents one individual form object of the type **CheckBox** and allows you to retrieve and change its value.

**CheckBox** is a child object of the **FormField** object
2 Access to the object

The `CheckBox` object can be accessed solely through the parent object `FormField`.

Only if the property `CheckBox.Valid` returns the value `True`, the form object really represents a checkbox – and not a text field or a drop-down list.

An example:

```vbnet
' Check the type of the first form object. If it is a CheckBox object, display its value (True or False).
If tm.ActiveDocument.FormFields(1).CheckBox.Valid Then
    MsgBox tm.ActiveDocument.FormFields(1).CheckBox.Value
End If
```

3 Properties, objects, collections, and methods

Properties:
- `Value` (default property)
- `Text`
- `Valid` R/O

Objects:
- `Application` → `Application`
- `Parent` → `FormField`

### Value (property)

Data type: `Boolean`

Gets or sets the property whether the checkbox is checked or not (True or False).

### Text (property)

Data type: `String`

Gets or sets the text of the checkbox.

### Valid (property, R/O)

Data type: `Boolean`

Returns `False` if the object is not a `CheckBox` object.

### Application (pointer to object)

Data type: `Object`
Returns the  **Application**  object

### Parent (pointer to object)

**Data type:**  **Object**

Returns the parent object, i.e. an object of the type  **FormField**

---

### DropDown (object)

**Access paths:**
-  **Application**  →  **Documents**  →  **Item**  →  **FormField**  →  **Item**  →  **DropDown**
-  **Application**  →  **ActiveDocument**  →  **FormField**  →  **Item**  →  **DropDown**

#### Description

A  **DropDown**  object represents one individual form object of the type  **DropDown** (drop-down list) and allows you to retrieve and change its value.

**DropDown**  is a child object of the  **FormField**  object

#### Access to the object

The  **DropDown**  object can be accessed solely through the parent object  **FormField**

Only if the property  **DropDown.Valid**  returns the value  **True**, the form object really represents a drop-down list – and not a text field or a checkbox.

An example:

```vba
' Check the type of the first form object. If it is
' a DropDown object, display the index of the selected entry.
If tm.ActiveDocument.FormFields(1).DropDown.Valid Then
    MsgBox tm.ActiveDocument.FormFields(1).DropDown.Value
End If
```

#### Properties, objects, collections, and methods

**Properties:**
-  **Value**  (default property)
-  **Valid**  R/O
-  **ListEntries**

**Objects:**
-  **Application**  →  **Application**
### Value (property)

Data type: **Long**

Gets or sets the numeric index of the selected list entry.

### Valid (property, R/O)

Data type: **Boolean**

Returns `False` if the object is not a `DropDown` object.

### ListEntries (pointer to collection)

Data type: **Object**

Returns the `ListEntries` collection that contains all entries in the drop-down list. You can use this collection to retrieve and edit the entries of the drop-down list (such as: delete existing entries and add new ones).

### Application (pointer to object)

Data type: **Object**

Returns the `Application` object.

### Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. an object of the type `FormField`.

---

### ListEntries (collection)

Access paths:
- Application → Documents → Item → FormFields → Item → DropDown → ListEntries
- Application → ActiveDocument → FormFields → Item → DropDown → ListEntries

#### Description

`ListEntries` is a collection of all list entries in a `DropDown` object. You can use it to retrieve and edit the individual entries of a drop-down list.

The individual elements of this collection are of the type `ListEntry`
2 Access to the collection

Each **DropDown** form object has exactly one instance of the **ListEntries** collection. It is accessed through the **DropDown.ListEntries** object:

```vbnet
' Show the number of list entries in the first form element
' (if it is really a drop-down list)
If tm.ActiveDocument.FormFields(1).DropDown.Valid Then
    MsgBox tm.ActiveDocument.FormFields(1).DropDown.ListEntries.Count
End If
```

3 Properties, objects, collections, and methods

**Properties:**
- **Count** R/O

**Objects:**
- **Item** → **ListEntry** (default object)
- **Application** → **Application**
- **Parent** → **DropDown**

**Methods:**
- **Add**
- **Clear**

**Count (property, R/O)**

Data type: **Long**

Returns the number of **ListEntry** objects in the collection – in other words: the number of entries in the drop-down list

**Item (pointer to object)**

Data type: **Object**

Returns an individual **ListEntry** object, ie an individual list entry in the drop-down list

*Which* ListEntry object you get depends on the parameter that you pass to **Item**. You can specify either the numeric index or the name of the desired list entry. Examples:

```vbnet
' Show the first list entry
MsgBox tm.FormFields(1).DropDown.ListEntries.Item(1).Name

' Show the list entry with the text "Test"
MsgBox tm.FormFields(1).DropDown.ListEntries.Item("Test").Name
```
**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **DropDown**

**Add (method)**

Adds a new entry to the drop-down list.

Syntax:

\[
\text{Add Name}
\]

Parameters:

- **Name** (type: **String**) specifies the string to be added.

Return type:

**Object** (a **ListEntry** object that represents the new entry)

Example:

```vbnet
' Add an entry to the first form field in the document (a drop-down list)
tm.ActiveDocument.FormFields(1).DropDown.ListEntries.Add "Green"

' The same, but using the return value (mind the parentheses!)
Dim entry as Object
Set entry = tm.ActiveDocument.FormFields(1).DropDown.ListEntries.Add("Green")
```

**Clear (method)**

Deletes all entries from the drop-down list.

Syntax:

\[
\text{Clear}
\]

Parameters:

- none

Return type:

- none

Example:
' Delete all entries from the first form field in the document  

---

**ListEntry (object)**

Access paths:
- `Application` ➔ `Documents` ➔ `Item` ➔ `FormFields` ➔ `Item` ➔ `DropDown` ➔ `ListEntries` ➔ `Item`
- `Application` ➔ `ActiveDocument` ➔ `FormFields` ➔ `Item` ➔ `DropDown` ➔ `ListEntries` ➔ `Item`

---

### 1 Description

A **ListEntry** object represents one individual entry in a drop-down list (a form object) and allows you to retrieve, change and delete it.

For each entry in a drop-down list there is its own **ListEntry** object. If you add entries to a drop-down list or delete them, the respective **ListEntry** objects will be created or deleted dynamically.

---

### 2 Access to the object

The individual **FormField** objects can be accessed solely through enumerating the elements of the **ListEntries** collection. Each drop-down list has exactly one instance of this collection.

An example:

' Show an entry from the first form field in the document (a drop-down list)  
MsgBox tm.ActiveDocument.FormFields(1).DropDown.ListEntries.Item(1).Name

---

### 3 Properties, objects, collections, and methods

**Properties:**
- **Name** (default property)

**Objects:**
- `Application` ➔ **Application**
- `Parent` ➔ **ListEntries**

**Methods:**
- **Delete**

---

**Name (property)**

Data type: **String**

Gets or sets the content of the **ListEntry** object – in other words: the content of the respective list entry.

Examples:
' Show the first list entry
MsgBox tm.ActiveDocument.FormFields(1).DropDown.ListEntries.Item(1).Name

' Set a new value for the first list entry
tm.ActiveDocument.FormFields(1).DropDown.ListEntries.Item(1).Name = "Green"

Hint: You can use this method to replace the text only in *already existing* list entries. If you want to add *new* entries to the list, use the method `Add` from the `ListEntries` collection.

**Application (pointer to object)**

Data type: `Object`

Returns the `Application` object.

**Parent (pointer to object)**

Data type: `Object`

Returns the parent object, i.e. an object of the type `ListEntries`.

**Delete (method)**

Deletes the `ListEntry` object from the parent `ListEntries` collection.

Syntax:
```
Delete
```

Parameters:
- none

Return type:
- none

Example:

' Delete the first list entry
tm.ActiveDocument.FormFields(1).DropDown.ListEntries.Item(1).Delete

**Windows (collection)**

Access path: `Application` ➔ `Windows`
Description

The **Windows** collection contains all open document windows. The individual elements of this collection are of the type **Window**.

Access to the collection

There is exactly one instance of the **Windows** collection during the whole runtime of TextMaker. It is accessed through the **Application.Windows** object:

```
' Show the number of open document windows
MsgBox tm.Application.Windows.Count

' Show the name of the first open document window
MsgBox tm.Application.Windows(1).Name
```

Properties, objects, collections, and methods

**Properties:**
- **Count** R/O

**Objects:**
- **Item** → **Window** (default object)
- **Application** → **Application**
- **Parent** → **Application**

**Count (property, R/O)**

Data type: **Long**

Returns the number of **Window** objects in TextMaker – in other words: the number of open document windows

**Item (pointer to object)**

Data type: **Object**

Returns an individual **Window** object, ie an individual document window

*Which Window object you get depends on the parameter that you pass to **Item**. You can specify either the numeric index or the name of the desired document window. Examples:*

```
' Show the name of the first document window
MsgBox tm.Application.Windows.Item(1).FullName

' Show the name of the document window "Test.tmd" (if opened)
MsgBox tm.Application.Windows.Item("Test.tmd").FullName

' You can also use the full name with path
MsgBox tm.Application.Windows.Item("c:\Documents\Test.tmd").FullName
```
Application (pointer to object)

Data type: Object

Returns the Application object

Parent (pointer to object)

Data type: Object

Returns the parent object, i.e. Application

Window (object)

Access paths:
- Application → Windows → Item
- Application → ActiveWindow
- Application → Documents → Item → ActiveWindow
- Application → ActiveDocument → ActiveWindow

1 Description

A Window object represents one individual document window that is currently open in TextMaker.

For each document window there is its own Window object. If you open or close document windows, the respective Window objects will be created or deleted dynamically.

2 Access to the object

The individual Window objects can be accessed in any of the following ways:

- All document windows that are open at a time are listed in the collection Application.Windows (type: Windows):
  ```vba
  ' Show the names of all open document windows
  For i = 1 To tm.Application.Windows.Count
    MsgBox tm.Application.Windows.Item(i).Name
  Next i
  ```

- You can access the currently active document window through Application.ActiveWindow:
  ```vba
  ' Show the name of the active document window
  MsgBox tm.Application.ActiveWindow.Name
  ```

- Window is the Parent object of the View object:
Show the name of the active document in an indirect way:

The object Document contains an object pointer to the respective document window:

Access the active document window through the active document:
MsgBox tm.Application.ActiveDocument.ActiveWindow.Name

### Properties, objects, collections, and methods

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<td>Close</td>
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<tr>
<td>DisplayHorizontalScrollBar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DisplayVerticalScrollBar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FullName (property, R/O)**

Data type: String

Returns the path and file name of the document opened in the window (e.g., "c:\Letters\Smith.tmd").

**Name (property, R/O)**

Data type: String

Returns the file name of the document opened in the window (e.g., Smith.tmd).
**Path (property, R/O)**

Data type: **String**

Returns the path of the document opened in the window (e.g., c:\Letters).

**Left (property)**

Data type: **Long**

Gets or sets the horizontal position of the window, measured in screen pixels.

**Top (property)**

Data type: **Long**

Gets or sets the vertical position of the window, measured in screen pixels.

**Width (property)**

Data type: **Long**

Gets or sets the width of the window, measured in screen pixels.

**Height (property)**

Data type: **Long**

Gets or sets the height of the window, measured in screen pixels.

**WindowState (property)**

Data type: **Long** (SmoWindowState)

Gets or sets the state of the document window. The possible values are:

- `smoWindowStateNormal` = 1 ' normal
- `smoWindowStateMinimize` = 2 ' minimized
- `smoWindowStateMaximize` = 3 ' maximized

**DisplayHorizontalRuler (property)**

Data type: **Boolean**

Gets or sets the setting whether a horizontal ruler should be shown in the document window (True or False).
### DisplayVerticalRuler (property)

Data type: **Boolean**

Gets or sets the setting whether a vertical ruler should be shown in the document window (*True* or *False*).

### DisplayRulers (property)

Data type: **Boolean**

Gets or sets the setting whether both horizontal and vertical rulers should be shown in the document window (*True* or *False*).

### DisplayHorizontalScrollBar (property)

Data type: **Boolean**

Gets or sets the setting whether a horizontal scroll bar should be shown in the document window (*True* or *False*).

### DisplayVerticalScrollBar (property)

Data type: **Boolean**

Gets or sets the setting whether a vertical scroll bar should be shown in the document window (*True* or *False*).

### Document (pointer to object)

Data type: **Object**

Returns the **Document** object assigned to this document window. You can use it to get and set various settings for your document.

### View (pointer to object)

Data type: **Object**

Returns the **View** object of the document window. You can use it to get and set various settings for the presentation on screen.

### Application (pointer to object)

Data type: **Object**

Returns the **Application** object.
### Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. an object of the type **Windows**.

### Activate (method)

Brings the document window to the foreground (if the property **Visible** for this document is **True**) and sets the focus to it.

**Syntax:**

```plaintext
Activate
```

**Parameters:**

- **none**

**Return type:**

- **none**

**Example:**

```plaintext
' Activate the first document window
tm.Windows(1).Activate
```

### Close (method)

Closes the document window.

**Syntax:**

```plaintext
Close [SaveChanges]
```

**Parameters:**

- **SaveChanges** (optional; type: **Long** or **SmoSaveOptions**) indicates whether the document opened in the window should be saved or not (if it was changed since last save). If you omit this parameter, the user will be asked to decide on it. The possible values for the parameter **SaveChanges** are:

  - smoDoNotSaveChanges = 0 ` ' Don't ask, don't save
  - smoPromptToSaveChanges = 1 ` ' Ask the user
  - smoSaveChanges = 2 ` ' Save without asking

**Return type:**

- **none**

**Example:**

```plaintext
' Close the active window without saving it
tm.ActiveWindow.Close smoDoNotSaveChanges
```
**View (object)**

Access paths:
- Application → Windows → Item → View
- Application → ActiveWindow → View
- Application → Documents → Item → ActiveWindow → View
- Application → ActiveDocument → ActiveWindow → View

1 **Description**

The View object contains the various settings for the presentation on screen. It is a child object of the Window object.

Hint: The presentation settings provided by the View object are *document window specific* – i.e., each document window has its own settings. The *common* settings (valid for all documents) can be found in the objects Application and Options.

2 **Access to the object**

Each document window has exactly one instance of the View object. It is accessed through the object pointer View in the Window object:

```plaintext
' Show all special characters (tabs etc.) in the active window
tm.ActiveWindow.View.ShowAll = True
```

3 **Properties, objects, collections, and methods**

Properties:
- Type
- Mode
- FieldShading
- HighlightComments
- RevisionsBalloonSide
- RevisionsBalloonWidth
- CommentsPaneAutoShow
- ShowHiddenText
- PrintHiddenText
- ShowParagraphs
- ShowSpaces
- ShowTabs
- ShowAll
- ShowBookmarks
- ShowTextBoundaries
- WrapToWindow

Objects:
Type (property)

Data type: Long (TmViewType)

 Gets or sets the view type of the document window. The possible values are:

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmPrintView</td>
<td>View &gt; Normal</td>
</tr>
<tr>
<td>tmMasterView</td>
<td>View &gt; Master Pages</td>
</tr>
<tr>
<td>tmNormalView</td>
<td>View &gt; Continuous</td>
</tr>
<tr>
<td>tmOutlineView</td>
<td>View &gt; Outline</td>
</tr>
</tbody>
</table>

Mode (property)

Data type: Long (TmViewMode)

 Gets or sets the view mode of the document window. The possible values are:

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmViewModeText</td>
<td>Editing mode</td>
</tr>
<tr>
<td>tmViewModeObject</td>
<td>Object mode</td>
</tr>
</tbody>
</table>

If you set this property to tmViewModeObject while the view type of the document window (see above) is tmNormalView (View > Continuous menu command) or tmOutlineView (View > Outline menu command), TextMaker automatically switches to the value tmPrintView, because object mode is not available in the above-mentioned view types.

FieldShading (property)

Data type: Long (TmFieldShading)

 Gets or sets the property "Shade fields" in the dialog box of TextMaker's File > Properties > View menu command. The possible values are:

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmFieldShadingNever</td>
<td>Do not shade fields in gray</td>
</tr>
<tr>
<td>tmFieldShadingAlways</td>
<td>Shade fields in gray</td>
</tr>
</tbody>
</table>

HighlightComments (property)

Data type: Boolean

 Gets or sets the property of the document window whether comments in the document are color-highlighted (True or False).

RevisionsBalloonSide (property)

Data type: Long (TmRevisionsBalloonMargin)
Gets or sets the position where comments appear inside the document window. The possible values are:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmRightMargin</td>
<td>0</td>
</tr>
<tr>
<td>tmLeftMargin</td>
<td>1</td>
</tr>
<tr>
<td>tmOuterMargin</td>
<td>2</td>
</tr>
<tr>
<td>tmInnerMargin</td>
<td>3</td>
</tr>
</tbody>
</table>

**RevisionsBalloonWidth (property)**

Data type: **Long**

Gets or sets the width of the comment field in the document window, measured in points (1 point corresponds to 1/72 inches).

**CommentsPaneAutoShow (property)**

Data type: **Boolean**

Gets or sets the setting of the document window whether the comment field should be automatically shown (**True** or **False**).

**ShowHiddenText (property)**

Data type: **Boolean**

Gets or sets the setting of the document window whether hidden text should be shown or not (**True** or **False**).

**PrintHiddenText (property)**

Data type: **Boolean**

Gets or sets the setting of the document window whether hidden text should be printed or not (**True** or **False**).

**ShowParagraphs (property)**

Data type: **Boolean**

Gets or sets the setting of the document window whether paragraph end marks (¶) should be shown or not (**True** or **False**).

**ShowSpaces (property)**

Data type: **Boolean**

Gets or sets the setting of the document window whether space characters should be displayed with a small point (·) or not (**True** or **False**).
<table>
<thead>
<tr>
<th>Property Name</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ShowTabs (property)</strong></td>
<td>Boolean</td>
<td>Gets or sets the setting of the document window whether tab stops should be displayed with an arrow (→) or not (True or False).</td>
</tr>
<tr>
<td><strong>ShowAll (property)</strong></td>
<td>Boolean</td>
<td>Gets or sets the setting of the document window whether all unprintable characters (paragraph signs, tab stops, space characters) should be displayed or not (True or False).</td>
</tr>
<tr>
<td><strong>ShowBookmarks (property)</strong></td>
<td>Boolean</td>
<td>Gets or sets the setting of the document window whether bookmarks should be shown or not (True or False).</td>
</tr>
<tr>
<td><strong>ShowTextBoundaries (property)</strong></td>
<td>Boolean</td>
<td>Gets or sets the setting of the document whether the page borders should be displayed as dotted lines or not (True or False).</td>
</tr>
<tr>
<td><strong>WrapToWindow (property)</strong></td>
<td>Boolean</td>
<td>Gets or sets the setting of the document window whether the text should be wrapped at the window border or not (True or False).</td>
</tr>
<tr>
<td><strong>Zoom (pointer to object)</strong></td>
<td>Object</td>
<td>Returns the Zoom object which contains the zoom level setting of the document window</td>
</tr>
<tr>
<td><strong>Application (pointer to object)</strong></td>
<td>Object</td>
<td>Returns the Application object</td>
</tr>
</tbody>
</table>
**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **Window**.

---

**Zoom (object)**

Access paths:
- `Application → Windows → Item → View → Zoom`
- `Application → ActiveWindow → View → Zoom`
- `Application → Documents → Item → ActiveWindow → View → Zoom`
- `Application → ActiveDocument → ActiveWindow → View → Zoom`

---

1 **Description**

The **Zoom** object contains the settings for the zoom level of a document window. It is a child object of the **View** object.

---

2 **Access to the object**

Each document window has exactly one instance of the **View** object and it has in turn exactly one instance of the **Zoom** object. The latter is accessed through the object pointer **Zoom** in the **View** object:

```vbnet
' Zoom the document window to 140%
tm.ActiveWindow.View.Zoom.Percentage = 140
```

---

3 **Properties, objects, collections, and methods**

Properties:
- **Percentage**

Objects:
- `Application → Application`
- `Parent → View`

---

**Percentage (property)**

Data type: **Long**

Gets or sets the zoom level of the document window, expressed in percent.

Example:
Zoom the document window to 140% 
\texttt{tm.ActiveWindow.View.Zoom.Percenage = 140}

**Application (pointer to object)**

Data type: Object

Returns the \texttt{Application} object

**Parent (pointer to object)**

Data type: Object

Returns the parent object, i.e. an object of the type \texttt{View}

### RecentFiles (collection)

Access path: \texttt{Application} \rightarrow \texttt{RecentFiles}

#### Description

**RecentFiles** is a collection of all recently opened files listed in the \texttt{File} menu. The individual elements of this collection are of the type **RecentFile**

#### Access to the collection

There is exactly one instance of the \texttt{RecentFiles} collection during the whole runtime of TextMaker. It is accessed directly through the \texttt{Application.RecentFiles} object:

\begin{verbatim}
' Show the name of the first recent file in the File menu
MsgBox tm.Application.RecentFiles.Item(1).Name

' Open the first recent file in the File menu
tm.Application.RecentFiles.Item(1).Open
\end{verbatim}

#### Properties, objects, collections, and methods

**Properties:**
- Count R/O
- Maximum

**Objects:**
- \texttt{Item} \rightarrow **RecentFile** (default object)
- \texttt{Application} \rightarrow **Application**
Parent → **Application**

Methods:

- **Add**

---

### Count (property, R/O)

**Data type:** Long

Returns the number of **RecentFile** objects in TextMaker – in other words: the number of the recently opened files listed in the File menu.

---

### Maximum (property, R/O)

**Data type:** Long

Gets or sets the setting "Recently used files in File menu" – in other words: how many recently opened files are displayed in the File menu.

The value may be between 0 and 9.

---

### Item (pointer to object)

**Data type:** Object

Returns an individual **RecentFile** object, i.e. one individual file entry in the File menu.

Which RecentFile object you get depends on the numeric value that you pass to **Item**: 1 for the first of the recently opened files, 2 for the second, etc.

---

### Application (pointer to object)

**Data type:** Object

Returns the **Application** object

---

### Parent (pointer to object)

**Data type:** Object

Returns the parent object, i.e. **Application**

---

### Add (method)

Adds a document to the list of recently opened files.

**Syntax:**

```
Add Document, [FileFormat]
```

**Parameters:**
**Document** is a string containing the file path and name of the document to be added.

**FileFormat** (optional; type: **Long** or **TmSaveFormat**) specifies the file format of the document to be added. The possible values are:

- `tmFormatDocument` = 0 ' TextMaker document
- `tmFormatTemplate` = 1 ' TextMaker document template
- `tmFormatWinWord97` = 2 ' Microsoft Word 97 and 2000
- `tmFormatRTF` = 4 ' Rich Text Format
- `tmFormatPocketWordPPC` = 5 ' Pocket Word for Pocket PCs
- `tmFormatPocketWordHPC` = 6 ' Pocket Word for Handheld PCs (Windows CE)
- `tmFormatPlainTextAnsi` = 7 ' Text file with Windows character set
- `tmFormatPlainTextDOS` = 8 ' Text file with DOS character set
- `tmFormatPlainTextUnicode` = 9 ' Text file with Unicode character set
- `tmFormatPlainTextUTF8` = 10 ' Text file with UTF8 character set
- `tmFormatHTML` = 12 ' HTML document
- `tmFormatWinWord6` = 13 ' Microsoft Word 6.0
- `tmFormatPlainTextUnix` = 14 ' Text file for UNIX, Linux, FreeBSD
- `tmFormatWinWordXP` = 15 ' Microsoft Word XP and 2003
- `tmFormatTM2006` = 16 ' TextMaker 2006 document
- `tmFormatOpenXML` = 17 ' Microsoft Word 2007 and later
- `tmFormatWinWordXPTemplate` = 23 ' Microsoft Word document template XP and 2003
- `tmFormatTM2012` = 27 ' TextMaker 2012 document
- `tmFormatTM2016` = 28 ' TextMaker 2016 document
- `tmFormatTM2016Template` = 29 ' TextMaker 2016 document template

If you omit this parameter, the value `tmFormatDocument` will be taken.

Tip: Independent of the value for the **FileFormat** parameter TextMaker always tries to determine the file format by itself and ignores evidently false inputs.

**Return type:**

**Object** (a **RecentFile** object which represents the document to be added)

**Example:**

```vba
' Add the file Test.rtf to the File menu
tm.Application.RecentFiles.Add "Test.rtf", tmFormatRTF

' Do the same, but evaluate the return value (mind the brackets!) Dim fileObj as Object
Set fileObj = tm.Application.RecentFiles.Add("Test.rtf", tmFormatRTF)
MsgBox fileObj.Name
```

---

**RecentFile (object)**

Access path: **Application** → **RecentFiles** → **Item**
1 **Description**

A **RecentFile** object represents one individual of the recently opened files. You can use it to retrieve the properties of such a file and to open it again.

For each recently opened file there is its own **RecentFile** object. For each document that you open or close, the list of these files in the File menu will change accordingly – i.e., the respective **RecentFile** objects will be created or deleted dynamically.

2 **Access to the object**

The individual **RecentFile** objects can be accessed solely through enumerating the elements of the **RecentFiles** collection. It can be accessed through the **Application.RecentFiles** object:

```
' Show the name of the first file in the File menu
MsgBox tm.Application.RecentFiles.Item(1).Name
```

3 **Properties, objects, collections, and methods**

Properties:
- **FullName** R/O
- **Name** R/O (default property)
- **Path** R/O

Objects:
- **Application** → **Application**
- **Parent** → **RecentFiles**

Methods:
- **Open**

**FullName (property, R/O)**

Data type: **String**

Returns the path and name of the document in the File menu (e.g., "c:\Letters\Smith.tmd").

**Name (property, R/O)**

Data type: **String**

Returns the name of the document (e.g., Smith.tmd).

**Path (property, R/O)**

Data type: **String**
BasicMaker and TextMaker

Returns the path of the document (e.g., c:\Letters).

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**

**Open (method)**

Opens the appropriate document and returns the **Document** object for it

Syntax:

```
Open
```

Parameters:

none

Return type:

**Document**

Example:

```
' Open the first document displayed in the File menu
tm.Application.RecentFiles(1).Open
```

**FontNames (collection)**

Access path: **Application** → **FontNames**

**Description**

**FontNames** is a collection of all fonts installed in Windows. The individual elements of this collection are of the type **FontName**
2 Access to the collection

There is exactly one instance of the **FontNames** collection during the whole runtime of TextMaker. It is accessed through the **Application.FontNames** object:

```vbscript
' Display the name of the first installed font
MsgBox tm.Application.FontNames.Item(1).Name

' The same, but shorter, omitting the default properties:
MsgBox tm.FontNames(1)
```

3 Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → **FontName** (default object)
- **Application** → **Application**
- **Parent** → **Application**

Count (property. R/O)

Data type: **Long**

Returns the number of **FontName** objects – in other words: the number of fonts installed in Windows.

Item (pointer to object)

Data type: **Object**

Returns an individual **FontName** object, ie an individual installed font

Which FontName object you get depends on the numeric value that you pass to **Item**: 1 for the first installed font, 2 for the second, etc.

Application (pointer to object)

Data type: **Object**

Returns the **Application** object

Parent (pointer to object)

Returns the parent object, i.e. **Application**
FontName (object)

Access path: Application → FontNames → Item

1 Description

A FontName object represents one individual of the fonts installed in Windows. For each installed font there is its own FontName object.

2 Access to the object

The individual FontName objects can be accessed solely through enumerating the elements of the FontNames collection It can be accessed through the ApplicationFontNames object:

```vbnet
' Display the name of the first installed font MsgBox tm.Application.FontNames.Item(1).Name
' The same, but shorter, omitting the default properties: MsgBox tm.FontNames(1)
```

3 Properties, objects, collections, and methods

Properties:
- Name R/O (default property)
- Charset

Objects:
- Application → Application
- Parent → FontNames

Name (property, R/O)

Data type: String

Returns the name of the respective font.

Charset (property, R/O)

Data type: Long (SmoCharset)

Returns the character set of the respective font. The possible values are:

```vbnet
comboAnsiCharset = 0 ' normal character set
comboSymbolCharset = 2 ' symbol character set
```
<table>
<thead>
<tr>
<th><strong>Application (pointer to object)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: <strong>Object</strong></td>
</tr>
<tr>
<td>Returns the <strong>Application</strong> object</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Parent (pointer to object)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data type: <strong>Object</strong></td>
</tr>
<tr>
<td>Returns the parent object, i.e. <strong>FontNames</strong></td>
</tr>
</tbody>
</table>
BasicMaker and PlanMaker

You can use BasicMaker to program the spreadsheet application PlanMaker in the same way that you can program TextMaker. This chapter contains all the information about programming PlanMaker. It is structured as follows:

- **Programming PlanMaker**
  
  This section contains all the basic information required to program PlanMaker with BasicMaker.

- **PlanMaker's object model**
  
  This chapter describes all objects exposed by PlanMaker for programming.

Programming PlanMaker

Programming the word processor *TextMaker* and the spreadsheet *PlanMaker* is practically identical. The only difference is that some keywords have different names (for example PlanMaker.Application instead of TextMaker.Application). If you have already worked through the section *Programming TextMaker* you will notice that the section you are currently reading is almost identical to it.

Naturally, the objects exposed by PlanMaker are different from those of TextMaker. A list of all objects exposed can be found in the next section *PlanMaker's object model*.

To program PlanMaker with BasicMaker, you mainly use *OLE Automation commands*. General information on this subject can be found in section *OLE Automation*.

Follow this schematic outline (details follow subsequently):

1. Declare a variable of type **Object**:
   
   ```vbnet
   Dim pm as Object
   ```

2. Make a connection to PlanMaker via OLE Automation (PlanMaker will be launched automatically if it is not already running):
   
   ```vbnet
   Set pm = CreateObject("PlanMaker.Application")
   ```

3. Set the property **Application.Visible** to **True** so that PlanMaker becomes visible:
   
   ```vbnet
   pm.Application.Visible = True
   ```

4. Now you can program PlanMaker by reading and writing its "properties" and by invoking the "methods" it provides.

5. As soon as the PlanMaker object is not required anymore, you should cut the connection to PlanMaker:
   
   ```vbnet
   Set pm = Nothing
   ```
That was just a quick rundown of the necessary steps. More detailed information on programming PlanMaker follows on the next pages. A list of all PlanMaker objects and their respective properties and methods can be found in the section PlanMaker's object model.

---

**Connecting to PlanMaker**

In order to control PlanMaker from BasicMaker, you first need to connect to PlanMaker via OLE Automation. For this, first declare a variable of type **Object**, then assign to it the object "PlanMaker.Application" through use of the **CreateObject** function.

```vba
Dim pm as Object
Set pm = CreateObject("PlanMaker.Application")
```

If PlanMaker is already running, this function simply connects to PlanMaker; if not, then PlanMaker will be started beforehand.

The object variable "pm" now contains a reference to PlanMaker.

**Important: Making PlanMaker visible**

*Please note:* If you start PlanMaker in the way just described, its application window will be *invisible* by default. In order to make it visible, you must set the property **Visible** to True.

The complete chain of commands should therefore be as follows:

```vba
Dim pm as Object
Set pm = CreateObject("PlanMaker.Application")
pm.Application.Visible = True
```

**The "Application" object**

The *fundamental* object that PlanMaker exposes for programming is **Application**. All other objects – such as collections of open documents and windows – are attached to the **Application** object.

The **Application** object contains not only its own properties (such as **Application.Left** for the x coordinate of the application window) and methods (such as **Application.Quit** for exiting from PlanMaker), but also contains pointers to other objects, for example **Application.Options**, that in turn have their own properties and methods, and pointers to collections such as **Workbooks** (the collection of all currently open documents).

**Notations**

As mentioned in the previous section, you need to use dot notation as usual with OLE Automation to access the provided properties, methods etc.

For example, **Application.Left** lets you address the **Left** property of the **Application** object. **Application.Documents.Add** references the **Add** method of the **Documents** collection which in turn is a member of **Application**.
Getting and setting PlanMaker properties

As soon as a connection with PlanMaker has been made, you can "control" the application. For this, properties and methods are provided – this has already been discussed in the section OLE Automation.

Let's first talk about properties. Properties are options and settings that can be retrieved and sometimes modified.

For example, if you wish to retrieve PlanMaker's application name, you can use the Name property of the Application object:

```vba
MsgBox "The name of this application is " & pm.Application.Name
```

Application.Name is a property that can only be read, but not written to. Other properties can be both retrieved and changed from BasicMaker scripts. For example, the coordinates of the PlanMaker application window are stored in the properties Left, Top, Width, and Height. You can retrieve them as follows:

```vba
MsgBox "The left window position is at: " & pm.Application.Left
```

But you can also change the content of this property:

```vba
pm.Application.Left = 200
```

PlanMaker reacts immediately and moves the left border of the application window to the screen position 200. You can also mix reading and changing the values of properties, as in the following example:

```vba
pm.Application.Left = pm.Application.Left + 100
```

Here, the current left border value is retrieved, increased by 100 and set as the new value for the left border. This will instruct PlanMaker to move its left window position 100 pixels to the right.

There is a large number of properties in the Application object. A list of them can be found in the section PlanMaker's object model.

Using PlanMaker's methods

In addition to properties, methods exist, and they implement commands that direct PlanMaker to execute a specific action.

For example, Application.Quit instructs PlanMaker to stop running, and Application.Activate lets you force PlanMaker to bring its application window to the foreground (if it's covered by windows from other applications):

```vba
pm.Application.Activate
```
Function methods and procedure methods

There are two types of methods: those that return a value to the BASIC program and those that do not. The former are called (in the style of other programming languages) "function methods" or simply "functions", the latter "procedure methods" or simply "procedures".

This distinction may sound a bit picky to you, but it is not because it effects on the notation of instructions.

As long as you call a method without parameters, there is no syntactical difference:

Call as procedure:

```basic
pm.Workbooks.Add ' Add a document to the collection of open documents
```

Call as function:

```basic
Dim newDoc as Object
Set newDoc = pm.Workbooks.Add ' The same (returning an object this time)
```

As soon as you access methods with parameters, you need to employ two different styles:

Call as procedure:

```basic
pm.Application.RecentFiles.Add "Test.pmd"
```

Call as function:

```basic
Dim x as Object
Set x = pm.Application.RecentFiles.Add("Test.pmd") ' now with a return value
```

As you can see, if you call the method as a procedure, you may not surround the parameters with parentheses. If you call it as a function, you must surround them with parentheses.

Using pointers to other objects

A third group of members of the Application object are pointers to other objects.

This may first sound a bit abstract at first, but is actually quite simple: It would clutter the Application object if all properties and methods of PlanMaker were attached directly to the Application method. To prevent this, groups of related properties and methods have been parcelled out and placed into objects of their own. For example, PlanMaker has an Options object that lets you read out and modify many fundamental program settings:

```basic
pm.Application.Options.CreateBackup = True
MsgBox "Overwrite mode activated? " & pm.Application.Options.Overtype
```

Using collections

The fourth group of members of the Application object are pointers to collections.
Collections are, as their name indicates, lists of objects belonging together. For example, there is a collection called `Application.Workbooks` that contains all open documents and a collection called `Application.RecentFiles` with all files that are listed in the history section of the File menu.

There are two standardized ways of accessing collections, and PlanMaker supports both of them. The more simple way is through the `Item` property that is part of every collection:

```vba
' Display the name of the first open document:
MsgBox pm.Application.Workbooks.Item(1).Name

' Close the (open) document "Test.tmd":
pm.Application.Workbooks.Item("Test.pmd").Close
```

If you wish to list all open documents, for example, first find out the number of open documents through the standardized `Count` property, then access the objects one by one:

```vba
' Return the names of all open documents:
For i=1 To pm.Application.Workbooks.Count   MsgBox pm.Application.Workbooks.Item(i).Name
Next i
```

Every collection contains, by definition, the `Count` property which lets you retrieve the number of entries in the collection, and the `Item` property that lets you directly access one entry.

`Item` always accepts the number of the desired entry as an argument. Where it makes sense, it is also possible to pass other arguments to it, for example file names. You have seen this already above, when we passed both a number and a file name to `Item`. For most collections, there is matching object type for their individual entries. The collection `Windows`, for example, has individual entries of type `Window` – note the use of the singular! One entry of the `Workbooks` collection is called `Workbook`, and an entry of the `RecentFiles` collection has the object type `RecentFile`.

### A more elegant approach to collections: For Each ... Next

There is a more elegant way to access all entries in a collection consecutively: BasicMaker also supports the `For Each` instruction:

```vba
' Display the names of all open documents
Dim x As Object
For Each x In pm.Application.Workbooks   MsgBox x.Name
Next x
```

This gives the same results as the method previously described:

```vba
For i=1 To pm.Application.Workbooks.Count   MsgBox pm.Application.Workbooks.Item(i).Name
Next i
```

### Collections may have their own properties and methods

Some collections may have their own properties and methods, in addition to the standard members `Item` and `Count`. For example, if you wish to create an empty document in PlanMaker, this is achieved by adding a new entry to its `Workbooks` collection:

```vba
pm.Application.Workbooks.Add   ' leeres Dokument anlegen
```
Hints for simplifying notations

If you are beginning to wonder whether so much typing is really necessary to address a single document, we can reassure you that it's not! There are several ways to reduce the amount of typing required.

Using with instructions

The first shortcut is to use the With instruction when addressing several members of the same object.

First, the conventional style:

```
pm.Application.Left = 100
pm.Application.Top = 50
pm.Application.Width = 500
pm.Application.Height = 300
msgbox pm.Application.Options.CreateBackup
```

This code looks much clearer through use of the With instruction:

```
With pm.Application
  .Left = 100
  .Top = 50
  .Width = 500
  .Height = 300
  msgbox .Options.CreateBackup
End With
```

Omitting default properties

There is yet another way to reduce the amount of typing required: Each object (for example, Application or Application.Workbooks) has one of its properties marked as its default property. Conveniently enough, you can always leave out default properties. The default property of Application, for example, is Name. Therefore, the two following instructions are equivalent:

```
MsgBox pm.Application.Name  ' Display the application name of PlanMaker
MsgBox pm.Application        ' Does exactly the same
```

Typically, the property that is used most often in an object has been designated its default property. For example, the most used property of a collection surely is the Item property, as the most common use of collections is to return one of their members. The following instructions therefore are equivalent:

```
MsgBox pm.Application.Workbooks.Item(1).Name
MsgBox pm.Application.Workbooks(1).Name
```

Finally things are getting easier again! But it gets even better: Name is the default property of a single Workbook object (note: "Workbook", not "Workbooks"!). Each Item of the Workbook collection is of the Workbook type. As Name is the default property of Workbook, it can be omitted:

```
MsgBox pm.Application.Workbooks(1)
Not easy enough yet? OK... **Application** is the default property of PlanMaker. So, let's just leave out **Application** as well! The result:

```
MsgBox pm.Workbooks(1)
```

This basic knowledge should have prepared you to understand PlanMaker's object model. You can now continue with the next section that contains a detailed list of all objects that PlanMaker provides.

---

**PlanMaker's object model**

PlanMaker provides BasicMaker (and all other OLE Automation compatible programming languages) with the objects listed below.

**Notes:**

- The properties marked with "R/O" are "Read Only" (i.e. write-protected). They can be read, but not changed.
- The default property of an object is marked in italics.

The following table lists all objects and collections available in PlanMaker:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application</strong></td>
<td>Object</td>
<td>&quot;Root object&quot; of PlanMaker</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>Object</td>
<td>Global options</td>
</tr>
<tr>
<td><strong>UserProperties</strong></td>
<td>Collection</td>
<td>Collection of all parts of the user's private and business address</td>
</tr>
<tr>
<td><strong>UserProperty</strong></td>
<td>Object</td>
<td>An individual part of the user's address</td>
</tr>
<tr>
<td><strong>CommandBars</strong></td>
<td>Collection</td>
<td>Collection of all toolbars</td>
</tr>
<tr>
<td><strong>CommandBar</strong></td>
<td>Object</td>
<td>An individual toolbar</td>
</tr>
<tr>
<td><strong>AutoCorrect</strong></td>
<td>Object</td>
<td>Automatic text correction and SmartText</td>
</tr>
<tr>
<td><strong>AutoCorrectEntries</strong></td>
<td>Collection</td>
<td>Collection of all SmartText entries</td>
</tr>
<tr>
<td><strong>AutoCorrectEntry</strong></td>
<td>Object</td>
<td>An individual SmartText entry</td>
</tr>
<tr>
<td><strong>Workbooks</strong></td>
<td>Collection</td>
<td>Collection of all open documents</td>
</tr>
<tr>
<td><strong>Workbook</strong></td>
<td>Object</td>
<td>An individual open document</td>
</tr>
<tr>
<td><strong>DocumentProperties</strong></td>
<td>Collection</td>
<td>Collection of all document properties of a document</td>
</tr>
<tr>
<td><strong>DocumentProperty</strong></td>
<td>Object</td>
<td>An individual document property</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>Sheets</td>
<td>Collection</td>
<td>Collection of all spreadsheets of a document</td>
</tr>
<tr>
<td>Sheet</td>
<td>Object</td>
<td>An individual spreadsheet of a document</td>
</tr>
<tr>
<td>PageSetup</td>
<td>Object</td>
<td>The page settings of a spreadsheet</td>
</tr>
<tr>
<td>Range</td>
<td>Object</td>
<td>A range of cells in a spreadsheet</td>
</tr>
<tr>
<td>Rows</td>
<td>Collection</td>
<td>Collection of all rows in a spreadsheet or range</td>
</tr>
<tr>
<td>Columns</td>
<td>Collection</td>
<td>Collection of all columns in a spreadsheet or range</td>
</tr>
<tr>
<td>FormatConditions</td>
<td>Collection</td>
<td>Collection of all conditional formatings in a range</td>
</tr>
<tr>
<td>FormatCondition</td>
<td>Object</td>
<td>An individual conditional formatting in a range</td>
</tr>
<tr>
<td>NumberFormatting</td>
<td>Object</td>
<td>The number formatting of a range</td>
</tr>
<tr>
<td>Font</td>
<td>Object</td>
<td>The character formatting of a range or a conditional formatting</td>
</tr>
<tr>
<td>Borders</td>
<td>Collection</td>
<td>Collection of all border lines of a range or a conditional formatting</td>
</tr>
<tr>
<td>Border</td>
<td>Object</td>
<td>An individual border line</td>
</tr>
<tr>
<td>Shading</td>
<td>Object</td>
<td>The shading of a range or a conditional formatting</td>
</tr>
<tr>
<td>Validation</td>
<td>Object</td>
<td>The input validation settings of a range</td>
</tr>
<tr>
<td>AutoFilter</td>
<td>Object</td>
<td>The AutoFilter of a worksheet</td>
</tr>
<tr>
<td>Filters</td>
<td>Collection</td>
<td>Collection of all columns in an AutoFilter</td>
</tr>
<tr>
<td>Filter</td>
<td>Object</td>
<td>An individual column in an AutoFilter</td>
</tr>
<tr>
<td>Windows</td>
<td>Collection</td>
<td>Collection of all open document windows</td>
</tr>
<tr>
<td>Window</td>
<td>Object</td>
<td>An individual document window</td>
</tr>
<tr>
<td>RecentFiles</td>
<td>Collection</td>
<td>Collection of all recently opened files, as listed in the File menu</td>
</tr>
<tr>
<td>RecentFile</td>
<td>Object</td>
<td>An individual recently opened file</td>
</tr>
<tr>
<td>FontNames</td>
<td>Collection</td>
<td>Collection of all fonts installed</td>
</tr>
<tr>
<td>FontName</td>
<td>Object</td>
<td>An individual installed font</td>
</tr>
</tbody>
</table>

Detailed descriptions of all objects and collections follow on the next pages.
Application (object)

Access path: Application

1 Description

Application is the "root object" for all other objects in PlanMaker. It is the central control object that is used to carry out the whole communication between your Basic script and PlanMaker.

2 Access to the object

There is exactly one instance of the Application object during the whole runtime of PlanMaker. It is accessed directly through the object variable returned by the CreateObject function:

```vba
Set pm = CreateObject("PlanMaker.Application")
MsgBox pm.Application.Name
```

As Application is the default property of PlanMaker, it can generally be omitted:

```vba
Set pm = CreateObject("PlanMaker.Application")
MsgBox pm.Name ' has the same meaning as pm.Application.Name
```

3 Properties, objects, collections, and methods

Properties:
- **FullName** R/O
- **Name** R/O (default property)
- **Path** R/O
- **Build** R/O
- **Bits** R/O
- **Visible**
- **Caption** R/O
- **Left**
- **Top**
- **Width**
- **Height**
- **WindowState**
- **Calculation**
- **CalculateBeforeSave**
- **DisplayCommentIndicator**
- **EditDirectlyInCell**
- **MoveAfterReturn**
- **MoveAfterReturnDirection**
- **PromptForSummaryInfo**
- **WarningOnError**
Objects:
- Options → Options
- UserProperties → UserProperties
- CommandBars → CommandBars
- AutoCorrect → AutoCorrect
- ActiveWorkbook → Workbook
- ActiveSheet → Sheet
- ActiveWindow → Window
- ActiveCell → Range
- Selection → Range
- Range → Range
- Cells → Range
- Application → Application

Collections:
- Workbooks → Workbooks
- Windows → Windows
- RecentFiles → RecentFiles
- FontNames → FontNames
- Columns → Columns
- Rows → Rows

Methods:
- CentimetersToPoints
- MillimetersToPoints
- InchesToPoints
- PicasToPoints
- LinesToPoints
- Activate
- Calculate
- Quit

**FullName (property, R/O)**

Data type: String

Returns the name and path of the program (e.g. "C:\Program Files\SoftMaker Office\PlanMaker.exe").

**Name (property, R/O)**

Data type: String

Returns the name of the program (in this case "PlanMaker")

**Path (property, R/O)**

Data type: String

Returns the path of the program, for example "C:\Program Files\SoftMaker Office\".
**Build (property, R/O)**

Data type: **String**

Returns the build number of the program as a string, for example "582".

**Bits (property, R/O)**

Data type: **String**

Returns a string with the "bitness" of the program: "16" for the 16 bit version of PlanMaker and "32" for the 32 bit version.

**Visible (property)**

Data type: **Boolean**

Gets or sets the visibility of the program window:

```vba
    pm.Application.Visible = True  ' PlanMaker will be visible
    pm.Application.Visible = False ' PlanMaker will be invisible
```

*Important:* By default, **Visible** is set to **False** – thus, PlanMaker is initially invisible until you explicitly make it visible.

**Caption (property, R/O)**

Data type: **String**

Returns a string with the contents of the title bar of the program window (e.g. "PlanMaker - MyTable.pmd").

**Left (property)**

Data type: **Long**

Gets or sets the horizontal position (= left edge) of the program window on the screen, measured in screen pixels.

**Top (property)**

Data type: **Long**

Gets or sets the vertical position (= top edge) of the program window on the screen, measured in screen pixels.

**Width (property)**

Data type: **Long**
Gets or sets the width of the program window on the screen, measured in screen pixels.

**Height (property)**

Data type: **Long**

Gets or sets the height of the program window on the screen, measured in screen pixels.

**WindowState (property)**

Data type: **Long (SmoWindowState)**

Gets or sets the current state of the program window. The possible values are:

- **smoWindowStateNormal** = 1 ' normal
- **smoWindowStateMinimize** = 2 ' minimized
- **smoWindowStateMaximize** = 3 ' maximized

**Calculation (property)**

Data type: **Long (PmCalculation)**

Gets or sets the setting whether documents should be re-calculated automatically or manually. The possible values are:

- **pmCalculationAutomatic** = 0 ' Update calculations automatically
- **pmCalculationManual** = 1 ' Update calculations manually

Notes:

- PlanMaker allows you to apply this setting *per document*, whereas in Excel it is a global setting. This property is supported by PlanMaker only for compatibility reasons. It is recommended to use the identically named property **Calculation** in the **Workbook** object instead, as it allows you to change this setting for each document individually.
- If you retrieve this property while multiple documents are open where this setting has different values, the value **smoUndefined** will be returned.

**CalculateBeforeSave (property)**

Data type: **Boolean**

Gets or sets the setting whether documents should be re-calculated when it is saved.

Hints:

- This property has an effect only if calculations are set to be updated manually. If the **Calculation** property (see there) is set to **pmCalculationAutomatic**, all calculations will always be up-to-date anyway.
- PlanMaker allows you to apply this setting *per document*, whereas in Excel it is a global setting. This property is supported by PlanMaker only for compatibility reasons. It is recommended to use the identically
You are reading a page from a document titled "BasicMaker and PlanMaker," page 198. The text is discussing properties within the PlanMaker environment, specifically the `Workbook` object. It mentions the `CalculateBeforeSave` named property and its implications when working with multiple documents.

- **Named Property:** `CalculateBeforeSave` in the `Workbook` object allows changing this setting per document individually.
- If retrieved while multiple documents are open with differing settings, `smoUndefined` is returned.

**DisplayCommentIndicator (property)**

Data type: `Long` (PmCommentDisplayMode)

- `pmNoIndicator` = 0 'Show neither comments nor yellow triangle
- `pmCommentIndicatorOnly` = 1 'Show only a yellow triangle
- `pmCommentOnly` = 2 'Show comments, but no yellow triangle
- `pmCommentAndIndicator` = 3 'Show both comments and triangle

Hints:
- PlanMaker allows setting per document, while Excel has a global setting.
- PlanMaker is supported for compatibility reasons.
- If multiple documents are open with different settings, `smoUndefined` is returned.

**EditDirectlyInCell (property)**

Data type: `Boolean`

- Gets or sets whether cells can be edited directly in the spreadsheet.

**MoveAfterReturn (property)**

Data type: `Boolean`

- Gets or sets whether the cell frame moves to another cell after pressing Enter.
- If set to `True`, `MoveAfterReturnDirection` automatically moves down.
- Can use `MoveAfterReturnDirection` to choose another direction.

**MoveAfterReturnDirection (property)**

Data type: `Long` (PmDirection)

- Gets or sets the direction after pressing Enter.
- Possible values are:
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pmDown = 0 ' down
pmUp = 1 ' up
pmToRight = 2 ' right
pmToLeft = 3 ' left

**PromptForSummaryInfo (property)**

Data type: Boolean

Gets or sets the setting "Ask for summary info when saving" that you can find in the dialog box of PlanMaker's Tools > Options menu command, Files tab.

**WarningOnError (property)**

Data type: Boolean

Gets or sets the setting "Warning if a formula contains errors" that you can find in the dialog box of PlanMaker's Tools > Options menu command, Edit tab.

**Options (pointer to object)**

Data type: Object

Returns the Options object that you can use to access global program settings of PlanMaker

**UserProperties (pointer to object)**

Data type: Object

Returns the UserProperties object that you can use to access the names and addresses of the user (as entered in the dialog box of PlanMaker's Tools > Options menu command, General tab)

**CommandBars (pointer to object)**

Data type: Object

Returns the CommandBars object that you can use to access the toolbars of PlanMaker

**AutoCorrect (pointer to object)**

Data type: Object

Returns the AutoCorrect object that you can use to access the automatic correction settings of PlanMaker

**ActiveWorkbook (pointer to object)**

Data type: Object
Returns the currently active **Workbook** object that you can use to access the active document

**ActiveSheet (pointer to object)**

Data type: **Object**

Returns the currently active **Sheet** object that you can use to access the active worksheet of the active document  

**ActiveSheet** is an abbreviation for the **ActiveWorkbook**.**ActiveSheet**. The following both calls have the same meaning:

```
MsgBox pm.Application.ActiveWorkbook.ActiveSheet
MsgBox pm.Application.[ActiveSheet]
```

**ActiveWindow (pointer to object)**

Data type: **Object**

Returns the currently active **Window** object that you can use to access the active document window

**ActiveCell (pointer to object)**

Data type: **Object**

Returns a **Range** object that represents the active cell in the active document window  

You can use this object to retrieve and change the formatting and the contents of the cell

**ActiveCell** is an abbreviation for **ActiveWindow**.**ActiveCell**. The following both calls have the same meaning:

```
pm.Application.ActiveWindow.ActiveCell.Font.Size = 14
pm.Application.[ActiveCell].Font.Size = 14
```

Please note that **ActiveCell** always returns just **one individual cell** – even if a range of cells is selected in the worksheet. After all, selected cell ranges have exactly one active cell as well. You can see that when you select cells and then press the Enter key: a cell frame appears within to selection to indicate the active cell.

**Selection (pointer to object)**

Data type: **Object**

Returns a **Range** object that represents the selected cells in the active worksheet of the current document window

**Selection** is an abbreviation for **ActiveWorkbook**.**ActiveSheet**.**Selection**. The following both calls have the same meaning:

```
pm.Application.[Selection].Font.Size = 14
```
**Range (pointer to object)**

Data type: **Object**

Creates a **Range** object in the active worksheet of the current document and returns a pointer to it. You can use this object to access the cells in a cell range and, for example, get or set their values.

Syntax 1:

```
obj = Range(Cell1)
```

Syntax 2:

```
obj = Range(Cell1, Cell2)
```

Parameters:

- If Syntax 1 is used, **Cell1** (type: **String**) specifies the cell or cell range. (**Cell2** should be omitted.)
- If Syntax 2 is used, **Cell1** specifies the left top corner and **Cell2** the right bottom corner of the cell range.

**Cell2** (optional; type: **String**) should be used only if **Cell1** refers to an individual cell.

Examples for syntax 1:

- `Range("A1:B20")`' Cells A1 to B20
- `Range("A1")`' Only cell A1
- `Range("A:A")`' The whole column A
- `Range("3:3")`' The whole row 3
- `Range("Summer")`' Range labeled "Summer"

Example for syntax 2:

```
Range("A1", "B20")' Cells A1 to B20
```

**Range** is an abbreviation for **ActiveWorkbook.ActiveSheet.Range**. The following both calls have the same meaning:

```
pm.Application.Range("A1:B5").Value = 42
```

**Cells (pointer to object)**

Data type: **Object**

Returns a **Range** object that covers all cells of the current worksheet. This is useful for two applications:

- To apply an operation (e.g., formatting) to every cell in the entire worksheet:

```
' Colorize the whole active worksheet with red color
pm.Cells.Shading.ForegroundPatternColor = smoColorRed
```

- To address individual cells with loop variables instead of specifying the address as a string (such as, "B5" for the second column in the fifth row). To do this, use the **Item** property of the **Range** object that is addressed through the **Cells** pointer:

```
```
' Fill the first 5 * 10 cells of the active worksheet with 42
Dim row, col as Integer
For row = 1 To 5
    For col = 1 to 10
        pm.Cells.Item(row, col).Value = 42
    Next col
Next row

*Cells* is an abbreviation for *ActiveSheet.Cells*. The following both calls have the same meaning:

```vbnet
pm.Application.ActiveSheet.Cells(1, 1).Font.Size = 14
pm.Application.Cells(1, 1).Font.Size = 14
```

**Application (pointer to object)**

Data type: **Object**

Returns the *Application* object, i.e. the pointer to itself. This object pointer is basically superfluous and only provided for the sake of completeness.

**Workbooks (pointer to collection)**

Data type: **Object**

Returns the *Workbooks* collection, a collection of all currently opened documents

**Windows (pointer to collection)**

Data type: **Object**

Returns the *Windows* collection, a collection of all currently opened document windows

**RecentFiles (pointer to collection)**

Data type: **Object**

Returns the *RecentFiles* collection, a collection of the recently opened documents (as displayed at the bottom of PlanMaker's *File* menu)

**FontNames (pointer to collection)**

Data type: **Object**

Returns the *FontNames* collection, a collection of all installed fonts

**Columns (pointer to collection)**

Data type: **Object**
Returns the **Columns** collection, a collection of all columns in the active worksheet

*Columns* is an abbreviation for `ActiveWorkbook.ActiveSheet.Columns`. The following both calls have the same meaning:

```
MsgBox pm.Application.Columns.Count
```

**Rows (pointer to collection)**

Data type: **Object**

Returns the **Rows** collection, a collection of all rows in the active worksheet

*Rows* is an abbreviation for `ActiveWorkbook.ActiveSheet.Rows`. The following both calls have the same meaning:

```
MsgBox pm.Application.Rows.Count
```

**CentimetersToPoints (method)**

Converts the given value from centimeters (cm) to points (pt). This function is useful if you make calculations in centimeters, but a PlanMaker function accepts only points as its measurement unit.

Syntax:

```
CentimetersToPoints(Centimeters)
```

Parameters:

- **Centimeters** (type: **Single**) specifies the value to be converted.

Return value:

**Single**

Example:

```
' Set the top margin of the active worksheet to 3cm
```

**MillimetersToPoints (method)**

Converts the given value from millimeters (mm) to points (pt). This function is useful if you make calculations in millimeters, but a PlanMaker function accepts only points as its measurement unit.

Syntax:

```
MillimetersToPoints(Millimeters)
```

Parameters:

- **Millimeters** (type: **Single**) specifies the value to be converted.
Return value:

\[ \text{Single} \]

Example:

' Set the top margin of the active worksheet to 30mm
\[ \text{pm.ActiveSheet.PageSetup.TopMargin} = \text{pm.Application.MillimetersToPoints}(30) \]

**InchesToPoints (method)**

Converts the given value from inches (in) to points (pt). This function is useful if you make calculations in inches, but a PlanMaker function accepts only points as its measurement unit.

Syntax:

\[ \text{InchesToPoints}(\text{Inches}) \]

Parameters:

\[ \text{Inches} \text{ (type: Single)} \text{ specifies the value to be converted.} \]

Return value:

\[ \text{Single} \]

Example:

' Set the bottom margin of the active worksheet to 1 inch
\[ \text{pm.ActiveSheet.PageSetup.BottomMargin} = \text{pm.Application.InchesToPoints}(1) \]

**PicasToPoints (method)**

Converts the given value from picas to points (pt). This function is useful if you make calculations in picas, but a PlanMaker function accepts only points as its measurement unit.

Syntax:

\[ \text{PicasToPoints}(\text{Picas}) \]

Parameters:

\[ \text{Picas} \text{ (type: Single)} \text{ specifies the value to be converted.} \]

Return value:

\[ \text{Single} \]

Example:

' Set the bottom margin of the active worksheet to 6 picas
\[ \text{pm.ActiveSheet.PageSetup.BottomMargin} = \text{pm.Application.PicasToPoints}(6) \]
**LinesToPoints (method)**

Identical to the `PicasToPoints` method (see there).

Syntax:

```
LinesToPoints(Lines)
```

Parameters:

- `Lines` (type: `Single`) specifies the value to be converted.

Return value:

- `Single`

Example:

' Set the bottom margin of the active worksheet to 6 picas

```
```

**Activate (method)**

Brings the program window to the foreground and sets the focus to it.

Syntax:

```
Activate
```

Parameters:

- `none`

Return value:

- `none`

Example:

' Bring PlanMaker to the foreground

```
pm.Application.Activate
```

Hint: This command is only successful if `Application.Visible = True`.

**Calculate (method)**

Re-calculates all currently open documents (similar to the menu command `Tools > Recalculate` in PlanMaker, but the menu command re-calculates only the `active` workbook).

Syntax:

```
Calculate
```

Parameters:

- `none`
Return value:
none

Example:

' Re-calculate all open workbooks (documents)
  pm.Application.Calculate

**Quit (method)**

Ends the program.

Syntax:

```
  Quit
```

Parameters:

none

Return value:

none

Example:

' End PlanMaker
  pm.Application.Quit

If there are any unsaved documents open, the user will be asked if they should be saved. If you want to avoid this question, you need to either close all opened documents in your program or set the property `Saved` for the documents to `True` (see `Workbook`)

---

**Options (object)**

Access path: `Application` ➔ `Options`

1. **Description**

The `Options` object consolidates many global program settings, most of which can be found in the dialog box of the `Tools > Options` menu command in PlanMaker.

2. **Access to the object**

There is exactly one instance of the `Options` object during the whole runtime of PlanMaker. It is accessed through the `Application.Options` object:

```
Set pm = CreateObject("PlanMaker.Application")
```
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```python
pm.Application.Options.EnableSound = True
```

### Properties, objects, collections, and methods

**Properties:**
- `CheckSpellingAsYouType`
- `CreateBackup`
- `DefaultFilePath`
- `DefaultTemplatePath`
- `EnableSound`
- `Overtype`
- `SaveInterval`
- `SavePropertiesPrompt`

**Objects:**
- `Application` → `Application`
- `Parent` → `Application` (default object)

### CheckSpellingAsYouType (property)

Data type: `Boolean`

Gets or sets the setting "Background spell-checking" (True or False).

### CreateBackup (property)

Data type: `Boolean`

Gets or sets the setting "Create backup files" (True or False).

### DefaultFilePath (property)

Data type: `String`

Gets or sets the file path used by default to save and open documents.

This is just a temporary setting: When you execute the menu command **File > Open** or **File > Save As** the next time, the path chosen here will appear in the dialog box. If the user changes the path, this path will then be the new default file path.

### DefaultTemplatePath (property)

Data type: `String`

Gets or sets the file path used by default to store document templates.

This setting is saved permanently. Each call to the **File > New** menu command lets you see the document templates in the path given here.
**EnableSound (property)**

Data type: **Boolean**

Gets or sets the setting "Beep on errors" (**True** or **False**).

**OverType (property)**

Data type: **Boolean**

Gets or sets Overwrite/Insert mode (**True**=Overwrite, **False**=Insert).

**SaveInterval (property)**

Data type: **Long**

Gets or sets the setting "Autosave documents every n minutes" (0=off).

**SavePropertiesPrompt (property)**

Data type: **Boolean**

Gets or sets the setting "Prompt for summary information when saving" (**True** or **False**).

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**

**UserProperties (collection)**

Access path: **Application** ➔ **UserProperties**

**Description**

The **UserProperties** collection contains all components of the user's personal and business address (as entered in the dialog box of PlanMaker's **Tools** > **Options** menu command, **General** tab.).
The individual elements of this collection are of the type **UserProperty**

### Access to the collection

There is exactly one instance of the **UserProperties** collection during the whole runtime of PlanMaker. It is accessed through the **Application.UserProperties** object:

```vbnet
' Show the first UserProperty (the user's last name)
MsgBox pm.Application.UserProperties.Item(1).Value
```

### Properties, objects, collections, and methods

#### Properties:
- **Count** R/O

#### Objects:
- **Item** → **UserProperty** (default object)
- **Application** → **Application**
- **Parent** → **Application**

#### Count (property, R/O)

Data type: **Long**

Returns the number of **UserProperty** objects in the collection, i.e., the number of all components of the user's address data (last name, first name, street etc – separated into personal and business address)

This value is constantly 24, since there are exactly 24 such elements.

#### Item (pointer to object)

Data type: **Object**

Returns an individual **UserProperty** object that you can use to get or set an individual component of the user's personal or business address (last name, first name, street, etc)

*Which* UserProperty object you get depends on the numeric value that you pass to **Item**. The following table shows the admissible values:

| smoUserHomeAddressName            | = 1  | ' Last name (personal) |
| smoUserHomeAddressFirstName      | = 2  | ' First name (personal) |
| smoUserHomeAddressStreet         | = 3  | ' Street (personal)    |
| smoUserHomeAddressZip            | = 4  | ' ZIP code (personal)  |
| smoUserHomeAddressCity           | = 5  | ' City (personal)      |
| smoUserHomeAddressPhone1         | = 6  | ' Phone (personal)     |
| smoUserHomeAddressFax            | = 7  | ' Fax (personal)       |
| smoUserHomeAddressEmail          | = 8  | ' E-mail address (personal) |
| smoUserHomeAddressPhone2         | = 9  | ' Mobile phone (personal) |
| smoUserHomeAddressHomepage       | = 10 | ' Homepage (personal)  |
| smoUserBusinessAddressName       | = 11 | ' Last name (business) |
Examples:

' Show the user's first name (personal)
MsgBox pm.Application.UserProperties.Item(1).Value

' Change the business e-mail address to test@example.com
With pm.Application
    .UserProperties.Item(smoUserBusinessAddressEmail).Value = "test@example.com"
End With

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**

**UserProperty (object)**

Access path: **Application** \[UserProperties\] \[Item\]

**Description**

A **UserProperty** object represents one individual component of the user's personal or business address (for example, the ZIP code or the phone number).

There is one **UserProperty** object for each of these components. The number of these objects is constant, since you cannot create new address components.
2 Access to the object

The individual UserProperty objects can be accessed solely through enumeration of the elements of the Application.UserProperties collection. The type of this collection is UserProperties.

Example:

```vba
' Show the contents of the first address element (last name, personal)
MsgBox pm.Application.UserProperties.Item(1).Value
```

3 Properties, objects, collections, and methods

Properties:
- **Value** (default property)

Objects:
- Application ➔ Application
- Parent ➔ UserProperties

Value (property)

Data type: **String**

Gets or sets the contents of the address component. The following example sets the company name of the user:

```vba
Sub Example()
    Set pm = CreateObject("PlanMaker.Application")
End Sub
```

Application (pointer to object)

Data type: **Object**

Returns the Application object

Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. UserProperties

CommandBars (collection)

Access path: Application ➔ CommandBars
**Description**

The **CommandBars** collection contains all toolbars available in PlanMaker. The individual elements of this collection are of the type **CommandBar**

**Access to the collection**

There is exactly one instance of the **CommandBars** collection during the whole runtime of PlanMaker. It is accessed through the **Application.CommandBars** object:

```vba
' Show the name of the first toolbar
MsgBox pm.Application.CommandBars.Item(1).Name

' The same, but easier, using the default property
MsgBox pm.CommandBars(1)
```

**Properties, objects, collections, and methods**

Properties:
- **Count** R/O
- **DisplayFonts**
- **DisplayTooltips**

Objects:
- **Item** → **CommandBar** (default object)
- **Application** → **Application**
- **Parent** → **Application**

**Count (property, R/O)**

Data type: **Long**

Returns the number of **CommandBar** objects in the collection, ie the number of toolbars available

**DisplayFonts (property)**

Data type: **Boolean**

Gets or sets the setting "Show fonts in font lists" (True or False).

**DisplayTooltips (property)**

Data type: **Boolean**

Gets or sets the setting whether a tooltip should be displayed when the mouse cursor is pointed to a toolbar button.

Corresponds to the setting "Show tooltips" in the dialog box of PlanMaker's **Tools > Options** menu command.
**Item (pointer to object)**

Data type: **Object**

Returns an individual **CommandBar** object that you can use to access an individual toolbar.

*Which CommandBar object you get depends on the value that you pass to Item. You can specify either the numeric index or the name of the desired toolbar. Examples:*

```vba
' Make the first toolbar invisible

' Make the toolbar named "Formatting" invisible
pm.Application.CommandBars.Item("Formatting").Visible = False
```

Note: It is not advisable to use the *names* of toolbars as a reference, since these names are different in each language that PlanMaker's user interface supports. For example, if the user interface language is set to German, the name of the "Formatting" toolbar changes to "Formatleiste".

Instead, it is recommended to use the following symbolic constants for toolbars:

```
pmBarStatusShort   = 1 ' Status bar (no documents open)
pmBarStandardShort = 2 ' Standard toolbar (no documents open)
pmBarStatus        = 3 ' Status bar
pmBarStandard      = 4 ' Standard toolbar
pmBarFormatting    = 5 ' Formatting toolbar
pmBarObjects       = 6 ' Objects toolbar
pmBarEdit          = 7 ' Edit toolbar
pmBarOutliner      = 8 ' Outliner toolbar
pmBarChart         = 9 ' Chart toolbar
pmBarFormsEditing  = 10 ' Forms toolbar
pmBarPicture       = 11 ' Graphics toolbar
pmBarFullscreen    = 12 ' Full screen toolbar
```

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**

**CommandBar (object)**

Access path: **Application ➔ CommandBars ➔ Item**
1 Description

A CommandBar object represents one individual toolbar.

For each toolbar there is its own CommandBar object. If you create new toolbars or delete them, the respective CommandBar objects will be created or deleted dynamically.

2 Access to the object

The individual CommandBar objects can be accessed solely through enumerating the elements of the Application.CommandBars collection. The type of this collection is CommandBars.

Example:

```vba
' Show the name of the first toolbar
MsgBox pm.Application.CommandBars.Item(1).Name

' The same, but easier, using the default property
MsgBox pm.CommandBars(1)
```

3 Properties, objects, collections, and methods

Properties:
- Name (default property)
- Visible

Objects:
- Application → Application
- Parent → CommandBars

### Name (property)

Data type: String

Gets or sets the name of the toolbar.

Example:

```vba
' Show the name of the first toolbar
MsgBox pm.Application.CommandBars.Item(1).Name
```

### Visible (property)

Data type: Boolean

Gets or sets the visibility of the toolbar. The following example makes the "Formatting" toolbar invisible:

```vba
Sub Example()
    Set pm = CreateObject("PlanMaker.Application")
```
pm.Application.CommandBars.Item("Formatting").Visible = False
End Sub

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **CommandBars**

---

**AutoCorrect (object)**

Access path: **Application** → **AutoCorrect**

1. **Description**

The **AutoCorrect** object allows accessing the defined SmartText entries.

2. **Access to the object**

There is exactly one instance of the **AutoCorrect** object during the whole runtime of PlanMaker. It is accessed though the **Application.AutoCorrect** object:

```vba
' Show the number of SmartText entries
Set pm = CreateObject("PlanMaker.Application")
MsgBox pm.Application.AutoCorrect.Entries.Count
```

3. **Properties, objects, collections, and methods**

- **Objects:**
  - **Application** → **Application**
  - **Parent** → **Application**

- **Collections:**
  - **Entries** → **AutoCorrectEntries**

---

**Application (pointer to object)**

Data type: **Object**
Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**

**Entries (pointer to collection)**

Data type: **Object**

Returns the **AutoCorrectEntries** collection which contains all SmartText entries

---

**AutoCorrectEntries (collection)**

Access path: **Application** ➔ **AutoCorrect** ➔ **Entries**

1 **Description**

The **AutoCorrectEntries** collection contains all SmartText entries defined. The individual elements of this collection are of the type **AutoCorrectEntry**

2 **Access to the collection**

There is exactly one instance of the **AutoCorrectEntries** collection during the whole runtime of PlanMaker. It is accessed through the **Application.AutoCorrect.Entries** object:

```
' Create a SmartText entry named "sd" containing "sales department"
pm.Application.AutoCorrect.Entries.Add "sd", "sales department"
```

3 **Properties, objects, collections, and methods**

Properties:
- **Count** R/O

Objects:
- **Item** ➔ **AutoCorrectEntry** (default object)
- **Application** ➔ **Application**
- **Parent** ➔ **Application**

Methods:
- **Add**
**Count (property, R/O)**

Data type: **Long**

Returns the number of the **AutoCorrectEntry** objects, i.e., the number of the currently defined SmartText entries.

**Item (pointer to object)**

Data type: **Object**

Returns an individual **AutoCorrectEntry** object, i.e., the definition of an individual SmartText entry.

*Which AutoCorrect object you get depends on the value that you pass to Item: either the numeric index or the name of the necessary SmartText entry. Examples:*

```
' Show the contents of the first defined SmartText entry
MsgBox pm.Application.AutoCorrect.Entries.Item(1).Value

' Show the contents of the SmartText entry with the name "sd"
MsgBox pm.Application.AutoCorrect.Entries.Item("sd").Value
```

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e., **AutoCorrect**.

**Add (method)**

Add a new **AutoCorrectEntry** entry.

Syntax:

```
Add Name, Value
```

Parameters:

- **Name** (type: **String**): The name for the new SmartText entry. If the name is empty or already exists, the call of the method fails.
- **Value** (type: **String**): The text for the new SmartText entry. If the passed string is empty, the call of the method fails.

Return value:

**Object** (an **AutoCorrectEntry** object which represents the new SmartText entry)
Example:

' Create a SmartText entry named "sd" containing "sales department"
pm.Application.AutoCorrect.Entries.Add "sd", "sales department"

---

**AutoCorrectEntry (object)**

Access path: Application ➔ AutoCorrect ➔ Entries ➔ Item

1 **Description**

An AutoCorrectEntry object represents one individual SmartText entry, for example, "sd" for "sales department".

For each SmartText entry there is its own AutoCorrectEntry object. If you create SmartText entries or delete them, the respective AutoCorrectEntry objects will be created or deleted dynamically.

2 **Access to the object**

The individual AutoCorrectEntry objects can be accessed solely through enumerating the elements of the collection ApplicationAutoCorrectEntries The type of this collection is AutoCorrectEntries

Example:

' Show the name of the first SmartText entry
MsgBox pm.Application.AutoCorrect.Entries.Item(1).Name

3 **Properties, objects, collections, and methods**

Properties:
- Name (default property)
- Value

Objects:
- Application ➔ Application
- Parent ➔ AutoCorrectEntries

Methods:
- Delete

**Name (property)**

Data type: String

Gets or sets the name of the SmartText entry (e.g. "sd").
**Value (property)**
Data type: String
Gets or sets the contents of the SmartText entry (e.g. "sales department").

**Application (pointer to object)**
Data type: Object
Returns the Application object

**Parent (pointer to object)**
Data type: Object
Returns the parent object, i.e. AutoCorrectEntries

**Delete (method)**
Deletes an AutoCorrectEntry object of the AutoCorrectEntries collection

Syntax:
```
Delete
```
Parameters:
none
Return value:
none
Examples:
```
' Delete the first SmartText entry
pm.Application.AutoCorrect.Entries.Item(1).Delete

' Delete the SmartText entry with the name "sd"
pm.Application.AutoCorrect.Entries.Item("sd").Delete
```

**Workbooks (collection)**
Access path: Application ➔ Workbooks
1 Description

The **Workbooks** collection contains all opened documents. The individual elements of this collection are of the type **Workbook**.

2 Access to the collection

There is exactly one instance of the **Workbooks** collection during the whole runtime of PlanMaker. It is accessed through the **Application.Workbooks** object:

```vba
' Show the number of opened documents
MsgBox pm.Application.Workbooks.Count

' Show the name of the first opened document
MsgBox pm.Application.Workbooks(1).Name
```

3 Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → **Workbook** (default object)
- **Application** → **Application**
- **Parent** → **Application**

Methods:
- **Add**
- **Open**
- **Close**

**Count (property, R/O)**

Data type: **Long**

Returns the number of the **Workbook** objects in the collection, ie the number of the currently opened documents.

**Item (pointer to object)**

Data type: **Object**

Returns an individual **Workbook** object, ie an individual open document.

*Which Workbook object you get depends on the value that you pass to Item. You can specify either the numeric index or the name of the desired document. Examples:*

```vba
' Show the name of the first document
```
MsgBox pm.Application.Workbooks.Item(1).FullName

' Show the name of the document "Test.pmd" (provided that is it open)
MsgBox pm.Application.Workbooks.Item("Test.pmd").FullName

' You can also use the full name with the path
MsgBox pm.Application.Workbooks.Item("c:\Documents\Test.pmd").FullName

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**.

**Add (method)**

Creates a new empty document based on the standard document template **Normal.pmv** or any other document template you specify.

Syntax:

```
Add [Template]
```

Parameters:

- **Template** (optional; type: **String**): Path and file name of the document template on which your document should be based. If omitted, the standard template **Normal.pmv** will be used.

  If you omit the path or give only a relative path, PlanMaker's default template path will be automatically prefixed. If you omit the file extension **.pmv**, it will be automatically added.

Return value:

- **Object** (a **Workbook** object that represents the new document)

Example:

```vba
Sub Sample()
  Dim pm as Object
  Dim newDoc as Object

  Set pm = CreateObject("PlanMaker.Application")
  pm.Visible = True
  Set newDoc = pm.Documents.Add
  MsgBox newDoc.Name
End Sub
```

You can use the **Workbook** object returned by the **Add** method like any other document. Alternatively, you can ignore the return value of the **Add** method and access the new document with the **ActiveWorkbook** method, for example.
Open (method)

Opens an existing document.

Syntax:

    Open FileName, [ReadOnly], [Format], [Password], [WritePassword], [Delimiter], [TextMarker]

Parameters:

FileName (type: String): Path and file name of the document or document template to be opened.

ReadOnly (optional; type: Boolean): Indicates whether the document should be opened only for reading.

Format (optional; type: Long or PmSaveFormat): The file format of the document to be opened. The possible values are:

- pmFormatDocument = 0 ' PlanMaker document
- pmFormatTemplate = 1 ' PlanMaker document template
- pmFormatExcel97 = 2 ' Excel 97/2000/XP
- pmFormatExcel5 = 3 ' Excel 5.0/7.0
- pmFormatExcelTemplate = 4 ' Excel document template
- pmFormatSYLK = 5 ' SYLK
- pmFormatRTF = 6 ' Rich Text Format
- pmFormatTextMaker = 7 ' TextMaker (= RTF)
- pmFormatHTML = 8 ' HTML document
- pmFormatdBaseDOS = 9 ' dBASE database with DOS character set
- pmFormatdBaseAnsi = 10 ' dBASE database with Windows character set
- pmFormatDIF = 11 ' Text file with Windows character set
- pmFormatPlainTextAnsi = 12 ' Text file with Windows character set
- pmFormatPlainTextDOS = 13 ' Text file with DOS character set
- pmFormatPlainTextUnix = 14 ' Text file with ANSI character set for UNIX, Linux, FreeBSD
- pmFormatPlainTextUnicode = 15 ' Text file with Unicode character set
- pmFormatdBaseUnicode = 18 ' dBASE database with Unicode character set
- pmFormatPlainTextUTF8 = 21 ' Text file with UTF8 character set
- pmFormatMSXML = 23 ' Excel 2007 and later
- pmFormatMSXMLTemplate = 24 ' Excel document template 2007 and later
- pmFormatPM2008 = 26 ' PlanMaker 2008 document
- pmFormatPM2010 = 27 ' PlanMaker 2010 document
- pmFormatPM2012 = 28 ' PlanMaker 2012 document
- pmFormatPM2012Template = 29 ' PlanMaker 2012 document template

If you omit this parameter, the value pmFormatDocument will be taken.

Tip: Independent of the value for the FileFormat parameter PlanMaker always tries to determine the file format by itself and ignores evidently false inputs.

Password (optional; type: String): The read password for password-protected documents. If you omit this parameter for a password-protected document, the user will be asked to input the read password.

WritePassword (optional; type: String): The write password for password-protected documents. If you omit this parameter for a password-protected document, the user will be asked to input the write password.

Delimiter (optional; type: String): Indicates the text delimiter (for text file formats), for example, comma or semicolon. If you omit this parameter, tabs will be used as a delimiter.
TextMarker (optional; type: Long or PmImportTextMarker): Indicates the characters the individual text fields are enclosed with (for text file formats). The possible values are:

- `pmImportTextMarkerNone` = 0 ' No marker
- `pmImportTextMarkerApostrophe` = 1 ' Apostrophe marks
- `pmImportTextMarkerQmark` = 2 ' Quotation marks

Return value:

Object (a Workbook object which represents the opened document)

Examples:

```vbnet
' Open a document
pm.Workbooks.Open "c:\docs\test.pmd"

' Open a document only for reading
pm.Documents.Open "c:\docs\Test.pmd", True
```

**Close (method)**

Closes all currently opened documents.

Syntax:

```vbnet
Close [SaveChanges]
```

Parameters:

- **SaveChanges** (optional; type: Long or SmoSaveOptions) indicates whether the documents which were changed since they were last saved should be saved or not. If you omit this parameter, the user will be asked to indicate it (if necessary). The possible values are:
  
  - `smoDoNotSaveChanges` = 0      ' Don't ask, don't save
  - `smoPromptToSaveChanges` = 1   ' Ask the user
  - `smoSaveChanges` = 2           ' Save without asking

Return value:

none

Example:

```vbnet
' Close all opened documents without saving them
pm.Workbooks.Close smoDoNotSaveChanges
```

**Workbook (object)**

Access paths:

- Application → Workbooks → Item
- Application → ActiveWorkbook
- Application → Windows → Item → Workbook
- Application → ActiveWindow → Workbook
# Description

A **Workbook** object represents one individual document opened in PlanMaker. For each document there is its own **Workbook** object. If you open or close documents, the respective **Workbook** objects will be created or deleted dynamically.

## Access to the object

The individual **Workbook** objects can be accessed in the following ways:

- All currently open documents are administrated in the `Application.Workbooks` collection (type: `Workbooks`):

  ```vba
  ' Show the names of all opened documents
  For i = 1 To pm.Application.Workbooks.Count
    MsgBox pm.Application.Workbooks.Item(i).Name
  Next i
  ```

- The active document can be accessed through the `Application.ActiveWorkbook` object:

  ```vba
  ' Show the name of the current document
  MsgBox pm.Application.ActiveWorkbook.Name
  ```

- **Workbook** is the **Parent** object for the **Sheets** object, a collection of all worksheets in a document:

  ```vba
  ' Show the name of the current document in an indirect way
  MsgBox pm.Application.ActiveWorkbook.Sheets.Parent.Name
  ```

- The **Window** object includes an object pointer to the document that belongs to it:

  ```vba
  ' Access the active document from the active document window
  MsgBox pm.Application.ActiveWindow.Workbook.Name
  ```

## Properties, objects, collections, and methods

### Properties:
- **Name** R/O (default property)
- **FullName** R/O
- **Path** R/O
- **Saved**
- **ReadOnly**
- **EnableCaretMovement**
- **ManualApply**
- **ScreenUpdate**
- **Calculation**
- **CalculateBeforeSave**
- **CalculateBeforeCopying**
- **CalculateBeforePrinting**
- **DisplayCommentIndicator**
- FixedDecimal
- FixedDecimalPlaces
- Iteration
- MaxIteration
- MaxChange
- ShowGuideLinesForTextFrames
- ShowHiddenObjects
- RoundFinalResults
- RoundIntermediateResults

Objects:
- ActiveSheet → Sheet
- ActiveWindow → Window
- BuiltInDocumentProperties → DocumentProperties
- Application → Application
- Parent → Workbooks

Collections:
- Sheets → Sheets

Methods:
- Activate
- Calculate
- Close
- Save
- SaveAs
- PrintOut

**Name (property, R/O)**

Data type: **String**

Returns the name of the document (e.g. Smith.pmd).

**FullName (property, R/O)**

Data type: **String**

Returns the path and name of the document (e.g., c:\Documents\Smith.pmd).

**Path (property, R/O)**

Data type: **String**

Returns the path of the document (e.g. c:\Documents).

**Saved (property)**

Data type: **Boolean**
Gets or sets the Saved property of the document. It indicates whether a document was changed since it was last saved:

- If Saved is set to True, the document was not changed since it was last saved.
- If Saved is set to False, the document was changed since it was last saved. When closing the document, the user will be asked if it should be saved.

Note: As soon as the user changes something in a document, its Saved property will be set to False automatically.

**ReadOnly (property)**

Data type: Boolean

Gets or sets the ReadOnly property of the document.

If the property is True, the document is protected against user changes. Users will not be able to edit, delete, or add content.

If you set this property to True, the EnableCaretMovement property (see there) will be automatically set to False. Therefore, the cursor cannot be moved inside the document anymore. However, you can always set the EnableCaretMovement property to True if you want to make cursor movement possible.

**EnableCaretMovement (property)**

Data type: Boolean

Gets or sets the EnableCaretMovement property of the document. This property is sensible only in combination with the ReadOnly property (see there).

If the EnableCaretMovement property is True, the cursor can be moved freely inside a write-protected document. If it is set to False, cursor movement is not possible.

**ManualApply (property)**

Data type: Boolean

Gets or sets the setting whether formatting changes made by your BasicMaker script should be applied instantly or not.

By default, this property is set to False, causing formatting commands like Range.Font.Size = 12 to be applied instantly.

If you would like to apply a large number of the formattings, you can set the ManualApply property to True. In this case, PlanMaker accumulates all formatting commands until you call the Range.ApplyFormatting method (see there). This leads to a speed advantage.

**ScreenUpdate (property)**

Data type: Boolean
Gets or sets the setting whether PlanMaker should update the display after each change.

If you set this property to `false` and then change the contents or formatting of cells, these changes will not be shown on the screen until you set the property to `True` again. This can cause a speed advantage if you change many cells at once.

**Calculation (property)**

Data type: `Long` (PmCalculation)

Gets or sets the setting whether the document should be re-calculated automatically or manually. The possible values are:

- `pmCalculationAutomatic` = 0 ' Update calculations automatically
- `pmCalculationManual` = 1 ' Update calculations manually

**CalculateBeforeSave (property)**

Data type: `Boolean`

Gets or sets the setting whether the document should be re-calculated when it is saved.

This property has an effect only if the document is set to be re-calculated manually. If the `Calculation` property (see there) is set to `pmCalculationAutomatic`, all calculations will always be up-to-date anyway.

**CalculateBeforeCopying (property)**

Data type: `Boolean`

Gets or sets the setting whether the document should be re-calculated before copying or cutting cells.

This property has an effect only if the document is set to be re-calculated manually. If the `Calculation` property (see there) is set to `pmCalculationAutomatic`, all calculations will always be up-to-date anyway.

**CalculateBeforePrinting (property)**

Data type: `Boolean`

Gets or sets the setting whether the document should be re-calculated before printing.

This property has an effect only if the document is set to be re-calculated manually. If the `Calculation` property (see there) is set to `pmCalculationAutomatic`, all calculations will always be up-to-date anyway.

**DisplayCommentIndicator (property)**

Data type: `Long` (PmCommentDisplayMode)

Gets or sets the mode in which comments are shown. The possible values are:

- `pmNoIndicator` = 0 ' Show neither comments nor yellow triangle
- `pmCommentIndicatorOnly` = 1 ' Show only a yellow triangle
pmCommentOnly = 2 ' Show comments, but no yellow triangle
pmCommentAndIndicator = 3 ' Show both comments and triangle

**FixedDecimal** (property)

Data type: **Boolean**

Gets or sets the setting whether the decimal separator should be automatically shifted after the input of numbers.

The *number* of positions to shift the decimal separator is specified by the **FixedDecimalPlaces** property (see there).

Example:

```vba
' Move the decimal separator 2 positions to the left after input
pm.ActiveWorkbook.FixedDecimal = True
pm.ActiveWorkbook.FixedDecimalPlaces = 2 ' 4235 will become 42.35

' Move the decimal separator 2 positions to the right after input
pm.ActiveWorkbook.FixedDecimal = True
pm.ActiveWorkbook.FixedDecimalPlaces = -2 ' 42 will become 4200
```

**FixedDecimalPlaces** (property)

Data type: **Boolean**

Gets or sets the number of positions to shift the decimal separator after the input of the numbers.

Note: This has no effect unless the **FixedDecimal** property (see there) is set to **True**.

**Iteration** (property)

Data type: **Boolean**

Gets or sets the setting "Use iterations" in the dialog of the **File > Properties** menu command, **Calculate** tab.

If you enable this property, you should also specify values for the **MaxChange** and **MaxIteration** properties (see there).

**MaxIteration** (property)

Data type: **Long**

Gets or sets the setting "Maximal iterations" in the dialog of the **File > Properties** menu command, **Calculate** tab. Applicable only if the **Iteration** property (see there) is set to **True**.

**MaxChange** (property)

Data type: **Long**
Gets or sets the setting "Maximal change" (for iterations) in the dialog of the File > Properties menu command, Calculate tab. Applicable only if the Iteration property (see there) is set to True.

ShowGuideLinesForTextFrames (property)

Data type: Boolean

Gets or sets the setting "Guidelines for text frames" in the dialog of the File > Properties menu command, Options tab.

ShowHiddenObjects (property)

Data type: Boolean

Gets or sets the setting "Show hidden objects" in the dialog of the File > Properties menu command, Options tab.

RoundFinalResults (property)

Data type: Boolean

Gets or sets the setting "Round final results" in the dialog of the File > Properties menu command, Calculate tab.

RoundIntermediateResults (property)

Data type: Boolean

Gets or sets the setting "Round intermediate results" in the dialog of the File > Properties menu command, Calculate tab.

ActiveSheet (pointer to object)

Data type: Object

Returns the currently active Sheet object that you can use to access the active worksheet.

ActiveWindow (pointer to object)

Data type: Object

Returns the currently active Window object that you can use to access the active document window.

BuiltInDocumentProperties (pointer to object)

Data type: Object
Returns the **DocumentProperties** collection that you can use to access the document infos (title, subject, author etc)

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Workbooks**

**Sheets (pointer to collection)**

Data type: **Object**

Returns the **Sheets** collection, a collection of all worksheets in the document

**Activate (method)**

Brings the document window to the front (if its **Visible** property is True) and sets the focus to the document window.

Syntax:

```
Activate
```

Parameters:

none

Return value:

none

Example:

```
' Bring the first document in the Workbooks collection to the front
pm.Workbooks(1).Activate
```

**Calculate (method)**

Re-calculates the document (corresponds to the menu command **Tools > Recalculate** in PlanMaker).

Syntax:

```
Calculate
```

Parameters:
BasicMaker and PlanMaker

Recalculate the first document in the Workbooks collection
`pm.Workbooks(1).Calculate`

Close (method)

Closes the document.

Syntax:
```vba
Close [SaveChanges]
```

Parameters:

- **SaveChanges** (optional; type: `Long` or `SmoSaveOptions`) indicates whether the document should be saved or not. If you omit this parameter, the user will be asked – but only if the document was changed since it was last saved. The possible values are:
  - `smoDoNotSaveChanges` = 0 ' Don't ask, don't save
  - `smoPromptToSaveChanges` = 1 ' Ask the user
  - `smoSaveChanges` = 2 ' Save without asking

Return value:
none

Example:

' Close the active document without saving
`pm.ActiveWorkbook.Close smoDoNotSaveChanges`

Save (method)

Saves the document.

Syntax:
```vba
Save
```

Parameters:
none

Return value:
none

Example:

' Save the active document
```
pm.ActiveWorkbook.Save

SaveAs (method)

Saves the document under a different name and/or another path.

Syntax:

    SaveAs FileName, [FileFormat], [Delimiter], [TextMarker]

Parameters:

    FileName (type: String): Path and file name under which the document should be saved.
    FileName (type: String): Path and file name under which the document should be saved.
    FileFormat (optional; type: Long or TmSaveFormat) determines the file format. This parameter can take the following values (left: the symbolic constants, right: the corresponding numeric values):

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmFormatDocument</td>
<td>0</td>
</tr>
<tr>
<td>pmFormatTemplate</td>
<td>1</td>
</tr>
<tr>
<td>pmFormatExcel97</td>
<td>2</td>
</tr>
<tr>
<td>pmFormatExcel5</td>
<td>3</td>
</tr>
<tr>
<td>pmFormatExcelTemplate</td>
<td>4</td>
</tr>
<tr>
<td>pmFormatSYLK</td>
<td>5</td>
</tr>
<tr>
<td>pmFormatRTF</td>
<td>6</td>
</tr>
<tr>
<td>pmFormatTextMaker</td>
<td>7</td>
</tr>
<tr>
<td>pmFormatHTML</td>
<td>8</td>
</tr>
<tr>
<td>pmFormatdBaseDOS</td>
<td>9</td>
</tr>
<tr>
<td>pmFormatdBaseAnsi</td>
<td>10</td>
</tr>
<tr>
<td>pmFormatDIF</td>
<td>11</td>
</tr>
<tr>
<td>pmFormatPlainTextAnsi</td>
<td>12</td>
</tr>
<tr>
<td>pmFormatPlainTextDOS</td>
<td>13</td>
</tr>
<tr>
<td>pmFormatPlainTextUnix</td>
<td>14</td>
</tr>
<tr>
<td>pmFormatPlainTextUnicode</td>
<td>15</td>
</tr>
<tr>
<td>pmFormatdBaseUnicode</td>
<td>18</td>
</tr>
<tr>
<td>pmFormatPlainTextUTF8</td>
<td>21</td>
</tr>
<tr>
<td>pmFormatMSXML</td>
<td>23</td>
</tr>
<tr>
<td>pmFormatdBaseUnicode</td>
<td>23</td>
</tr>
<tr>
<td>pmFormatPlainTextUTF8</td>
<td>24</td>
</tr>
<tr>
<td>pmFormatPM2008</td>
<td>26</td>
</tr>
<tr>
<td>pmFormatPM2010</td>
<td>27</td>
</tr>
<tr>
<td>pmFormatPM2012</td>
<td>28</td>
</tr>
<tr>
<td>pmFormatPM2012Template</td>
<td>29</td>
</tr>
</tbody>
</table>

Linux, FreeBSD

- pmFormatPlainTextUnicode = 15 ' Text file with Unicode character set
- pmFormatPlainTextUTF8 = 21 ' Text file with UTF8 character set
- pmFormatMSXML = 23 ' Excel 2007 and later
- pmFormatPlainTextUTF8 = 24 ' Excel document template 2007 and later
- pmFormatPM2008 = 26 ' PlanMaker 2008 document
- pmFormatPM2010 = 27 ' PlanMaker 2010 document
- pmFormatPM2012 = 28 ' PlanMaker 2012 document
- pmFormatPM2012Template = 29 ' PlanMaker 2012 document template

If you omit this parameter, pmFormatDocument will be taken.

    Delimiter (optional; type: String): Indicates the text delimiter (for text file formats), for example, comma or semicolon. If you omit this parameter, tabs will be used as a delimiter.

    TextMarker (optional; type: Long or PmImportTextMarker): Indicates the characters the individual text fields are enclosed with (for text file formats). The possible values are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmImportTextMarkerNone</td>
<td>0</td>
</tr>
<tr>
<td>pmImportTextMarkerApostrophe</td>
<td>1</td>
</tr>
<tr>
<td>pmImportTextMarkerQmark</td>
<td>2</td>
</tr>
</tbody>
</table>

Return value:

    none
Example:

```
' Save the current document under a new name in Excel 97 format
pm.ActiveWorkbook.SaveAs "c:\docs\test.xls", pmFormatExcel97
```

### PrintOut (method)

Prints the document on the currently chosen printer.

Syntax:

```
PrintOut [From], [To]
```

Parameters:

- **From** (optional; type: **Long**) indicates from which page to start. If omitted, printing starts from the first page.
- **To** (optional; type: **Long**) indicates at which page to stop. If omitted, printing stops at the last page.

Return value:

none

Example:

```
' Print out the current document
pm.ActiveWorkbook.PrintOut
```

### DocumentProperties (collection)

Access paths:

- **Application** → **Workbooks** → **Item** → **DocumentProperties**
- **Application** → **ActiveWorkbook** → **DocumentProperties**

1. **Description**

The **DocumentProperties** collection contains all document properties of a document, including, for example, title, author, number of charts, etc.

The individual elements of this collection are of the type **DocumentProperty**

2. **Access to the collection**

Each opened document has exactly one **DocumentProperties** collection. It is accessed through the **Document.BuiltInDocumentProperties** object:

```
' Set the title of the active document to "My Calculation"
pm.ActiveWorkbook.BuiltInDocumentProperties(smoPropertyTitle) = "My Calculation"
```
Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → DocumentProperty (default object)
- **Application** → Application
- **Parent** → Workbook

### Count (property, R/O)

Data type: **Long**

Returns the number of DocumentProperty objects in the collection, ie the number of the document properties of a document. The value of this property is fixed, since all PlanMaker documents have the same number of the document properties.

### Item (pointer to object)

Data type: **Object**

Returns an individual DocumentProperty object, ie an individual document property.

*Which* DocumentProperty object you get depends on the value that you pass to **Item**. You can specify either the numeric index or the name of the desired document property.

The following table contains the possible numeric values and the names associated to them:

<table>
<thead>
<tr>
<th>smoPropertyTitle</th>
<th>smoPropertySubject</th>
<th>smoPropertyAuthor</th>
<th>smoPropertyKeywords</th>
<th>smoPropertyComments</th>
<th>smoPropertyAppName</th>
<th>smoPropertyTimeLastPrinted</th>
<th>smoPropertyTimeCreated</th>
<th>smoPropertyTimeLastSaved</th>
<th>smoPropertyKeystrokes</th>
<th>smoPropertyCharacters</th>
<th>smoPropertyWords</th>
<th>smoPropertySentences</th>
<th>smoPropertyParas</th>
<th>smoPropertyChapters</th>
<th>smoPropertySections</th>
<th>smoPropertyLines</th>
<th>smoPropertyPages</th>
<th>smoPropertyCells</th>
<th>smoPropertyTextCells</th>
<th>smoPropertyNumericCells</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoPropertyTitle</td>
<td>smoPropertySubject</td>
<td>smoPropertyAuthor</td>
<td>smoPropertyKeywords</td>
<td>smoPropertyComments</td>
<td>smoPropertyAppName</td>
<td>smoPropertyTimeLastPrinted</td>
<td>smoPropertyTimeCreated</td>
<td>smoPropertyTimeLastSaved</td>
<td>smoPropertyKeystrokes</td>
<td>smoPropertyCharacters</td>
<td>smoPropertyWords</td>
<td>smoPropertySentences</td>
<td>smoPropertyParas</td>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td>smoPropertyNumericCells</td>
</tr>
<tr>
<td>smoPropertyCharacters</td>
<td>smoPropertyWords</td>
<td>smoPropertySentences</td>
<td>smoPropertyParas</td>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td></td>
<td></td>
<td></td>
<td>smoPropertyKeystrokes</td>
<td>smoPropertyCharacters</td>
<td>smoPropertyWords</td>
<td>smoPropertySentences</td>
<td>smoPropertyParas</td>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td>smoPropertyNumericCells</td>
</tr>
<tr>
<td>smoPropertyWords</td>
<td>smoPropertySentences</td>
<td>smoPropertyParas</td>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td></td>
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<td></td>
<td>smoPropertyKeystrokes</td>
<td>smoPropertyCharacters</td>
<td>smoPropertyWords</td>
<td>smoPropertySentences</td>
<td>smoPropertyParas</td>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td>smoPropertyNumericCells</td>
</tr>
<tr>
<td>smoPropertySentences</td>
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<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
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<td>smoPropertyKeystrokes</td>
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<td>smoPropertyParas</td>
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<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td>smoPropertyNumericCells</td>
</tr>
<tr>
<td>smoPropertyParas</td>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td></td>
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<td>smoPropertyKeystrokes</td>
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<td>smoPropertySentences</td>
<td>smoPropertyParas</td>
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<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td>smoPropertyNumericCells</td>
</tr>
<tr>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td></td>
<td></td>
<td></td>
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<td>smoPropertyCharacters</td>
<td>smoPropertyWords</td>
<td>smoPropertySentences</td>
<td>smoPropertyParas</td>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td>smoPropertyNumericCells</td>
</tr>
<tr>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td>smoPropertyNumericCells</td>
<td></td>
<td></td>
<td></td>
<td>smoPropertyKeystrokes</td>
<td>smoPropertyCharacters</td>
<td>smoPropertyWords</td>
<td>smoPropertySentences</td>
<td>smoPropertyParas</td>
<td>smoPropertyChapters</td>
<td>smoPropertySections</td>
<td>smoPropertyLines</td>
<td>smoPropertyPages</td>
<td>smoPropertyCells</td>
<td>smoPropertyTextCells</td>
<td>smoPropertyNumericCells</td>
</tr>
</tbody>
</table>

```vba
MsgBox pm.ActiveWorkbook.BuiltInDocumentProperties("Number of charts")
```
This list specifies all document properties that exist in SoftMaker Office, including those that are not available in PlanMaker. The latter are marked as "not available in PlanMaker".

**Application (pointer to object)**

Data type: Object

Returns the Application object

**Parent (pointer to object)**

Data type: Object

Returns the parent object, i.e. an object of the type Workbook

**DocumentProperty (object)**

Access paths:

- Application → Workbooks → Item → BuiltInDocumentProperties → Item
- Application → ActiveWorkbook → BuiltInDocumentProperties → Item

**1 Description**

A DocumentProperty object represents one individual document property of a document, for example, the title, the author, or the number of charts in a document.

**2 Access to the object**

The individual DocumentProperty objects can be accessed solely through enumerating the elements of the collection DocumentProperties

For each opened document there is exactly one instance of the DocumentProperties collection, namely BuiltInDocumentProperties in the Workbook object:
' Set the title of the active document to "My Calculation"
Option Explicit
Dim pm As Object
Set pm = CreateObject("PlanMaker.Application")
Dim i As Integer
For i = 1 To 5
    pm.Workbooks.Add
    With pm.ActiveWorkbook
        .BuiltInDocumentProperties.Item("Title").Value = "New Title"
        .BuiltInDocumentProperties.Item("Author").Name = "Author"
    End With
Next
MsgBox pm.ActiveWorkbook.BuiltInDocumentProperties.Item(smoPropertyTitle).Name
MsgBox pm.ActiveWorkbook.BuiltInDocumentProperties.Item("Title").Value

' Properties, objects, collections, and methods

3 Properties, objects, collections, and methods

Properties:
- **Name** R/O
- **Value** (default property)
- **Valid**
- **Type**

Objects:
- Application → **Application**
- Parent → **BuiltInDocumentProperties**

### Name (property, R/O)

Data type: **String**

Returns the name of the document property. Examples:

' Show the name of the document property smoPropertyTitle, i.e. "Title"
MsgBox pm.ActiveWorkbook.BuiltInDocumentProperties.Item(smoPropertyTitle).Name

' Show the name of the document property "Author", i.e. "Author"
MsgBox pm.ActiveWorkbook.BuiltInDocumentProperties.Item("Author").Name

### Value (property)

Data type: **String**

Gets or sets the contents of a document property.

The following example assigns a value to the document property "Title" defined by the numeric constant smoPropertyTitle and then reads its value again using the string constant "Title":

Sub Example()
    Dim pm as Object
    Set pm = CreateObject("PlanMaker.Application")
    pm.Workbooks.Add ' Add a new empty document

    With pm.ActiveWorkbook
        ' Set the new title (using the numeric constant smoPropertyTitle)

        ' Get again the same property (using the string constant this time)
        MsgBox .BuiltInDocumentProperties.Item("Title").Value
    End With
End Sub
Since **Item** is the default object of the **DocumentProperties** and **Value** is the default property of **DocumentProperty**, the example can be written clearer in the following way:

```vbnet
Sub Example()
    Dim pm as Object

    Set pm = CreateObject("PlanMaker.Application")
    pm.Workbooks.Add ' Add a new empty document

    With pm.ActiveWorkbook
        ' Set the new title (using the numeric constant smoPropertyTitle)
        .BuiltInDocumentProperties(smoPropertyTitle) = "New Title"

        ' Get again this property (using the string constant this time)
        MsgBox .BuiltInDocumentProperties("Title")
    End With
End Sub
```

### Valid (property, R/O)

**Data type:** Boolean

**Returns** True if the document property is available in PlanMaker.

**Background:** The list of document properties also contains items that are available only in TextMaker (for example, smoPropertyChapters, "Number of chapters"). When working with PlanMaker, you can retrieve only those document properties that are known by this program – otherwise an empty value will be returned (VT_EMPTY).

The **Valid** property allows you to test whether the respective document property is available in PlanMaker before using it. Example:

```vbnet
Sub Test
    Dim pm as Object
    Dim i as Integer

    Set pm = CreateObject("PlanMaker.Application")

    pm.Visible = True
    pm.Workbooks.Add ' Add an empty document

    With pm.ActiveWorkbook
        For i = 1 to .BuiltInDocumentProperties.Count
            If .BuiltInDocumentProperties(i).Valid then
                print i, .BuiltInDocumentProperties(i).Name, "=" , _
                .BuiltInDocumentProperties(i).Value
            Else
                print i, "Not available in PlanMaker"
            End If
        Next i
    End With
End Sub
```
**Type (property, R/O)**

Data type: **Long** (SmoDocProperties)

Returns the data type of the document property. In order to evaluate a document property correctly, you must know its type. For example, **Title** (smoPropertyTitle) is a string value, **Creation Date** (smoPropertyTimeCreated) is a date. The possible values are:

<table>
<thead>
<tr>
<th>Property Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoPropertyTypeBoolean</td>
<td>0 ' Boolean</td>
</tr>
<tr>
<td>smoPropertyTypeDate</td>
<td>1 ' Date</td>
</tr>
<tr>
<td>smoPropertyTypeFloat</td>
<td>2 ' Floating-point value</td>
</tr>
<tr>
<td>smoPropertyTypeNumber</td>
<td>3 ' Integer number</td>
</tr>
<tr>
<td>smoPropertyTypeString</td>
<td>4 ' String</td>
</tr>
</tbody>
</table>

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **BuiltInDocumentProperties**

---

**Sheets (collection)**

Access paths:

- **Application** → **Workbooks** → **Item** → **Sheets**
- **Application** → **ActiveWorkbook** → **Sheets**

**Description**

The **Sheets** collection contains all worksheets of a document. The individual elements of this collection are of the type **Sheet**

**Access to the collection**

Each open document has exactly one instance of the **Sheets** collection. It is accessed through the **Workbook.Sheets** object:

```plaintext
' Display the number of worksheets in the active document
MsgBox pm.ActiveWorkbook.Sheets.Count
```
3 Properties, objects, collections, and methods

Properties:
- Count R/O

Objects:
- Item → Sheet
- Application → Application
- Parent → Workbook

Methods:
- Add

### Count (property, R/O)

Data type: Long

Returns the number of Sheet objects in the document – in other words: the number of the worksheets in the document

### Item (pointer to object)

Data type: Object

Returns an individual Sheet object, i.e., one individual worksheet

*Which* Sheet object you get depends on the value that you pass to Item. You can specify either the numeric index or the name of the worksheet. Examples:

```vba
' Show the name of the first worksheet
MsgBox pm.Application.ActiveWorkbook.Sheets.Item(1).Name

' Show the name of the worksheet with the name "Income"
MsgBox pm.Application.ActiveWorkbook.Sheets.Item("Income").Name
```

### Application (pointer to object)

Returns the Application object

### Parent (pointer to object)

Returns the parent object, i.e., an object of the type Workbook

### Add (method)

Adds a new empty worksheet to the document and returns the Sheet object that represents this new worksheet

Syntax:
**Add**  [Name]

Parameters:

**Name** (optional; type: **String**): The name for the new worksheet. If you omit this parameter, the name is automatically generated ("Table1", "Table2", "Table3", etc.)

Return type:

**Object**

Example:

```vba
Sub Sample()
    Dim pm as Object
    Dim newDoc as Object
    Dim newSheet as Object

    Set pm = CreateObject(“PlanMaker.Application”)  
    pm.Visible = True

    ' Add a new document
    Set newDoc = pm.Workbooks.Add

    ' Add a worksheet to the document
    Set newSheet = newDoc.Sheets.Add("MySheet")

    ' Display the name of the new worksheet
    MsgBox newSheet.Name
End Sub
```

You can use the **Sheet** object returned by the **Add** method like any other worksheet. You can also ignore the return value of the **Add** method and get the new worksheet through the **ActiveSheet** object, for example.

---

**Sheet (object)**

Access paths:

- **Application** → **Workbooks** → **Item** → **Sheets** → **Item**
- **Application** → **Workbooks** → **ActiveSheet**
- **Application** → **ActiveWorkbook** → **ActiveSheet**
- **Application** → **ActiveSheet**

**Description**

A **Sheet** object represents an individual worksheet in one of the open documents.

For each worksheet there is its own **Sheet** object. If you add worksheets to the document or delete them, the respective **Sheet** objects will be created or deleted dynamically.
The individual Sheet objects can be accessed in the following ways:

- All worksheets of a document are administrated in the Workbook.Sheets collection (type: Sheets):

  ```vba
  ' Display the names of all worksheets in the active document
  For i = 1 To pm.Application.ActiveWorkbook.Sheets.Count
    MsgBox pm.Application.ActiveWorkbook.Sheets.Item(i).Name
  Next i
  ```

- The active worksheet of a document can be received from the Workbook.ActiveSheet object:

  ```vba
  ' Display the name of the active worksheet
  MsgBox pm.Application.Workbooks(1).ActiveSheet.Name
  ```

- The active worksheet of the active document can be received from the Application.ActiveSheet object:

  ```vba
  ' Display the name of the active worksheet in the active document
  MsgBox pm.Application.ActiveSheet.Name
  ```

- Sheet is the Parent object for several objects that are linked with it, for example, Range or AutoFilter:

  ```vba
  ' Den Namen des aktuellen Arbeitsblatts über einen Umweg anzeigen
  ```

## Properties, objects, collections, and methods

Properties:
- Name (default property)
- Index R/O
- Hidden
- PageBreaks
- DisplayRowHeadings
- DisplayColumnHeadings
- AutoFilterMode

Objects:
- PageSetup → PageSetup
- Selection → Range
- Rows → Rows
- Columns → Columns
- Cells → Range
- Range → Range
- AutoFilter → AutoFilter
- Application → Application
- Parent → Sheets

Methods:
- Activate
- Delete
- Move
- Select
- ShowAllData

### Name (property)

Data type: **String**

Gets or sets the name of the worksheet.

### Index (property, R/O)

Data type: **Long**

Returns the numeric index of the worksheet within the other worksheets (see also **Move**).

### Hidden (property)

Data type: **Boolean**

Gets or sets the setting whether the worksheet is hidden. Corresponds to the menu commands **Table > Worksheet > Show** and **Hide** in PlanMaker.

### PageBreaks (property)

Data type: **Boolean**

Gets or sets the setting whether page breaks should be displayed in the worksheet. Corresponds to the **Page breaks** option in the dialog of PlanMaker's **Table > Properties** menu command.

### DisplayRowHeadings (property)

Data type: **Boolean**

Gets or sets the setting whether the row headings should be shown in the worksheet. Corresponds to the **Row header** option in the dialog of PlanMaker's **Table > Properties** menu command.

### DisplayColumnHeadings (property)

Data type: **Boolean**

Gets or sets the setting whether the column headings should be shown in the worksheet. Corresponds to the **Column header** option in the dialog of PlanMaker's **Table > Properties** menu command.

### DisplayGridlines (property)

Data type: **Boolean**
Gets or sets the setting whether grid lines should be shown in the worksheet. Corresponds to the Grid option in the dialog of PlanMaker's Table > Properties menu command.

**GridColumnColor (property)**

Data type: Long (SmoColor)

Gets or sets the color of the grid lines as a "BGR" value (Blue-Green-Red triplet). You can either indicate an arbitrary value or use one of the pre-defined BGR color constants.

**GridColumnColorIndex (property)**

Data type: Long (SmoColorIndex)

Gets or sets the color of the grid lines as an index color. "Index colors" are the standard colors of PlanMaker, consecutively numbered from -1 for transparent to 15 for light gray. You can use only one of the values presented in the Color Indices table.

Note: It is recommended to use the GridLineColor property (see above) instead of this one, since it is not limited to the standard colors but enables you to access the entire BGR color palette.

**AutoFilterMode (property)**

Gets or sets the setting whether drop-down arrows should be shown for active AutoFilters.

Note: You can always read this setting. But if you want to change it, you should note that this property can only be used to hide the drop-down arrows of AutoFilters. To show the arrows, you must call the AutoFilter method from the Range object instead.

**PageSetup (pointer to object)**

Data type: Object

Returns the PageSetup object that you can use to access the page formatting of the worksheet (paper size, margins, etc).

**Selection (pointer to object)**

Data type: Object

Returns a Range object that represents the currently selected cells in the worksheet. You can use it to get and set their contents, formattings, etc.

If nothing is selected in the worksheet, the Range object represents the current cell.

**Rows (pointer to object)**

Data type: Object
Returns the **Rows** collection, a collection of all rows in the worksheet.

The individual elements of this collection are **Range** objects, so you can use all properties and methods available for range objects with them.

Example:

```vba
' Set the font for all cells in row 10 to Courier New
pm.ActiveSheet.Rows(10).Font.Name = "Courier New"
```

**Columns (pointer to object)**

Data type: **Object**

Returns the **Columns** collection, a collection of all rows in the worksheet.

The individual elements of this collection are **Range** objects, so you can use all properties and methods available for range objects with them.

Example:

```vba
' Set the font for all cells in column C (= 3rd column) to Courier New
pm.ActiveSheet.Columns(3).Font.Name = "Courier New"
```

**Cells (pointer to object)**

Data type: **Object**

Returns a **Range** object that contains all cells of the entire worksheet. This is useful for two types of applications:

- You can apply an operation to each cell in the worksheet (for example, a different formatting):

  ```vba
  ' Colorize the whole worksheet red
  ```

- You can address the individual cells using loop variables instead of manually building a string with the cell address (for example, "B5" for the second column in the fifth row). To do this, use the **Item** property of the **Range** object returned by the **Cells** pointer, for example:

  ```vba
  ' Fill the first 5 by 10 cells of the active worksheet
  Dim row, col as Integer
  For row = 1 To 5
    For col = 1 To 10
    Next col
  Next row
  ```

**Range (pointer to object)**

Data type: **Object**
Returns a **Range** object according to the specified parameters You can use this object to access the cells in a cell range and, for example, get or set their values

Syntax 1:

```
obj = Range(Cell1)
```

Syntax 2:

```
obj = Range(Cell1, Cell2)
```

Parameters:

If Syntax 1 is used, **Cell1** (type: **String**) specifies the cell or cell range. (**Cell2** should be omitted.)

If Syntax 2 is used, **Cell1** specifies the left top corner and **Cell2** the right bottom corner of the cell range.

**Cell2** (optional; type: **String**) should be used only if **Cell1** refers to an individual cell.

Examples for syntax 1:

```
Range("A1:B20")' Cells A1 to B20
Range("A1")' Only cell A1
Range("A:A")' The whole column A
Range("3:3")' The whole row 3
Range("Summer")' Range labeled "Summer"
```

Example for syntax 2:

```
Range("A1", "B20")' Cells A1 to B20
```

Example:

```
' Select the cells from A1 to B20 in the active worksheet
pm.ActiveSheet.Range("A1:B20").Select
```

**AutoFilter** (pointer to object)

Data type: **Object**

Returns the **AutoFilter** object that you can use to access the AutoFilter of the worksheet

**Application** (pointer to object)

Returns the **Application** object

**Parent** (pointer to object)

Returns the parent object, i.e. **Sheets**

**Activate** (method)

Makes the worksheet become the active worksheet.

Syntax:
Activate
Parameters:
none
Return type:
none
Example:

' Bring the first sheet of the active document to the front
pm.ActiveWorkbook.Sheets(1).Activate

Calculate (method)
Re-calculates the worksheet (similar to the menu command Tools > Recalculate in PlanMaker, but the menu command re-calculates all worksheets in a workbook).
Syntax:
Calculate
Parameters:
none
Return value:
none
Example:

' Re-calculate the first worksheet
pm.ActiveWorkbook.Sheets(1).Calculate

Delete (method)
Deletes the worksheet from the document.
Syntax:
Delete
Parameters:
none
Return type:
none
Example:

' Delete the first sheet from the active document
pm.ActiveWorkbook.Sheets(1).Delete
**Move (method)**

Changes the position of the worksheet within the other worksheets.

Syntax:

```
Move Index
```

Parameters:

- **Index** (type: **Long**) indicates the target position.

Return type: none

Example:

```
' Move the active worksheet to the third position
pm.ActiveSheet.Move 3
```

**Select (method)**

Selects all cells in the worksheet (corresponds to the menu command **Edit > Select all** in PlanMaker).

Syntax:

```
Select
```

Parameters:

- none

Return type: none

Example:

```
' Alle Zellen im aktuellen Arbeitsblatt selektieren
pm.ActiveSheet.Select
```

**ShowAllData (method)**

Makes all cells that are currently hidden by an AutoFilter visible again. Corresponds to clicking the entry "(All)" in the drop-down menu that appears when you click on the arrow button of an AutoFilter.

---

**PageSetup (object)**

Access paths:
- **Application** → **Workbooks** → **Item** → **Sheets** → **Item** → **PageSetup**
The `PageSetup` object contains the page settings of the `Sheet` object to which it belongs. You can use it to get or set the paper format (page size, margins, print orientation, etc) of an individual worksheet.

Each worksheet in a document has exactly one instance of the `PageSetup` object. It is accessed through the `Sheet.PageSetup` object:

```vbnet
' Set the left margin of the active sheet to 2cm
pm.ActiveSheet.PageSetup.LeftMargin = pm.CentimetersToPoints(2)
```

Hint: You can define different page settings for each individual worksheet in a document.

Properties, objects, collections, and methods:

Properties:
- LeftMargin
- RightMargin
- TopMargin
- BottomMargin
- HeaderMargin
- FooterMargin
- PageHeight
- PageWidth
- Orientation
- PaperSize
- PrintComments
- CenterHorizontally
- CenterVertically
- Zoom
- FirstPageNumber
- PrintGridlines
- PrintHeadings
- Order
- PrintArea
- PrintTitleRows
- PrintTitleColumns

Objects:
- Application → `Application`
- Parent → `Sheet`
**LeftMargin (property)**

Data type: Single

Gets or sets the left page margin of the worksheet in points (1 point corresponds to 1/72 inches).

**RightMargin (property)**

Data type: Single

Gets or sets the right page margin of the worksheet in points (1 point corresponds to 1/72 inches).

**TopMargin (property)**

Data type: Single

Gets or sets the top page margin of the worksheet in points (1 point corresponds to 1/72 inches).

**BottomMargin (property)**

Data type: Single

Gets or sets the bottom page margin of the worksheet in points (1 point corresponds to 1/72 inches).

**HeaderMargin (property)**

Data type: Single

Gets or sets the distance between the header and the top edge of the sheet in points (1 point corresponds to 1/72 inches).

**FooterMargin (property)**

Data type: Single

Gets or sets the distance between the footer and the bottom edge of the sheet in points (1 point corresponds to 1/72 inches).

**PageHeight (property)**

Data type: Single

Gets or sets the page height of the worksheet in points (1 point corresponds to 1/72 inches).

If you set this property, the **PaperSize** property (see below) will be automatically changed to a corresponding paper format.
**PageWidth (property)**

Data type: **Single**

Gets or sets the page width of the worksheet in points (1 point corresponds to 1/72 inches).

If you set this property, the **PageSize** property (see below) will be automatically changed to a corresponding paper format.

---

**Orientation (property)**

Data type: **Long** (**SmoOrientation**)  

 Gets or sets the page orientation of the worksheet. The following constants are allowed:

```plaintext
smoOrientLandscape = 0 ' Landscape  
smoOrientPortrait  = 1 ' Portrait
```

---

**PageSize (property)**

Data type: **Long** (**SmoPaperSize**)  

Gets or sets the page size of the worksheet. The following constants are allowed:

```plaintext
smoPaperCustom    = -1  
smoPaperLetter    = 1  
smoPaperLetterSmall  = 2  
smoPaperTabloid   = 3  
smoPaperLedger    = 4  
smoPaperLegal     = 5  
smoPaperStatement = 6  
smoPaperExecutive = 7  
smoPaperA3        = 8  
smoPaperA4        = 9  
smoPaperA4Small   = 10  
smoPaperA5        = 11  
smoPaperB4        = 12  
smoPaperB5        = 13  
smoPaperFolio     = 14  
smoPaperQuarto    = 15  
smoPaper10x14     = 16  
smoPaper11x17     = 17  
smoPaperNote      = 18  
smoPaperEnvelope9 = 19  
smoPaperEnvelope10= 20  
smoPaperEnvelope11= 21  
smoPaperEnvelope12= 22  
smoPaperEnvelope14= 23  
smoPaperCSheet    = 24  
smoPaperDSheet    = 25  
smoPaperESheet    = 26  
smoPaperEnvelopeDL= 27  
smoPaperEnvelopeC5= 28  
smoPaperEnvelopeC3= 29
```
<table>
<thead>
<tr>
<th>smoPaperEnvelopeC4</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoPaperEnvelopeC6</td>
<td>31</td>
</tr>
<tr>
<td>smoPaperEnvelopeC65</td>
<td>32</td>
</tr>
<tr>
<td>smoPaperEnvelopeB4</td>
<td>33</td>
</tr>
<tr>
<td>smoPaperEnvelopeB5</td>
<td>34</td>
</tr>
<tr>
<td>smoPaperEnvelopeB6</td>
<td>35</td>
</tr>
<tr>
<td>smoPaperEnvelopeItaly</td>
<td>36</td>
</tr>
<tr>
<td>smoPaperEnvelopeMonarch</td>
<td>37</td>
</tr>
<tr>
<td>smoPaperEnvelopePersonal</td>
<td>38</td>
</tr>
<tr>
<td>smoPaperFanfoldUS</td>
<td>39</td>
</tr>
<tr>
<td>smoPaperFanfoldStdGerman</td>
<td>40</td>
</tr>
<tr>
<td>smoPaperFanfoldLegalGerman</td>
<td>41</td>
</tr>
</tbody>
</table>

### PrintComments

**Data type:** Long (PmPrintLocation)

Gets or sets the setting whether comments should be printed in the worksheet. Corresponds to the setting "Comments" in the dialog box of the File > Page Setup menu command, Options tab. The following constants are allowed:

<table>
<thead>
<tr>
<th>pmPrintNoComments</th>
<th>0 ' Don't print comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmPrintInPlace</td>
<td>1 ' Print comments</td>
</tr>
</tbody>
</table>

### CenterHorizontally

**Data type:** Boolean

Gets or sets the setting whether the worksheet should be centered horizontally when printing. Corresponds to the setting "Center horizontally" in the dialog box of the File > Page Setup menu command, Options tab

### CenterVertically

**Data type:** Boolean

Gets or sets the setting whether the worksheet should be centered vertically when printing. Corresponds to the setting "Center vertically" in the dialog box of the File > Page Setup menu command, Options tab

### Zoom

**Data type:** Long

Gets or sets the zoom level with which the worksheet should be printed. Corresponds to the setting "Scaling" in the dialog box of the File > Page Setup menu command, Options tab

### FirstPageNumber

**Data type:** Long

Gets or sets the page number for the first page when printing. You can pass the value `pmAutomatic` to give the first page the page number 1. Corresponds to the setting "Page number" in the dialog box of the `File > Page Setup` menu command, **Options** tab

**PrintGridlines**

Data type: **Boolean**

Gets or sets the setting whether the grid lines of the worksheet should be printed. Corresponds to the setting "Grid lines" in the dialog box of the `File > Page Setup` menu command, **Options** tab

**PrintHeadings**

Data type: **Boolean**

Gets or sets the setting whether the row and column headers of the worksheet should be printed. Corresponds to the setting "Row and column headers" in the dialog box of the `File > Page Setup` menu command, **Options** tab

**Order**

Data type: **Long** (PmOrder)

Gets or sets the printing order for multi-page worksheets. Corresponds to the setting "Print order" in the dialog box of the `File > Page Setup` menu command, **Options** tab

The possible values are:

- `pmOverThenDown` = 0 ' From left to right
- `pmDownThenOver` = 1 ' From top to bottom

**PrintArea**

Data type: **String**

Gets or sets the print area of the worksheet. Corresponds to the menu command `File > Print Area > Define Print Area`.

If you get an empty string, no print area is currently defined. If you pass an empty string, the existing print area will be removed.

**PrintTitleRows**

Data type: **String**

Gets or sets the setting which rows of the worksheet are to be repeated on each page of the printout. Corresponds to the setting "Repeated rows" in the dialog box of the `File > Page Setup` menu command, **Options** tab

Example:
' Repeat the rows 2 to 5 of the active worksheet
pm.ActiveSheet.PageSetup.PrintTitleRows = "2:5"

PrintTitleColumns

Data type: String

Gets or sets the setting which columns of the worksheet are to be repeated on each page of the printout. Corresponds to the setting "Repeated columns" in the dialog box of the File > Page Setup menu command, Options tab

Example:

' Repeat the columns A to C of the active worksheet
pm.ActiveSheet.PageSetup.PrintTitleColumns = "A:C"

Application (pointer to object)

Data type: Object

Returns the Application object

Parent (pointer to object)

Data type: Object

Returns the parent object, i.e. an object of the type Sheet

Range (object)

Access paths (for arbitrary cell ranges):
- Application → Workbooks → Item → Sheets → Item → Range
- Application → Workbooks → ActiveSheet → Range
- Application → ActiveWorkbook → ActiveSheet → Range
- Application → ActiveSheet → Range
- Application → Range

Access paths (for entire table rows):
- Application → Workbooks → Item → Sheets → Item → Rows → Item
- Application → Workbooks → ActiveSheet → Rows → Item
- Application → ActiveWorkbook → ActiveSheet → Rows → Item
- Application → ActiveSheet → Rows → Item
- Application → Rows → Item

Access paths (for entire table columns):
- Application → Workbooks → Item → Sheets → Item → Columns → Item
- Application → Workbooks → ActiveSheet → Columns → Item
BasicMaker and PlanMaker

Access paths (for the currently selected cells):
- Application → ActiveWorkbook → ActiveSheet → Columns → Item
- Application → ActiveSheet → Columns → Item
- Application → Columns → Item

Access paths (for the currently selected cells):
- Application → Workbooks → Item → Sheets → Item → Selection
- Application → Workbooks → ActiveSheet → Selection
- Application → ActiveWorkbook → ActiveSheet → Selection
- Application → ActiveSheet → Selection
- Application → Selection

1 Description

Range represents a certain cell range in a worksheet (Sheet). This range can cover an arbitrary number of cells, from one cell to the whole worksheet.

You can use a Range object to get and set among other things the contents and formatting of the cells in the represented range, to copy the range to the clipboard, etc.

2 Access to the object

There are many ways to access a Range object:

1. You can access the Range object directly by indicating the start and end cell. Example:

```vba
' Add a comment to the cell C10
pm.ActiveSheet.Range("C10").Comment = "My comment"
```

2. The Sheet.Selection property returns a Range object that represents the active selection, i.e. the currently selected cells. Example:

```vba
' Format the current selection with the font "Courier New"
pm.ActiveSheet.Selection.Font.Name = "Courier New"
```

3. The Rows collection returns Range objects that represent an entire row of the worksheet. You can access the Rows collection through the Sheet.Rows object. Example:

```vba
' Hide the row 2 in the worksheet
pm.ActiveSheet.Rows(2).Hidden = True
```

4. The Columns collection returns Range objects that represent an entire column of the worksheet. You can access the Columns collection through the Sheet.Columns object. Example:

```vba
' Hide the column C (= third column) in the worksheet
pm.ActiveSheet.Columns(3).Hidden = True
```

No matter how you access the Range object, you can apply all the properties and methods described below.

3 Properties, objects, collections, and methods

Properties:
- Item (default property)
BasicMaker and PlanMaker

- Row R/O
- Column R/O
- Name
- Formula
- Value
- Value2
- Horizontal Alignment
- Vertical Alignment
- Wrap Text
- Left Padding
- Right Padding
- Top Padding
- Bottom Padding
- Merge Cells
- Orientation
- Vertical Text
- Page Break Col
- Page Break Row
- Comment
- Locked
- Formula Hidden
- Cell Hidden
- Non Printable
- Hidden
- Row Height
- Column Width

Objects:
- Cells → Range
- Range → Range
- Workbook → Workbook
- Sheet → Sheet
- Number Formatting → Number Formatting
- Font → Font
- Shading → Shading
- Validation → Validation
- Application → Application
- Parent → Sheet

Collections:
- Borders → Borders
- Format Conditions → Format Conditions

Methods:
- Auto Fit
- Apply Formatting
- Select
- Copy
- Cut
- Paste
- Insert
BasicMaker and PlanMaker

- Delete
- Clear
- ClearContents
- ClearFormats
- ClearConditionalFormatting
- ClearComments
- ClearInputValidation
- AutoFilter

**Item (property, R/O)**

Data type: **Object**

Returns a Range object that consists of just one individual cell from the given Range object. You can use it to address each cell of a Range object individually.

Syntax:

```
Item(RowIndex, ColumnIndex)
```

Parameters:

- **RowIndex** (Type: **Long**) indicates the row number of the desired cell (as an offset to the top left cell in the range).
- **ColumnIndex** (optional; Type: **Long**) indicates the column number of the desired cell (as an offset to the top left cell in the range).

Examples:

```
' Fill the first cell of the Range object with the value 42
pm.ActiveSheet.Range("B5:B10").Item(1, 1).Value = 42

' Shorter variant (Item is the default property of the Range object)
pm.ActiveSheet.Range("B5:B10")(1, 1).Value = 42

' Change the format for the first cell of the current selection
pm.ActiveSheet.Selection.Item(1, 1).Font.Size = 24

' Shorter again, using the default property
pm.ActiveSheet.Selection(1, 1).Font.Size = 24
```

**Row (property, R/O)**

Data type: **Long**

Returns the row number of the top row in the given cell range.

If multiple cell ranges are selected, the value for the first selected range will be returned.

**Column (property, R/O)**

Data type: **Long**

Returns the column number of the left-most column in the given cell range.
If multiple cell ranges are selected, the value for the first selected range will be returned.

**Name (property)**

Data type: **String**

Gets or sets the name of the range. Corresponds to the PlanMaker menu command **Table > Name** that you can use it to create and retrieve named cell ranges.

**Formula (property)**

Data type: **String**

Gets or sets the formulas of the cells in the range.

Example:

```
' Enter the same formula for the cells A1, A2, B1 and B2
pm.ActiveSheet.Range("A1:B2").Formula = "+CHAR(64)"
```

Note: If the formula doesn't start with "+" or "+", it will be entered as a literal value (number, string or date).

**Value (property)**

Data type: **String**

Gets or sets the values of the cells in the cell range. Dates will be interpreted as a string (see also **Value2** below).

Example:

```
' In Zellen A1, A2, B1 und B2 den Wert 42 eintragen
pm.ActiveSheet.Range("A1:B2").Value = 42
```

**Value2 (property)**

Data type: **String**

Gets or sets the values of the cells in the cell range. Dates will be interpreted as a number (see also **Value**).

**Difference between Formula, Value und Value2**

To get or set the content of cells, you can use any of the three properties described above: **Formula**, **Value**, or **Value2**. The difference between them is as follows:

- If the cell contains a calculation, **Formula** returns the formula text, for example, "+=ABS(A1)"
- **Value** and **Value2**, on the other hand, always return the result of the calculation. They only differ in the interpretation of *date values*: while **Value** returns a string, **Value2** returns the serial date number.
**HorizontalAlignment (property)**

Data type: `Long` (PmHAlign)

Gets or sets the horizontal alignment of the cells in the cell range. The possible values are:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmHAlignGeneral</td>
<td>0 ' Default</td>
</tr>
<tr>
<td>pmHAlignLeft</td>
<td>1 ' Left</td>
</tr>
<tr>
<td>pmHAlignRight</td>
<td>2 ' Right</td>
</tr>
<tr>
<td>pmHAlignCenter</td>
<td>3 ' Centered</td>
</tr>
<tr>
<td>pmHAlignJustify</td>
<td>4 ' Justified</td>
</tr>
<tr>
<td>pmHAlignCenterAcrossSelection</td>
<td>5 ' Centered across columns</td>
</tr>
</tbody>
</table>

**VerticalAlignment (property)**

Data type: `Long` (PmVAlign)

Gets or sets the vertical alignment of the cells in the cell range. The possible values are:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmVAlignTop</td>
<td>0 ' Top</td>
</tr>
<tr>
<td>pmVAlignCenter</td>
<td>1 ' Centered</td>
</tr>
<tr>
<td>pmVAlignBottom</td>
<td>2 ' Bottom</td>
</tr>
<tr>
<td>pmVAlignJustify</td>
<td>3 ' Justified</td>
</tr>
</tbody>
</table>

**WrapText (property)**

Data type: `Long`

Gets or sets the setting "Wrap text" for the cells in the cell range. Corresponds to the Word-wrap option in the dialog box of PlanMaker's Format > Cell menu command.

**LeftPadding (property)**

Data type: `Single`

Gets or sets the left inner margin of the cells, measured in points (1 point corresponds to 1/72 inches).

**RightPadding (property)**

Data type: `Single`

Gets or sets the right inner margin of the cells, measured in points (1 point corresponds to 1/72 inches).

**TopPadding (property)**

Data type: `Single`

Gets or sets the top inner margin of the cells, measured in points (1 point corresponds to 1/72 inches).
**BottomPadding (property)**

Data type: **Single**

Gets or sets the bottom inner margin of the cells, measured in points (1 point corresponds to 1/72 inches).

**MergeCells (property)**

Data type: **Long**

Gets or sets the setting "Join cells" in the dialog box of PlanMaker's **Format > Cell** menu command: All cells of the cell range are merged to one big cell (**True**) or the cell connection will be removed again (**False**).

**Orientation (property)**

Data type: **Long**

Gets or sets the print orientation of the cells in the cell range. The possible values are: 0, 90, 180 and -90 corresponding to the respective rotation angle.

Hint: The value 270 will be automatically converted to -90.

**VerticalText (property)**

Data type: **Long**

Gets or sets the setting "Vertical text" in the dialog box of PlanMaker's **Format > Cell** menu command.

**PageBreakCol (property)**

Data type: **Boolean**

Gets or sets the setting whether a page break should be performed left of the range.

If you set this property to **True**, a vertical page break will be performed between the cell range and the column left of it. If you set it to **False**, the break will be removed again.

Corresponds to the menu command **Insert > Page Break > Insert before Column**.

**PageBreakRow (property)**

Data type: **Boolean**

Gets or sets the setting whether a page break should be performed above the range.

If you set this property to **True**, a horizontal page break will be performed above the cell range. If you set it to **False**, the break will be removed again.

Corresponds to the menu command **Insert > Page Break > Insert before Column**.
**Comment (property)**

Data type: String

Gets or sets the comments for the cells in the cell range. When reading this property for cells with different comments or no comments at all, an empty string will be returned.

Corresponds to the comments that you can create and edit with PlanMaker's Insert > Comment menu command.

**Locked (property)**

Data type: Long

Gets or sets the setting "Protect cell" corresponding to the option with the same name in the dialog of PlanMaker's Format > Cell menu command (Protection tab).

**FormulaHidden (property)**

Data type: Long

Gets or sets the setting "Hide formula" corresponding to the option with the same name in the dialog of PlanMaker's Format > Cell menu command (Protection tab).

**CellHidden (property)**

Data type: Long

Gets or sets the setting "Hide cell" corresponding to the option with the same name in the dialog of PlanMaker's Format > Cell menu command (Protection tab).

**Nonprintable (property)**

Data type: Long

Gets or sets the setting "Do not print cell" corresponding to the option with the same name in the dialog of PlanMaker's Format > Cell menu command (Protection tab).

**Hidden (property)**

Data type: Long

Gets or sets the setting whether whole columns or rows should be hidden, analogically to PlanMaker's menu commands Table > Column > Hide and Table > Row > Hide.

The specified range must contain one or more entire rows or one or more columns. Some examples:

- To reference column A, use the notation A:A.
- To reference the columns from A to C, use the notation A:C.
To reference row 3, use the notation 3:3.

To reference the rows 3 to 7, use the notation 3:7.

Examples:

' Hide the column A
pm.ActiveSheet.Range("A:A").Hidden = True

' Hide the columns A, B and C
pm.ActiveSheet.Range("A:C").Hidden = True

' Hide the row 3
pm.ActiveSheet.Range("3:3").Hidden = True

' Hide the rows from 3 to 7
pm.ActiveSheet.Range("3:7").Hidden = True

Whole rows can also be addressed through the Rows collection and whole columns through the Columns collection:

' Hide the column A (= the first column)
pm.ActiveSheet.Columns(1).Hidden = True

' Hide the row 3
pm.ActiveSheet.Rows(3).Hidden = True

**RowHeight (property)**

Data type: **Long**

Gets or sets the row height in points (1 point corresponds to 1/72 inches).

The specified range must contain one or more entire rows. For notation examples, see the Hidden property.

**ColumnWidth (property)**

Data type: **Long**

Gets or sets the column width in points (1 point corresponds to 1/72 inches).

The specified range must contain one or more entire columns. For notation examples, see the Hidden property.

**Cells (pointer to object)**

Data type: **Object**

Returns a Range object with the elements corresponding exactly to those of the source range. Use this if you want to access the individual cells of a cell range through a loop variable. Example:

' Fill all cells of the range with values
Dim row, col as Integer
Dim rng as Object
Set rng = pm.ActiveSheet.Range("A1:F50")
For row = 1 To rng.Rows.Count
    For col = 1 To rng.Columns.Count
        rng.Cells.Item(row, col).Value = 42
    Next col
Next row

**Range (pointer to object)**

Data type: **Object**

Returns a **Range** object for the specified parameters. You can use this to construct a "sub-range" for a range and get or set the values for it, for example.

Note: Please note that you have to use relative cell addresses here. For example, if you pass the cell address B2 as a parameter, it does not specify the cell with the absolute coordinates B2, but the cell that is located in the second row and second column of the original range (see example).

**Syntax 1:**

```
obj = Range(Cell1)
```

**Syntax 2:**

```
obj = Range(Cell1, Cell2)
```

**Parameters:**

If Syntax 1 is used, **Cell1** (type: **String**) specifies the cell or cell range. (**Cell2** should be omitted.)

If Syntax 2 is used, **Cell1** specifies the left top corner and **Cell2** the right bottom corner of the cell range. **Cell2** (optional; type: **String**) should be used only if **Cell1** refers to an individual cell.

**Examples for syntax 1:**

- Range("A1:B20") ' Cells A1 to B20
- Range("A1") ' Only cell A1
- Range("A:A") ' The whole column A
- Range("3:3") ' The whole row 3
- Range("Summer") ' Range labeled "Summer"

**Example for syntax 2:**

- Range("A1", "B20") ' Cells A1 to B20

**Example:**

```
' Selects the cell D4
pm.ActiveSheet.Range("B2:F20").Range("C3:C3").Select
```

**Workbook (pointer to object)**

Data type: **Object**

Returns the **Workbook** object that you can use to access the workbook (= document) assigned to the cell range.
Sheet (pointer to object)
Data type: Object
Returns the Sheet object that you can use to access the worksheet assigned to the cell range

NumberFormatting (pointer to object)
Data type: Object
Returns the NumberFormatting object that you can use to access the number formatting of the cells in the cell range

Font (pointer to object)
Data type: Object
Returns the Font object that you can use to access the character formatting of the cells in the cell range

Shading (pointer to object)
Data type: Object
Returns the Shading object that you can use to access the shading of the cells in the cell range

Validation (pointer to object)
Data type: Object
Returns the Validation object that you can use to access the input validation in the cell range

Application (pointer to object)
Data type: Object
Returns the Application object

Parent (pointer to object)
Data type: Object
Returns the parent object, i.e. an object of the type Sheet

Borders (pointer to collection)
Data type: Object
Returns the **Borders** collection, which represents the four border lines of the cells in a range. You can use this collection to get or change the line settings (thickness, color, etc).

### FormatConditions (pointer to collection)

Data type: **Object**

Returns the **FormatConditions** collection, a collection of all conditional formattings in the cell range.

### AutoFit (method)

Set the row(s) or column(s) to optimal height/width. Corresponds to the menu commands **Table > Row > Optimum Height** and **Table > Column > Optimum Width**.

The given range must cover *entire* rows or columns.

Syntax:

```
AutoFit
```

Parameters:

- none

Return type:

- none

Examples:

```vba
' Set the column A to optimal width
pm.ActiveSheet.Range("A:A").AutoFit

' Set the columns A, B and C to optimal width
pm.ActiveSheet.Range("A:C").AutoFit

' Set the row 3 to optimal width
pm.ActiveSheet.Range("3:3").AutoFit

' Set the rows from 3 to 7 to optimal width
pm.ActiveSheet.Range("3:7").AutoFit

' Set the column A (= the first column) to optimal width
pm.ActiveSheet.Columns(1).AutoFit

' Set the row 3 to optimal width
pm.ActiveSheet.Rows(3).AutoFit
```

### ApplyFormatting (method)

Usually, PlanMaker executes formatting commands instantaneously.

However, if you want to apply multiple formatting changes consecutively to an individual range, you can accelerate their execution by setting the worksheet property **ManualApply** (see the **Workbook** object) to True.
In this case you are responsible for notifying PlanMaker about the end of the formatting commands. To do this, enclose the formatting commands in a `With` structure and indicate their end using the `ApplyFormatting` method (see example).

Syntax:

```
ApplyFormatting
```

Parameters:

- none

Return type:

- none

An example using automatic formatting:

```vba
Sub Main
    Dim pm as Object
    Set pm = CreateObject("PlanMaker.Application")
    pm.Visible = True
    With pm.ActiveSheet.Range("A1:C3")
        .Font.Name = "Arial"
        .Font.Size = 14
        .Font.Bold = TRUE
        .NumberFormatting.Type = pmNumberPercentage
        .NumberFormatting.Digits = 2
    End With
    Set pm = Nothing
End Sub
```

An example using manual formatting:

```vba
Sub Main
    Dim pm as Object
    Set pm = CreateObject("PlanMaker.Application")
    pm.Visible = True

    pm.ActiveWorkbook.ManualApply = True
    With pm.ActiveSheet.Range("A1:C3")
        .Font.Name = "Arial"
        .Font.Size = 14
        .Font.Bold = TRUE
        .NumberFormatting.Type = pmNumberPercentage
        .NumberFormatting.Digits = 2
        .ApplyFormatting
    End With
    pm.ActiveWorkbook.ManualApply = False
    Set pm = Nothing
End Sub
```
**Select (method)**

Selects the cell range specified by the Range command.

Syntax:

```
Select [Add]
```

Parameters:

**Add** (optional; type: Boolean): If False or omitted, the new selection replaces the existing one. Otherwise, the new selection will be added to the old one.

Return type:

none

Examples:

```
' Select the range B2:D4
pm.ActiveSheet.Range("B2:D4").Select

' Extend the current selection by the range F6:F10
pm.ActiveSheet.Range("F6:F10").Select True
```

**Deselecting:** If you would like to remove any existing selections, so that nothing is selected, simply select a range consisting of only one cell:

```
' Set the cell frame into cell A1 (without selecting it)
pm.ActiveSheet.Range("A1").Select
```

**Copy (method)**

Copies the cells of a range to the clipboard.

Syntax:

```
Copy
```

Parameters:

none

Return type:

none

**Cut (method)**

Cuts the cells of a range to the clipboard.

Syntax:

```
Cut
```
Paste (method)

Pastes the content of the clipboard to the range. If the range consists of more than one cell, the content of the clipboard will be cut or extended so that it exactly matches the range.

Syntax:

```
Paste
```

Parameters:

none

Return type:

none

Insert (method)

Inserts an empty cell area sized equally to the cell range defined by the Range object.

PlanMaker behaves in this case as if a cell range was selected and then the menu command Table > Insert cells was invoked.

Syntax:

```
Insert [Shift]
```

Parameters:

Shift (optional; type: Long or PmInsertShiftDirection): Indicates into which direction the existing cells will be moved. The possible values are:

- pmShiftDown = 0 ' Downwards
- pmShiftToRight = 1 ' To the right

If this parameter is omitted, the value pmShiftDown is taken.

Return type:

none

Delete (method)

Deletes all cells from the cell range defined by the Range object. The rest of the cells in the table are shifted accordingly to fill the gap.
PlanMaker behaves in this case as if a cell range was selected and then the menu command **Table > Delete cells** was invoked.

Syntax:

```plaintext
Delete [Shift]
```

**Parameters:**

- `Shift` (optional; type: `Long` or `PmDeleteShiftDirection`): Indicates into which direction the existing cells will be moved. The possible values are:
  - `pmShiftUp` = 0 ' Upwards
  - `pmShiftToLeft` = 1 ' To the left

  If this parameter is omitted, the value `pmShiftUp` is taken.

**Return type:**

- `none`

---

### Clear (method)

Deletes the contents and formattings of all cells in the cell range defined by the **Range** object.

**Syntax:**

```plaintext
Clear
```

**Parameters:**

- `none`

**Return type:**

- `none`

---

### ClearContents (method)

Deletes the contents of all cells in the cell range defined by the **Range** object. Their formattings are retained.

**Syntax:**

```plaintext
ClearContents
```

**Parameters:**

- `none`

**Return type:**

- `none`

---

### ClearFormats (method)

Deletes the formattings of all cells in the cell range defined by the **Range** object (except for conditional formattings). Their cell contents are retained.
BasicMaker and PlanMaker

Syntax:

ClearFormats

Parameters:

none

Return type:

none

ClearConditionalFormatting (method)

Deletes the conditional formattings of all cells in the cell range defined by the Range object. Their cell contents are retained.

Syntax:

ClearConditionalFormatting

Parameters:

none

Return type:

none

ClearComments (method)

Deletes all comments in the cell range defined by the Range object.

Syntax:

ClearComments

Parameters:

none

Return type:

none

ClearInputValidation (method)

Removes all input validation settings in the cell range defined by the Range object.

Syntax:

ClearInputValidation

Parameters:

none
AutoFilter (method)

Activates, deactivates, or configures an AutoFilter for the range.

Syntax:

```
AutoFilter [Field], [Criteria1], [Operator], [Criteria2], [VisibleDropDown]
```

Parameters:

- **Note:** If you do not indicate any parameters, any existing AutoFilter for the given range will be switched off (see examples below).

- **Field** (optional; type: `Long`) indicates the number of the column inside the AutoFilter area after which want to filter the data. If you omit this parameter, the number 1 (i.e., the first column) will be taken.

- **Criteria1** (optional; type: `Variant`) indicates the criterion of the filter – for example "red" if you want to filter for the value "red", or ">3" to filter for values greater than three. Exception: If one of the operators `pmTop10Items`, `pmTop10Percent`, `pmBottom10Items`, or `pmBottom10Percent` is used, then `Criteria1` contains a numeric value indicating how many values to display. If you omit the `Criteria1` parameter, all rows will be shown.

- **Operator** (optional; type: `Long` or `PmAutoFilterOperator`) specifies the type of filtering:

  - `pmAll` = 0 ' Show all rows (i.e., do not filter)
  - `pmAnd` = 1 ' `Criteria1` and `Criteria2` must be matched
  - `pmBottom10Items` = 2 ' Show only the n lowest values*
  - `pmBottom10Percent` = 3 ' Show only the bottom n percent values*
  - `pmOr` = 4 ' `Criteria1` or `Criteria2` must be matched
  - `pmTop10Items` = 5 ' Show only the n highest values*
  - `pmTop10Percent` = 6 ' Show only the top n percent values*
  - `pmBlank` = 7 ' Show only blank rows
  - `pmNonblank` = 8 ' Show only non-blank rows

  * In these cases, `Criteria1` must contain the value for "n".

- **Criteria2** (optional; type: `Variant`) indicates the second criterion of the filter – provided that `Operator` is set to `pmAnd` or `pmOr` so that two criteria can be given.

- **VisibleDropDown** (optional; type: `Boolean`) allows you to indicate whether drop-down arrows should be shown for the filter (`True`) or not (`False`). If you omit this parameter, the value `True` is taken.

Return type: none

Examples:

```
pm.Application.ActiveSheet.Range("A1:D10").AutoFilter 1, pmTop10Items, 5 orders PlanMaker to display only the first 5 items from the column A1.
```

If you do not specify any parameters, any existing AutoFilter for the given range will be switched off.

Example:

## Rows (collection)

Access paths for the rows of a worksheet:
- **Application ➔ Workbooks ➔ Item ➔ Sheets ➔ Item ➔ Rows**
- **Application ➔ Workbooks ➔ Item ➔ ActiveSheet ➔ Rows**
- **Application ➔ ActiveWorkbook ➔ ActiveSheet ➔ Rows**
- **Application ➔ ActiveSheet ➔ Rows**
- **Application ➔ Rows**

Access paths for the rows of arbitrary cell ranges:
- **Application ➔ Workbooks ➔ Item ➔ Sheets ➔ Item ➔ Range ➔ Rows**
- **Application ➔ Workbooks ➔ ActiveSheet ➔ Range ➔ Rows**
- **Application ➔ ActiveWorkbook ➔ ActiveSheet ➔ Range ➔ Rows**
- **Application ➔ ActiveSheet ➔ Range ➔ Rows**
- **Application ➔ Range ➔ Rows**

Access paths for the rows of entire table columns:
- **Application ➔ Workbooks ➔ Item ➔ Sheets ➔ Item ➔ Columns ➔ Item ➔ Rows**
- **Application ➔ Workbooks ➔ ActiveSheet ➔ Columns ➔ Item ➔ Rows**
- **Application ➔ ActiveWorkbook ➔ ActiveSheet ➔ Columns ➔ Item ➔ Rows**
- **Application ➔ ActiveSheet ➔ Columns ➔ Item ➔ Rows**
- **Application ➔ Columns ➔ Item ➔ Rows**

Access paths for the rows in the currently selected cells:
- **Application ➔ Workbooks ➔ Item ➔ Sheets ➔ Item ➔ Selection ➔ Rows**
- **Application ➔ Workbooks ➔ ActiveSheet ➔ Selection ➔ Rows**
- **Application ➔ ActiveWorkbook ➔ ActiveSheet ➔ Selection ➔ Rows**
- **Application ➔ ActiveSheet ➔ Selection ➔ Rows**
- **Application ➔ Selection ➔ Rows**

### Description

**Rows** is a collection of all rows in a worksheet or a cell range. The individual elements of this collection are of the type **Range**, which allows you to apply all properties and methods available for **Range** objects to them.

### Access to the object

**Rows** can be a child object of two different objects:
- If used as child object of a **Sheet** object, it represents all rows of this worksheet
- If used as child object of a **Range** object, it represents all rows of this cell range

Examples for **Rows** as a child object of a **Sheet** object:

' Display the number of rows in the current worksheet
BasicMaker and PlanMaker

MsgBox pm.ActiveSheet.Rows.Count

' Format the first row in the worksheet in boldface
pm.ActiveSheet.Rows(1).Font.Bold = True

Examples for Rows as a child object of a Range object:

' Display the number of rows in the specified range
MsgBox pm.ActiveSheet.Range("A1:F50").Rows.Count

' Format the first row in a range in boldface

3 Properties, objects, collections, and methods

Properties:
- Count R/O

Objects:
- Item → Range (default object)
- Application → Application
- Parent → Sheet oder Range

Count (property, R/O)

Data type: Long

Returns the number of Range objects in the Rows collection – in other words: the number of the rows in the worksheet or cell range

Item (pointer to object)

Data type: Object

Returns an individual Range object, ie a cell range that covers one individual row

Which Range object you get depends on the numeric value that you pass to Item: 1 for the first row, 2 for the second, etc.

Example:

' Set the font for the second row of the worksheet to Courier New
pm.ActiveSheet.Rows.Item(2).Font.Name = "Courier New"

Application (pointer to object)

Returns the Application object
**Parent (pointer to object)**

Returns the parent object, i.e. an object that is either of the type **Sheet** or **Range**.

---

**Columns (collection)**

Access paths for the columns of a worksheet:

- **Application** → **Workbooks** → **Item** → **Sheets** → **Item** → **Columns**
- **Application** → **Workbooks** → **Item** → **ActiveSheet** → **Columns**
- **Application** → **ActiveWorkbook** → **ActiveSheet** → **Columns**
- **Application** → **ActiveSheet** → **Columns**

Access paths for the columns of arbitrary cell ranges:

- **Application** → **Workbooks** → **Item** → **Sheets** → **Item** → **Range** → **Columns**
- **Application** → **Workbooks** → **ActiveSheet** → **Range** → **Columns**
- **Application** → **ActiveWorkbook** → **ActiveSheet** → **Range** → **Columns**
- **Application** → **ActiveSheet** → **Range** → **Columns**
- **Application** → **Range** → **Columns**

Access paths for the columns of entire table columns:

- **Application** → **Workbooks** → **Item** → **Sheets** → **Item** → **Rows** → **Item** → **Columns**
- **Application** → **Workbooks** → **ActiveSheet** → **Rows** → **Item** → **Columns**
- **Application** → **ActiveWorkbook** → **ActiveSheet** → **Rows** → **Item** → **Columns**
- **Application** → **ActiveSheet** → **Rows** → **Item** → **Columns**
- **Application** → **Rows** → **Item** → **Columns**

Access paths for the columns in the currently selected cells:

- **Application** → **Workbooks** → **Item** → **Sheets** → **Item** → **Selection** → **Columns**
- **Application** → **Workbooks** → **ActiveSheet** → **Selection** → **Columns**
- **Application** → **ActiveWorkbook** → **ActiveSheet** → **Selection** → **Columns**
- **Application** → **ActiveSheet** → **Selection** → **Columns**
- **Application** → **Selection** → **Columns**

---

1. **Description**

**Columns** is a collection of all columns in a worksheet or a cell range. The individual elements of this collection are of the type **Range**, which allows you to apply all properties and methods available for **Range** objects to them.

2. **Access to the object**

**Columns** can be the child object of two different objects:

- If used as child object of a **Sheet** object, it represents all columns of this worksheet.
- If used as child object of a `Range` object, it represents all columns of this cell range.

Examples for `Columns` as a child object of a `Sheet` object:

```vba
' Display the number of columns in the current worksheet
MsgBox pm.ActiveSheet.Columns.Count

' Format the first column in the worksheet in boldface
pm.ActiveSheet.Columns(1).Font.Bold = True
```

Examples for `Columns` as a child object of a `Range` object:

```vba
' Display the number of columns in the specified range
MsgBox pm.ActiveSheet.Range("A1:F50").Columns.Count

' Format the first column in a range in boldface
```

### 3 Properties, objects, collections, and methods

**Properties:**
- **Count** R/O

**Objects:**
- `Item` → `Range` (default object)
- `Application` → `Application`
- `Parent` → `Sheet` oder `Range`

#### Count (property, R/O)

Data type: `Long`

Returns the number of `Range` objects in the `Columns` collection – in other words: the number of the rows in the worksheet or cell range.

#### Item (pointer to object)

Data type: `Object`

Returns an individual `Range` object, i.e., a cell range that covers one individual column.

*Which* Range object you get depends on the numeric value that you pass to `Item`: 1 for the first column, 2 for the second, etc.

Example:

```vba
' Set the font for second column in the worksheet to Courier New
pm.ActiveSheet.Columns.Item(2).Font.Name = "Courier New"
```
**BasicMaker and PlanMaker**

**Application (pointer to object)**

Returns the Application object.

**Parent (pointer to object)**

Returns the parent object, i.e. an object that is either of the type Sheet or Range.

---

**FormatConditions (collection)**

Access paths:
- Application → Workbooks → Item → Sheets → Item → Range → FormatConditions
- Application → Workbooks → ActiveSheet → Range → FormatConditions
- Application → ActiveWorkbook → ActiveSheet → Range → FormatConditions
- Application → ActiveSheet → Range → FormatConditions
- Application → Range → FormatConditions

Instead of Range, you can also use other objects and properties that return a Range object: ActiveCell, Selection, Rows(n), Columns(n) and Cells(x, y). For examples, see the Range object.

---

1 **Description**

The FormatConditions collection contains all conditional formattings of a Range object. The individual elements of this collection are of the type FormatCondition.

2 **Access to the collection**

Each Range object has exactly one instance of the FormatConditions collection. It is accessed through the RangeFormatConditions object:

```vbnet
' Display the number of conditional formattings of a range
MsgBox pm.ActiveSheet.Range("A1:B3").FormatConditions.Count
```

3 **Properties, objects, collections, and methods**

Properties:
- **Count** R/O

Objects:
- **Item** → FormatCondition (default object)
- **Application** → Application
- **Parent** → Range

Methods:
- Add
- Delete

### Count (property, R/O)

Data type: **Long**

Returns the number of **FormatCondition** objects in the **Range** object – in other words: the number of the conditional formattings in this cell range.

A cell can have up to three conditional formattings.

### Item (pointer to object)

Data type: **Object**

Returns one individual **FormatCondition** object, ie one individual conditional formatting.

Which **FormatCondition** object you get depends on the numeric value that you pass to **Item**: 1 for the first conditional formatting of the range, 2 for the second, etc.

Example:

```vbnet
' Show the formula for the second conditional formatting in the cell A1
MsgBox pm.ActiveSheet.Range("A1").FormatConditions.Item(2).Formula1
```

### Application (pointer to object)

Returns the **Application** object

### Parent (pointer to object)

Returns the parent object, i.e. **Range**

### Add (method)

Adds a new conditional formatting.

Syntax:

```
Add Type, [Operator], [Formula1], [Formula2]
```

Parameters:

- **Type** (type: **Long** or **PmFormatConditionType**) defines the type of the conditional formatting. The possible values are:
  - `pmCellValue` = 0 ' Check against a cell value
  - `pmExpression` = 1 ' Check against a formula

- **Operator** (optional; type: **Long** or **PmFormatConditionOperator**) defines the relational operator for the conditional formatting. The possible values are:
pmBetween = 0 ' is between
pmNotBetween = 1 ' is not between
pmEqual = 2 ' is equal to
pmNotEqual = 3 ' is not equal to
pmGreater = 4 ' is greater than
pmLess = 5 ' is less than
pmGreaterEqual = 6 ' is greater than or equal to
pmLessEqual = 7 ' is less than or equal to

**Formula1** (optional; type: Variant) is either a numeric value, a string containing a number, a reference to a cell, or a formula. For **pmBetween** and **pmNotBetween** it specifies the minimum, for all other operators the value.

**Formula2** (optional; type: Variant) is either a numeric value, a string containing a number, a reference to a cell, or a formula. It indicates the maximum. Has to be specified only if **pmBetween** or **pmNotBetween** is used.

Return type:

**Object** (a **FormatCondition** object that represents the new conditional formatting)

### Summary of all parameter combinations possible:

<table>
<thead>
<tr>
<th>Type</th>
<th>Operator</th>
<th>Formula1</th>
<th>Formula2</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmCellValue</td>
<td>All listed above</td>
<td>A) The value to be checked against <em>or</em></td>
<td>The maximum (only applicable when <strong>pmBetween</strong> or <strong>pmNotBetween</strong> is used)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B) The minimum (when <strong>pmBetween</strong> or <strong>pmNotBetween</strong> is used)</td>
<td></td>
</tr>
<tr>
<td>pmExpression</td>
<td>(n/a)</td>
<td>An expression that returns <strong>True</strong> if the condition is matched, otherwise returns <strong>False</strong></td>
<td>(n/a)</td>
</tr>
</tbody>
</table>

**Example:**

' Add a conditional formatting (values from 1 to 50) to cell A1
Dim newCondition as Object
Set newCondition = pm.ActiveSheet.Range("A1").FormatConditions.Add(pmCellValue, pmBetween, 1, 50)

' Set the conditional formatting to change the font color to red
newCondition.Font.Color = smoColorRed

### Delete (method)

Removes all conditional formattings from the cell range.

**Syntax:**

Delete
Parameters:
none
Return type:
none
Example:

' Remove all conditional formattings from the cells A1 and A2

FormatCondition (object)

Access paths:
- Application → Workbooks → Item → Sheets → Item → Range → FormatConditions → Item
- Application → Workbooks → ActiveSheet → Range → FormatConditions → Item
- Application → ActiveWorkbook → ActiveSheet → Range → FormatConditions → Item
- Application → ActiveSheet → Range → FormatConditions → Item

Instead of Range, you can also use other objects and properties that return a Range object: ActiveCell, Selection, Rows(n), Columns(n) and Cells(x, y). For examples, see the Range object

1 Description

A FormatCondition object represents one individual conditional formatting.

If you add conditional formattings to a cell range or delete them, the respective FormatCondition objects will be created or deleted dynamically.

2 Access to the object

The individual FormatCondition objects can be accessed solely through enumerating the elements of the corresponding FormatConditions collection

For each range there is exactly one instance of the FormatConditions collection. It is accessed through the Range.FormatConditions object:

' Show the formula of the second conditional formatting for the cell A1
MsgBox pm.ActiveSheet.Range("A1").FormatConditions.Item(2).Formula1

3 Properties, objects, collections, and methods

- Type R/O
- Operator R/O
- Formula1 R/O
Objects:
- Font → Font
- Shading → Shading
- Application → Application
- Parent → FormatConditions

Collections:
- Borders → Borders

Methods:
- Modify
- Delete

Type (property, R/O)

Data type: Long (PmFormatConditionType)

Returns the type of the conditional formatting. The possible values are:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmCellValue</td>
<td>0</td>
<td>Check against a cell value</td>
</tr>
<tr>
<td>pmExpression</td>
<td>1</td>
<td>Check against a formula</td>
</tr>
</tbody>
</table>

Operator (property, R/O)

Data type: Long (PmFormatConditionOperator)

Returns the relational operator for the conditional formatting. The possible values are:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmBetween</td>
<td>0</td>
<td>is between</td>
</tr>
<tr>
<td>pmNotBetween</td>
<td>1</td>
<td>is not between</td>
</tr>
<tr>
<td>pmEqual</td>
<td>2</td>
<td>is equal to</td>
</tr>
<tr>
<td>pmNotEqual</td>
<td>3</td>
<td>is not equal to</td>
</tr>
<tr>
<td>pmGreater</td>
<td>4</td>
<td>is greater than</td>
</tr>
<tr>
<td>pmLess</td>
<td>5</td>
<td>is less than</td>
</tr>
<tr>
<td>pmGreaterEqual</td>
<td>6</td>
<td>is greater than or equal to</td>
</tr>
<tr>
<td>pmLessEqual</td>
<td>7</td>
<td>is less than or equal to</td>
</tr>
</tbody>
</table>

Formula1 (property, R/O)

Data type: String

If the type is pmCellValue and the operator is pmBetween or pmNotBetween, returns the minimum to test against.

If the type is pmCellValue and the operator is different from pmBetween or pmNotBetween, returns the value to test against.

If the type is pmExpression, returns the calculation formula to test against.
**Formula2 (property, R/O)**

Data type: **String**

If the type is `pmCellValue` and the operator is `pmBetween` or `pmNotBetween`, returns the maximum to test against.

**Font (pointer to object)**

Data type: **Object**

Returns the **Font** object that you can use to access the character formatting that is to be changed by a conditional formatting.

Hint: Those character formattings that are not *explicitly* set by the conditional formatting will be returned as "undefined" (i.e., `smoUndefined` or an empty string). The reason is that conditional formattings are always *additive*: For example, you can hard-format cells in the font "Arial 10" and then use the conditional formatting only to add the font color "Red" – in this case only the font color will be changed by `FormatCondition.Font`.

**Shading (pointer to object)**

Data type: **Object**

Returns the **Shading** object that you can use to access the shading that is to be changed by the conditional formatting.

Please pay attention to the hint on undefined formattings at the **Font** object pointer (see above).

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **FormatConditions**.

**Borders (pointer to collection)**

Data type: **Object**

Returns the **Borders** collection which represents one of the four border lines that is to be changed by a conditional formatting. You can use these objects to get or change the line settings (thickness, color, etc).

Please pay attention to the hint on undefined formattings at the **Font** object pointer (see above).
Modify (method)

Modifies an existing conditional formatting.

Syntax:

```plaintext
Modify Type, [Operator], [Formula1], [Formula2]
```

Parameters:

- **Type** (type: `Long` or `PmFormatConditionType`) defines the type of the conditional formatting. The possible values are:
  - `pmCellValue` = 0 ' Check against a cell value
  - `pmExpression` = 1 ' Check against a formula

- **Operator** (optional; type: `Long` or `PmFormatConditionOperator`) defines the relational operator for the conditional formatting. The possible values are:
  - `pmBetween` = 0 ' is between
  - `pmNotBetween` = 1 ' is not between
  - `pmEqual` = 2 ' is equal to
  - `pmNotEqual` = 3 ' is not equal to
  - `pmGreater` = 4 ' is greater than
  - `pmLess` = 5 ' is less than
  - `pmGreaterEqual` = 6 ' is greater than or equal to
  - `pmLessEqual` = 7 ' is less than or equal to

- **Formula1** (optional; type: `Variant`) is either a numeric value, a string containing a number, a reference to a cell, or a formula. For `pmBetween` and `pmNotBetween` it specifies the minimum, for all other operators the value.

- **Formula2** (optional; type: `Variant`) is either a numeric value, a string containing a number, a reference to a cell, or a formula. It indicates the maximum. Has to be specified only if `pmBetween` or `pmNotBetween` is used.

Return type:

- `none`

Summary of all parameter combinations possible:

<table>
<thead>
<tr>
<th>Type</th>
<th>Operator</th>
<th>Formula1</th>
<th>Formula2</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>pmCellValue</code></td>
<td>All listed above</td>
<td>A) The value to be checked against <strong>or</strong>&lt;br&gt; B) The minimum (when <code>pmBetween</code> or <code>pmNotBetween</code> is used)</td>
<td>The maximum (only applicable when <code>pmBetween</code> or <code>pmNotBetween</code> is used)</td>
</tr>
<tr>
<td><code>pmExpression</code></td>
<td>(n/a)</td>
<td>An expression that returns <code>True</code> if the condition is matched, otherwise returns <code>False</code></td>
<td>(n/a)</td>
</tr>
</tbody>
</table>
Delete (method)

Removes a conditional formatting from the given range.

Syntax:

```plaintext
Delete
```

Parameters:

- none

Return type:

- none

Example:

```plaintext
' Remove the first conditional formatting from the cells A1 and A2
```

NumberFormatting (object)

Access paths:

- Application ➔ Workbooks ➔ Item ➔ Sheets ➔ Item ➔ Range ➔ NumberFormatting
- Application ➔ Workbooks ➔ ActiveSheet ➔ Range ➔ NumberFormatting
- Application ➔ ActiveWorkbook ➔ ActiveSheet ➔ Range ➔ NumberFormatting
- Application ➔ ActiveSheet ➔ Range ➔ NumberFormatting

Instead of `Range`, you can also use other objects and properties that return a `Range` object: `ActiveCell`, `Selection`, `Rows(n)`, `Columns(n)` and `Cells(x, y)`. For examples, see the `Range` object

1 Description

You can use the `NumberFormatting` object to get and set the number format of a cell range (corresponds to the options of the PlanMaker menu command `Format > Cells > Number Format`).

2 Access to the object

`NumberFormatting` is a child object of the `Range` object – for each `Range` object there is exactly one `NumberFormatting` object

3 Properties, objects, collections, and methods

Properties:

- `Type` (default property)
- `DateFormat`
- `CustomFormat`
BasicMaker and PlanMaker

- Currency
- Accounting
- Digits
- NegativeRed
- SuppressMinus
- SuppressZeros
- ThousandsSeparator

Objects:
- Application ➔ Application
- Parent ➔ Range

**Type (property)**

Data type: Long (PmNumberFormatting)

Gets or sets the number format for the cells in the cell range. The possible values are:

- pmNumberGeneral = 0 ' Standard
- pmNumberDecimal = 1 ' Number
- pmNumberScientific = 2 ' Scientific
- pmNumberFraction = 3 ' Fraction (see also Digits property)
- pmNumberDate = 4 ' Date/Time (see note)
- pmNumberPercentage = 5 ' Percentage
- pmNumberCurrency = 6 ' Currency (see note)
- pmNumberBoolean = 7 ' Boolean
- pmNumberCustom = 8 ' Custom (see note)
- pmNumberText = 9 ' Text
- pmNumberAccounting = 10 ' Accounting (see note)

Note: The formats pmNumberDate, pmNumberCurrency, pmNumberAccounting, and pmNumberCustom can only be read, but not set. To apply one of these formats, use the properties DateFormat, Currency, Accounting and CustomFormat (see below).

**DateFormat (property)**

Data type: String

Gets or sets the date/time format for the cells in the cell range.

Example:

' Format cell A1 as a date
pm.ActiveSheet.Range("A1").NumberFormattingDateFormat = "TT.MM.JJJJ"

For details on the format codes supported, see the online help for PlanMaker, keyword "User-defined number formats".

Note: The letter codes for the components of a date format are language-specific. If PlanMaker is running with English user interface, e.g. DD.MM.YYYY is a valid date format. If German user interface is used, TT.MM.JJJJ has to be used, with French user interface it has to be JJ.MM.AAAA, etc.

If you would like to retrieve the date string used in a cell, you must first check if the cell is formatted as a date at all – otherwise this property fails:
' Display the date string of cell A1
With pm.ActiveSheet.Range("A1")
    If .NumberFormatting.Type = pmNumberDate Then
        MsgBox .NumberFormatting.DateFormat
    Else
        MsgBox "Cell A1 is not formatted as a date."
    End If
End With

**CustomFormat** (property)

Data type: **String**

Gets or sets the user-defined formatting for the cells in the cell range.

Example:

```vba
' Format the cell A1 with a used-defined format
pm.ActiveSheet.Range("A1").NumberFormatting.CustomFormat = "00000"
```

**Currency** (property)

Data type: **String**

Gets or sets the currency format for the cells in the cell range.

Use an ISO code to specify the desired currency. When you read this property, it will return an ISO code as well. Some popular ISO codes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR</td>
<td>Euro</td>
</tr>
<tr>
<td>USD</td>
<td>US dollar</td>
</tr>
<tr>
<td>CAD</td>
<td>Canadian dollar</td>
</tr>
<tr>
<td>AUD</td>
<td>Australian dollar</td>
</tr>
<tr>
<td>JPY</td>
<td>Japanese yen</td>
</tr>
<tr>
<td>RUB</td>
<td>Russian ruble</td>
</tr>
<tr>
<td>BEF</td>
<td>Belgian franc</td>
</tr>
<tr>
<td>CHF</td>
<td>Swiss franc</td>
</tr>
<tr>
<td>DEM</td>
<td>German mark</td>
</tr>
<tr>
<td>ESP</td>
<td>Spanish peseta</td>
</tr>
<tr>
<td>FRF</td>
<td>French franc</td>
</tr>
<tr>
<td>LUF</td>
<td>Luxembourgian franc</td>
</tr>
<tr>
<td>NLG</td>
<td>Dutch guilder</td>
</tr>
<tr>
<td>PTE</td>
<td>Portuguese escudo</td>
</tr>
</tbody>
</table>

You can find a complete list of ISO codes (PlanMaker supports many of them, but not all) in the following Wikipedia article: [http://en.wikipedia.org/wiki/ISO_4217](http://en.wikipedia.org/wiki/ISO_4217)

Example:

```vba
' Format cell A1 as euro
pm.ActiveSheet.Range("A1").NumberFormatting.Currency = "EUR"
```

If you would like to *retrieve* the currency string used in a cell, you must first check if the cell is formatted as a currency at all – otherwise this property fails:
' Display the currency string of cell A1
With pm.ActiveSheet.Range("A1")
    If .NumberFormatting.Type = pmNumberCurrency Then
        MsgBox .NumberFormatting.Currency
    Else
        MsgBox "Cell A1 is not formatted as a currency."
    End If
End With

**Accounting (property)**

Data type: **String**

Gets or sets the accounting format of the cells in the cell range.

Exactly like for the property **Currency** (see there), you pass the ISO code of the desired currency to this property. When you read this property, it will return an ISO code as well.

Example:

' Format cell A1 in the accounting format with the currency "euro"
pm.ActiveSheet.Range("A1").NumberFormatting.Accounting = "EUR"

If you would like to **retrieve** the currency string used in a cell, you must first check if the cell is formatted in Accounting number format at all – otherwise this property fails:

' Display the currency string of cell A1 (formatted in Accounting format)
With pm.ActiveSheet.Range("A1")
    If .NumberFormatting.Type = pmNumberAccounting Then
        MsgBox .NumberFormatting.Accounting
    Else
        MsgBox "Cell A1 is not formatted in Accounting format."
    End If
End With

**Digits (property)**

Data type: **Long**

Gets or sets the number of the digits right of the decimal separator for the cells in the cell range.

Only values between 0 and 15 are allowed.

This property can be used with the following number formats:

- Number (**pmNumberDecimal**)
- Scientific (**pmNumberScientific**)
- Percent (**pmNumberPercentage**)
- Currency (**pmNumberCurrency**)
- Accounting (**pmNumberAccounting**)

Example:
' Set cell A1 to 4 decimal places
pm.ActiveSheet.Range("A1").NumberFormatting.Digits = 4

You can also use this property with the number format "Fraction" (pmNumberFraction), but in this case it sets the denominator of the fraction. Here, values between 0 and 1000 are allowed. Example:

' Format the cell A1 as a fraction with the denominator 8
With pm.ActiveSheet.Range("A1")
    .NumberFormatting.Type = pmNumberFraction
    .NumberFormatting.Digits = 8
End With

**NegativeRed (property)**

Data type: **Boolean**

Gets or sets the setting "Negative numbers in red" for the cells in the cell range, corresponding to the option with the same name in the dialog box of the menu command **Format > Cells**.

**SuppressMinus (property)**

Data type: **Boolean**

Gets or sets the setting "Suppress minus sign", corresponding to the option with the same name in the dialog box of the menu command **Format > Cells**.

**SuppressZeros (property)**

Data type: **Boolean**

Gets or sets the setting "Don't show zero", corresponding to the option with the same name in the dialog box of the menu command **Format > Cells**.

**ThousandsSeparator (property)**

Data type: **Boolean**

Gets or sets the setting "Thousands separator", corresponding to the option with the same name in the dialog box of the menu command **Format > Cells**.

**Application (pointer to object)**

Returns the **Application** object

**Parent (pointer to object)**

Returns the parent object, i.e. an object of the type **Range**
An example for the NumberFormatting object

In the following example the cell range from A1 to C3 will be formatted as percent values with two decimal places:

```vba
Sub Main
    Dim pm as Object
    Set pm = CreateObject("PlanMaker.Application")
    pm.Visible = True
    With pm.ActiveSheet.Range("A1:C3")
        .NumberFormatting.Type = pmNumberPercentage
        .NumberFormatting.Digits = 2
    End With
    Set pm = Nothing
End Sub
```

Font (object)

Access paths for direct formatting:
- `Application` → `Workbooks` → `Item` → `Sheets` → `Item` → `Range` → `Font`
- `Application` → `Workbooks` → `ActiveSheet` → `Range` → `Font`
- `Application` → `ActiveWorkbook` → `ActiveSheet` → `Range` → `Font`
- `Application` → `ActiveSheet` → `Range` → `Font`

Access paths for conditional formatting:
- `Application` → `Workbooks` → `Item` → `Sheets` → `Item` → `Range` → `FormatConditions` → `Item` → `Font`
- `Application` → `Workbooks` → `ActiveSheet` → `Range` → `FormatConditions` → `Item` → `Font`
- `Application` → `ActiveWorkbook` → `ActiveSheet` → `Range` → `FormatConditions` → `Item` → `Font`
- `Application` → `ActiveSheet` → `Range` → `FormatConditions` → `Item` → `Font`

Instead of `Range`, you can also use other objects and properties that return a `Range` object: `ActiveCell`, `Selection`, `Rows(n)`, `Columns(n)` and `Cells(x, y)`. For examples, see the `Range` object

1 Description

The `Font` object describes the character formatting (font, text color, underline, etc.) of cells.

2 Access to the object

`Font` can be a child object of two different objects:

- If used as child object of a `Range` object, it represents the character formatting of the `cells` in the given range, corresponding to the PlanMaker menu command `Format > Characters`
- If used as child object of a `FormatCondition` object, it represents the character formatting that is applied when the condition of a `conditional formatting` is met
Examples:

' Show the name of the font used in cell A1
MsgBox pm.ActiveSheet.Range("A1").Font.Name

' Show the font name for the first conditional formatting in A1
MsgBox pm.ActiveSheet.FormatConditions(1).Font.Name

### Properties, objects, collections, and methods

**Properties:**
- `Name` (default property)
- `Size`
- `Bold`
- `Italic`
- `Underline`
- `StrikeThrough`
- `Superscript`
- `Subscript`
- `AllCaps`
- `SmallCaps`
- `PreferredSmallCaps`
- `Blink`
- `Color`
- `ColorIndex`
- `BColor`
- `BColorIndex`
- `Spacing`
- `Pitch`

**Objects:**
- `Application` ➔ Application
- Parent ➔ Range oder FormatCondition

### Name (property)

Data type: `String`

Gets or sets the font name (as a string).

If the cells are formatted in different typefaces, an empty string will be returned.

### Size (property)

Data type: `Single`

Gets or sets the font size in points (pt).

If the cells are formatted in different font sizes, the constant `smoUndefined` (9.999.999) will be returned.

Example:
' Set the font size of the currently selected cells to 10.3 pt
pm.ActiveSheet.Selection.Font.Size = 10.3

**Bold (property)**

Data type: **Long**

Gets or sets the character formatting "Boldface":

- **True**: Boldface on
- **False**: Boldface off
- **smoUndefined** (only when reading): The cells are partly bold and partly not.

**Italic (property)**

Data type: **Long**

Gets or sets the character formatting "Italic":

- **True**: Italic on
- **False**: Italic off
- **smoUndefined** (only when reading): The cells are partly italic and partly not.

**Underline (property)**

Data type: **Long** (PmUnderline)

Gets or sets the character formatting "Underline". The following values are allowed:

- **pmUnderlineNone** = 0 ' off
- **pmUnderlineSingle** = 1 ' single underline
- **pmUnderlineDouble** = 2 ' double underline
- **pmUnderlineWords** = 3 ' word underline
- **pmUnderlineWordsDouble** = 4 ' double word underline

When you read this property and the cells are partly underlined and partly not, **smoUndefined** is returned.

**StrikeThrough (property)**

Data type: **Long**

Gets or sets the character formatting "Strike Through":

- **True**: Strike through on
- **False**: Strike through off
- **smoUndefined** (only when reading): The cells are partly stroke through and partly not.
**Superscript (property)**

Data type: **Long**

Gets or sets the character formatting "Superscript":

- **True**: Strike through on
- **False**: Strike through off
- **smoUndefined** (only when reading): The cells are partly superscripted and partly not.

**Subscript (property)**

Data type: **Long**

Gets or sets the character formatting "Subscript":

- **True**: Strike through on
- **False**: Strike through off
- **smoUndefined** (only when reading): The cells are partly subscripted and partly not.

**AllCaps (property)**

Data type: **Long**

Gets or sets the character formatting "All caps":

- **True**: All caps on
- **False**: All caps off
- **smoUndefined** (only when reading): Some of the cells are formatted in "All caps", some not.

**SmallCaps (property)**

Data type: **Long**

Gets or sets the character formatting "Small caps":

- **True**: Small caps on
- **False**: Small caps off
- **smoUndefined** (only when reading): Some of the cells are formatted in "Small caps", some not.

**PreferredSmallCaps (property)**

Data type: **Long**
Gets or sets the character formatting "Small caps", but unlike the **SmallCaps** property, lets you choose the scale factor. The value 0 turns SmallCaps off, all other values represent the percental scale factor of the small capitals.

Example:

```
' Format the current cell in small capitals with 75% of size
pm.ActiveCell.Font.**PreferredSmallCaps** = 75

' Deactivate the SmallCaps formatting
pm.ActiveCell.Font.**PreferredSmallCaps** = 0
```

**Blink (property)**

Data type: **Long**

Gets or sets the character formatting "Blink" (obsolete):

- **True**: Blink on
- **False**: Blink off
- **smoUndefined** (only when reading): The cells are partly blinking and partly not.

**Color (property)**

Data type: **Long** (SmoColor)

Gets or sets the foreground color of text as a "BGR" value (Blue-Green-Red triplet). You can either indicate an arbitrary value or use one of the pre-defined BGR color constants.

If the cells are formatted in different colors, the constant **smoUndefined** will be returned when you read this property.

**ColorIndex (property)**

Data type: **Long** (SmoColorIndex)

Gets or sets the foreground color of text as an index color. "Index colors" are the standard colors of PlanMaker, consecutively numbered from 0 for black to 15 for light gray. You can use only one of the values presented in the **Color Indices** table.

If the cells are formatted in different colors or in a color that is not an index color, the constant **smoUndefined** will be returned when you read this property.

Note: It is recommended to use the **Color** property (see above) instead of this one, since it is not limited to the standard colors but enables you to access the entire BGR color palette.

**BColor (property)**

Data type: **Long** (SmoColor)
Gets or sets the background color of text as a "BGR" value (Blue-Green-Red triplet). You can either indicate an arbitrary value or use one of the pre-defined BGR color constants.

If the cells are formatted in different colors, the constant smoUndefined will be returned when you read this property.

**BColorIndex (property)**

Data type: Long (SmoColorIndex)

Gets or sets the background color of text as an index color. "Index colors" are the standard colors of PlanMaker, consecutively numbered from 0 for black to 15 for light gray. You can use only one of the values presented in the Color Indices table.

If the cells are formatted in different colors or in a color that is not an index color, the constant smoUndefined will be returned when you read this property.

Note: It is recommended to use the BColor property (see above) instead of this one, since it is not limited to the standard colors but enables you to access the entire BGR color palette.

**Spacing (property)**

Data type: Long

Gets or sets the character spacing. The standard value is 100 (normal character spacing of 100%).

If you are reading this property and the cells are formatted in different character spacings, the constant smoUndefined will be returned.

**Pitch (property)**

Data type: Long

Gets or sets the character pitch. The standard value is 100 (normal character pitch of 100%).

If you are reading this property and the cells are formatted in different character pitches, the constant smoUndefined will be returned.

Note that some printers ignore changes to the character pitch for their internal fonts.

**Application (pointer to object)**

Data type: Object

Returns the Application object

**Parent (pointer to object)**

Data type: Object

Returns the parent object, i.e. an object that is either of the type Range or FormatCondition
Example for the usage of the Font object

In the following example the cells A1 to C3 will be formatted in Times New Roman, bold, 24 points.

```vba
Sub Main
    Dim pm as Object
    Set pm = CreateObject("PlanMaker.Application")
    pm.Visible = True
    With pm.ActiveSheet.Range("A1:C3")
        .Font.Name = "Times New Roman"
        .Font.Size = 24
        .Font.Bold = True
    End With
    Set pm = Nothing
End Sub
```

Borders (collection)

Access paths for direct formatting:

- `Application` → `Workbooks` → `Item` → `Sheets` → `Item` → `Range` → `Borders`
- `Application` → `Workbooks` → `ActiveSheet` → `Range` → `Borders`
- `Application` → `ActiveWorkbook` → `ActiveSheet` → `Range` → `Borders`
- `Application` → `ActiveSheet` → `Range` → `Borders`

Access paths for conditional formatting:

- `Application` → `Workbooks` → `Item` → `Sheets` → `Item` → `Range` → `FormatConditions` → `Item` → `Borders`
- `Application` → `Workbooks` → `ActiveSheet` → `Range` → `FormatConditions` → `Item` → `Borders`
- `Application` → `ActiveWorkbook` → `ActiveSheet` → `Range` → `FormatConditions` → `Item` → `Borders`
- `Application` → `ActiveSheet` → `Range` → `FormatConditions` → `Item` → `Borders`

Instead of `Range`, you can also use other objects and properties that return a `Range` object: `ActiveCell`, `Selection`, `Rows(n)`, `Columns(n)` and `Cells(x, y)`. For examples, see the `Range` object.

Description

The `Borders` collection represents the four border lines of cells (left, right, top, and bottom). You can use this collection to get or change the line settings (thickness, color, etc.) of each border line.

The individual elements of the `Borders` collection are of the type `Border`.

The parameter you pass to the `Borders` collection is the number of the border line you want to access:

- `pmBorderTop` = -1 ' Top border line
- `pmBorderLeft` = -2 ' Left border line
- `pmBorderBottom` = -3 ' Bottom border line
- `pmBorderRight` = -4 ' Right border line
- `pmBorderHorizontal` = -5 ' Horizontal grid lines
pmBorderVertical  = -6 ' Vertical grid lines

Example:

' Set the color of the left line of cell A1 to red
pm.ActiveSheet.Range("A1").Borders(pmBorderLeft).Color = smoColorRed

2 Access to the object

Borders can be a child object of two different objects:

- If used as child object of a Range object, it represents the border lines of the cells in the given range, corresponding to the PlanMaker menu command Format > Borders
- If used as child object of a FormatCondition object, it represents the border lines that are applied when the condition of a conditional formatting is met

Examples:

' Draw a bottom border for the cell A1
pm.ActiveSheet.Range("A1").Borders(pmBorderBottom).Type = pmLineStyleSingle
' Show the left border for the first conditional formatting in the cell A1
MsgBox pm.ActiveSheet.Range("A1").FormatConditions(1).Borders(pmBorderLeft).Type

3 Properties, objects, collections, and methods

Properties:
- **Count** R/O

Objects:
- **Item** → Border (default object)
- **Application** → Application
- **Parent** → Range or FormatCondition

**Count (property, R/O)**

Data type: Long

Returns the number of Border objects in the collection, which is always 4 (since there are exactly four different border lines available: left, right, top, bottom)

**Item (pointer to object)**

Data type: Object

Returns an individual Border object that you can use to get or set the properties (thickness, color, etc) of one individual border line

*Which* Border object you get depends on the numeric value that you pass to Item. The following table shows the admissible values:
pmBorderTop  = -1  ' Top border line
pmBorderLeft = -2  ' Left border line
pmBorderBottom = -3  ' Bottom border line
pmBorderRight = -4  ' Right border line
pmBorderHorizontal = -5  ' Horizontal grid lines
pmBorderVertical = -6  ' Vertical grid lines

Application (pointer to object)

Data type: Object

Returns the Application object

Parent (pointer to object)

Data type: Object

Returns the parent object, i.e. an object that is either of the type Range or FormatCondition

Example for the usage of the Borders object

In the following example, a 4 point thick blue line will be applied to the left border of the cell range from B2 to D4. Then, a thin red double line will be applied to the right border.

Sub Main
  Dim pm as Object
  Set pm = CreateObject("PlanMaker.Application")
  pm.Visible = True

  With pm.ActiveSheet.Range("B2:D4")
    .Borders(pmBorderLeft).Type    = pmLineStyleSingle
    .Borders(pmBorderLeft).Thick1  = 4
    .Borders(pmBorderLeft).Color   = pmColorBlue
    .Borders(pmBorderRight).Type   = pmLineStyleDouble
    .Borders(pmBorderRight).Thick1 = 1
    .Borders(pmBorderRight).Thick2 = 1
    .Borders(pmBorderRight).Color  = smoColorRed
  End With

  Set pm = Nothing
End Sub

Border (object)

Access paths for direct formatting of cells:
- Application → Workbooks → Item → Sheets → Item → Range → Borders → Item
- Application → Workbooks → ActiveSheet → Range → Borders → Item
- Application → ActiveWorkbook → ActiveSheet → Range → Borders → Item
### Description

A **Border** object represents one individual border line of cells – for example the left, right, top, or bottom line. You can use this object to get or change the line settings (thickness, color, etc.) of a border line.

### Access to the object

The individual **Border** objects can be accessed solely through enumerating the elements of the **Borders** collection. This collection can be a child object of the following two objects:

- If used as child object of a **Range** object, **BordersItem(n)** represents one of the border lines of the *cells* in the given range, corresponding to the PlanMaker menu command **Format > Borders**.
- If used as child object of a **FormatCondition** object, **BordersItem(n)** represents one of the border lines that are applied when the condition of a *conditional formatting* is met.

As a parameter, you pass the number of the border that you would like to access, as follows:

<table>
<thead>
<tr>
<th>pmBorderTop</th>
<th>= -1</th>
<th>Top border line</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmBorderLeft</td>
<td>= -2</td>
<td>Left border line</td>
</tr>
<tr>
<td>pmBorderBottom</td>
<td>= -3</td>
<td>Bottom border line</td>
</tr>
<tr>
<td>pmBorderRight</td>
<td>= -4</td>
<td>Right border line</td>
</tr>
<tr>
<td>pmBorderHorizontal</td>
<td>= -5</td>
<td>Horizontal grid lines</td>
</tr>
<tr>
<td>pmBorderVertical</td>
<td>= -6</td>
<td>Vertical grid lines</td>
</tr>
</tbody>
</table>

Example:

```vbnet
' Set the color of the left line of cell A1 to red
pm_ActiveSheet.Range("A1").Borders(pmBorderLeft).Color = smoColorRed
```

### Properties, objects, collections, and methods

**Properties:**
- **Type** (default property)
- **Thick1**
- **Thick2**
- **Separator**
- **Color**
- **ColorIndex**

**Objects:**
- Application → Application
- Parent → Borders

**Type (property)**

Data type: Long (PmLineStyle)

Gets or sets the type of the border line. The possible values are:

- `pmLineStyleNone` = 0 ' No border
- `pmLineStyleSingle` = 1 ' Simple border
- `pmLineStyleDouble` = 2 ' Double border

**Thick1 (property)**

Data type: Single

Gets or sets the thickness of the first border line in points (1 point corresponds to 1/72 inches).

**Thick2 (property)**

Data type: Single

Gets or sets the thickness of the second border line in points (1 point corresponds to 1/72 inches).

This property is used only if the type of the border is set to `pmLineStyleDouble`.

**Separator (property)**

Data type: Single

Gets or sets the offset between two border lines in points (1 point corresponds to 1/72 inches).

This property is used only if the type of the border is set to `pmLineStyleDouble`.

**Color (property)**

Data type: Long (SmoColor)

Gets or sets the color of the border line(s) as a "BGR" value (Blue-Green-Red triplet). You can either specify an arbitrary value or use one of the predefined BGR color constants

**ColorIndex (property)**

Data type: Long (SmoColorIndex)
Gets or sets the color of the border line(s) as an index color. "Index colors" are the standard colors of PlanMaker, consecutively numbered from 0 for black to 15 for light gray. You can use only one of the values listed in the Color Indices table.

Note: It is recommended to use the Color property (see above) instead of this one, since it is not limited to the 16 standard colors but enables you to access the entire BGR color palette.

**Application (pointer to object)**

Data type: Object

Returns the Application object

**Parent (pointer to object)**

Data type: Object

Returns the parent object, i.e. an object that is of the type Borders

---

**Shading (object)**

Access paths for direct formatting:

- Application \(\rightarrow\) Workbooks \(\rightarrow\) Item \(\rightarrow\) Sheets \(\rightarrow\) Item \(\rightarrow\) Range \(\rightarrow\) Shading
- Application \(\rightarrow\) Workbooks \(\rightarrow\) ActiveSheet \(\rightarrow\) Range \(\rightarrow\) Shading
- Application \(\rightarrow\) ActiveWorkbook \(\rightarrow\) ActiveSheet \(\rightarrow\) Range \(\rightarrow\) Shading
- Application \(\rightarrow\) ActiveSheet \(\rightarrow\) Range \(\rightarrow\) Shading

Access paths for conditional formatting:

- Application \(\rightarrow\) Workbooks \(\rightarrow\) Item \(\rightarrow\) Sheets \(\rightarrow\) Item \(\rightarrow\) Range \(\rightarrow\) FormatConditions \(\rightarrow\) Item \(\rightarrow\) Shading
- Application \(\rightarrow\) Workbooks \(\rightarrow\) ActiveSheet \(\rightarrow\) Range \(\rightarrow\) FormatConditions \(\rightarrow\) Item \(\rightarrow\) Shading
- Application \(\rightarrow\) ActiveWorkbook \(\rightarrow\) ActiveSheet \(\rightarrow\) Range \(\rightarrow\) FormatConditions \(\rightarrow\) Item \(\rightarrow\) Shading
- Application \(\rightarrow\) ActiveSheet \(\rightarrow\) Range \(\rightarrow\) FormatConditions \(\rightarrow\) Item \(\rightarrow\) Shading

Instead of Range, you can also use other objects and properties that return a Range object: ActiveCell, Selection, Rows(n), Columns(n) and Cells(x, y). For examples, see the Range object

**1 Description**

The Shading object represents the shading of cells (with either a shading or a pattern).

**2 Access to the object**

Shading can be a child object of two different objects:

- If used as child object of a Range object, it represents the shading of the cells in the given range, corresponding to the PlanMaker menu command Format > Shading
If used as child object of a `FormatCondition` object, it represents the shading that is applied when the condition of a `conditional formatting` is met.

Examples:

```vba
' Show the pattern of cell A1
MsgBox pm.ActiveSheet.Range("A1").Shading.Texture

' Show the pattern of the first conditional formatting for cell A1
MsgBox pm.ActiveSheet.Range("A1").FormatConditions(1).Shading.Texture
```

### 3 Properties, objects, collections, and methods

**Properties:**
- `Texture`
- `Intensity`
- `ForegroundPatternColor` (default property)
- `ForegroundPatternColorIndex`
- `BackgroundPatternColor`
- `BackgroundPatternColorIndex`

**Objects:**
- `Application` → `Application`
- `Parent` → `Range` oder `FormatCondition`

#### Texture (property)

Data type: Long (SmoShadePatterns)

Gets or sets the fill pattern for the shading. The possible values are:

<table>
<thead>
<tr>
<th>Pattern Name</th>
<th>Value</th>
<th>Representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoPatternNone</td>
<td>0</td>
<td>(No shading)</td>
</tr>
<tr>
<td>smoPatternHalftone</td>
<td>1</td>
<td>(Shading)</td>
</tr>
<tr>
<td>smoPatternRightDiagCoarse</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>smoPatternLeftDiagCoarse</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>smoPatternHashDiagCoarse</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>smoPatternVertCoarse</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>smoPatternHorzCoarse</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>smoPatternHashCoarse</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>smoPatternRightDiagFine</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>smoPatternLeftDiagFine</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>smoPatternHashDiagFine</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>smoPatternVertFine</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>smoPatternHorzFine</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
To add a shading, set the Texture property to smoPatternHalftone and specify the required intensity of shading with the Intensity property.

To add a pattern, set the Texture property to one of the values between smoPatternRightDiagCoarse and smoPatternHashFine.

To remove an existing shading or pattern, set the Texture property to smoPatternNone.

### Intensity (property)

Data type: **Long**

Gets or sets the intensity of the shading. The possible values are between 0 and 100 (percent).

This value can be set or get only if a shading was chosen with the Texture property (i.e., the Texture property was set to smoPatternHalftone). If a pattern was chosen (i.e., the Texture property has any other value), accessing the Intensity property fails.

### ForegroundPatternColor (property)

Data type: **Long** (SmoColor)

Gets or sets the foreground color for the shading or pattern as a "BGR" value (Blue-Green-Red triplet). You can either specify an arbitrary value or use one of the predefined BGR color constants.

### ForegroundPatternColorIndex (property)

Data type: **Long** (SmoColorIndex)

Gets or sets the foreground color for the shading or pattern as an index color. "Index colors" are the standard colors of PlanMaker, consecutively numbered from 0 for black to 15 for light gray. You can use only one of the values presented in the Color Indices table.

Note: It is recommended to use the ForegroundPatternColor property (see above) instead of this one, since it is not limited to the 16 standard colors but enables you to access the entire BGR color palette.

### BackgroundPatternColor (property)

Data type: **Long** (SmoColor)

Gets or sets the background color for the shading or pattern as a "BGR" value (Blue-Green-Red triplet). You can either specify an arbitrary value or use one of the predefined BGR color constants.

### BackgroundPatternColorIndex (property)

Data type: **Long** (SmoColorIndex)
Gets or sets the background color for the shading or pattern as an index color. "Index colors" are the standard colors of PlanMaker, consecutively numbered from 0 for black to 15 for light gray. You can use only one of the values presented in the Color Indices table.

Note: It is recommended to use the BackgroundPatternColor property (see above) instead of this one, since it is not limited to the 16 standard colors but enables you to access the entire BGR color palette.

**Application (pointer to object)**

Data type: **Object**

Returns the Application object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object that is either of the type Range or FormatCondition

**Example for the usage of the Shading object**

In the following example a 50% red shading will be applied to the cells from A1 to C3.

```vba
Sub Main
    Dim pm as Object
    Set pm = CreateObject("PlanMaker.Application")
    pm.Visible = True
    With pm.ActiveSheet.Range("A1:C3")
        .Shading.Intensity = 50
        .Shading.ForegroundPatternColor = smoColorRed
    End With
    Set pm = Nothing
End Sub
```

**Validation (object)**

Access paths:
- Application → Workbooks → Item → Sheets → Item → Range → Validation
- Application → Workbooks → ActiveSheet → Range → Validation
- Application → ActiveWorkbook → ActiveSheet → Range → Validation
- Application → ActiveSheet → Range → Validation

Instead of Range, you can also use other objects and properties that return a Range object: ActiveCell, Selection, Rows(n), Columns(n) and Cells(x, y).
For examples, see the Range object
**Description**

The **Validation** object represents the input validation of a cell range (i.e., a **Range** object) in PlanMaker. Input validations can be set up with the **Format > Input Validation** menu command.

**Access to the object**

Each **Range** object has exactly one instance of the **Validation** object. It can be accessed through the **RangeValidation** object:

```vba
'M Display the input message for cell A1
MsgBox pm.ActiveSheet.Range("A1").Validation.InputMessage
```

**Properties, objects, collections, and methods**

**Properties:**
- **Type** R/O
- **AlertStyle**
- **Value** R/O
- **ShowInput**
- **InputTitle**
- **InputMessage**
- **ShowError**
- **ErrorTitle**
- **ErrorMessage**
- **Operator** R/O
- **Formula1** R/O
- **Formula2** R/O
- **InCellDropDown**
- **IgnoreBlank**

**Objects:**
- **Application** → **Application**
- **Parent** → **Range**

**Methods:**
- **Add**
- **Modify**
- **Delete**

**Type (property, R/O)**

Data type: **Long** (PmDVType)

Gets or sets the setting which type of values to allow. The possible values are:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmValidateInputOnly</td>
<td>0</td>
</tr>
<tr>
<td>pmValidateWholeNumber</td>
<td>1</td>
</tr>
</tbody>
</table>

' Allow all types of values
' Allow only integer numbers
pmValidateDecimal = 2 ' Allow only decimal numbers
pmValidateList = 3 ' Allow only values from a pre-defined list
pmValidateDate = 4 ' Allow only date values
pmValidateTime = 5 ' Allow only time values
pmValidateTextLength = 6 ' Allow only values of a certain length
pmValidateCustom = 7 ' User-defined check

**AlertStyle** (property)

Data type: Long (PmDVAlertStyle)

Gets or sets the style of the error message for invalid values. The possible values are:

- pmValidAlertStop = 0 ' Error message
- pmValidAlertWarning = 1 ' Warning message
- pmValidAlertInformation = 2 ' Information message

**Value** (property, R/O)

Data type: Boolean

Returns True, when the range contains valid values (i.e. values passing the input validation check), else False.

**ShowInput** (property)

Data type: Long

Gets or sets the setting if an input message should be displayed when the cell is activated. Corresponds to the check box "Show input message when cell is selected" in the dialog of the Format > Input Validation menu command, Input message tab.

**InputTitle** (property)

Data type: String

Gets or sets the title of the input message that appears when the cell is activated. Corresponds to the input box "Title" in the dialog of the Format > Input Validation menu command, Input message tab.

**InputMessage** (property)

Data type: String

Gets or sets the text of the input message that appears when the cell is activated. Corresponds to the input box "Message" in the dialog of the Format > Input Validation menu command, Input message tab.

**ShowError** (property)

Data type: Long
Gets or sets the setting whether a message should be displayed when a value that do not pass the input validation check is entered into the cell. Corresponds to the check box "Show error message after invalid data is entered" in the dialog of the **Format > Input Validation** menu command, **Error message** tab.

**ErrorTitle (property)**

Data type: **String**

Gets or sets the title of the message that is displayed when an invalid value is entered into the cell. Corresponds to the input box "Title" in the dialog of the **Format > Input Validation** menu command, **Error message** tab.

**ErrorMessage (property)**

Data type: **String**

Gets or sets the text of the message that is displayed when an invalid value is entered into the cell. Corresponds to the input box "Message" in the dialog of the **Format > Input Validation** menu command, **Error message** tab.

**Operator (property, R/O)**

Data type: **Long** (PmDVOperator)

Gets or sets the relational operator used by the input validation check.

<table>
<thead>
<tr>
<th>Operator</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmDVBetween</td>
<td>0</td>
<td>' is between</td>
</tr>
<tr>
<td>pmDVNotBetween</td>
<td>1</td>
<td>' is not between</td>
</tr>
<tr>
<td>pmDVEqual</td>
<td>2</td>
<td>' is equal to</td>
</tr>
<tr>
<td>pmDVNotEqual</td>
<td>3</td>
<td>' is not equal to</td>
</tr>
<tr>
<td>pmDVGreater</td>
<td>4</td>
<td>' is greater than</td>
</tr>
<tr>
<td>pmDVLess</td>
<td>5</td>
<td>' is less than</td>
</tr>
<tr>
<td>pmDVGreaterEqual</td>
<td>6</td>
<td>' is greater than or equal to</td>
</tr>
<tr>
<td>pmDVLessEqual</td>
<td>7</td>
<td>' is less than or equal to</td>
</tr>
</tbody>
</table>

**Formula1 (property, R/O)**

Data type: **String**

Gets or sets the value to be checked against.

Exception: For the operators **pmDVBetween** and **pmDVNotBetween**, it gets or set the lower bound of the interval of allowed values.

**Formula2 (property, R/O)**

Data type: **String**

For the operators **pmDVBetween** and **pmDVNotBetween**, it gets or set the upper bound of the interval of allowed values.

For all other operators, this property is not used.
**InCellDropDown (property)**

Data type: **Long**

Gets or sets the setting whether a list of the allowed values should be displayed in the cell. Applicable only when the type of validation check (see **Type** property above) is set to "List entries" (**pmValidateList**).

Corresponds to the option "Use dropdown" in the dialog of the **Format > Input Validation** menu command, **Settings** tab.

**IgnoreBlank (property)**

Data type: **Long**

Gets or sets the setting whether empty cells should be ignored by the input validation check. Corresponds to the option "Ignore empty cells" in the dialog of the **Format > Input Validation** menu command, **Settings** tab.

**Application (pointer to object)**

Data type: **Object**

Returns the **Application** object.

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. an object of the type **Range**.

**Add (method)**

Adds an input validation check to the cell range, exactly like the **Format > Input Validation** menu command in PlanMaker.

Please note that a table cell can not have more than one input validation check at a time.

Syntax:

```
Add Type, [AlertStyle], [Operator], [Formula1], [Formula2]
```

Parameters:

**Type** (type: **Long** or **PmDVType**) determines the type of input validation check. The possible values are:

- **pmValidateInputOnly** = 0 ' Allow all types of values *
- **pmValidateWholeNumber** = 1 ' Allow only integer numbers
- **pmValidateDecimal** = 2 ' Allow only decimal numbers
- **pmValidateList** = 3 ' Allow only values from a pre-defined list **
- **pmValidateDate** = 4 ' Allow only date values
- **pmValidateTime** = 5 ' Allow only times values
- **pmValidateTextLength** = 6 ' Allow only values of a certain length
pmValidateCustom = 7 ' User-defined check ***

* With this setting, all values are accepted. Use it if you merely want an input message to appear when the user activates the cell.

** With this setting, only the values specified in a list of allowed values are accepted. Use the parameter Formula1 to specify the cell range containing this list. For example, if the cells C1 through C3 hold the values "dog", "cat" and "mouse" and you enter C1:C3 for Formula1, only these three values will be allowed.

*** When using this setting, you must specify in Formula1 an expression that returns True for valid entries, or False for invalid entries.

AlertStyle (type: Long or PmDVAlertStyle) specifies the style of the error message for invalid values:

- pmValidAlertStop = 0 ' Error message
- pmValidAlertWarning = 1 ' Warning message
- pmValidAlertInformation = 2 ' Information message

Operator (type: Long or PmDVOperator) specifies the relational operator used by the input validation check:

- pmDVBetween = 0 ' is between
- pmDVNotBetween = 1 ' is not between
- pmDVEqual = 2 ' is equal to
- pmDVNotEqual = 3 ' is not equal to
- pmDVGreater = 4 ' is greater than
- pmDVLess = 5 ' is less than
- pmDVGreaterEqual = 6 ' is greater than or equal to
- pmDVLessEqual = 7 ' is less than or equal to

Formula1 (optional; type: String) specifies the value to be checked against (or, for pmDVBetween and pmDVNotBetween, the minimum).

Formula2 (optional; type: String) specifies the maximum for pmDVBetween and pmDVNotBetween.

Return type:

none

Summary of all parameter combinations possible:

<table>
<thead>
<tr>
<th>Type</th>
<th>Operator</th>
<th>Formula1</th>
<th>Formula2</th>
</tr>
</thead>
<tbody>
<tr>
<td>pmValidateInputOnly</td>
<td>(n/a)</td>
<td>(n/a)</td>
<td>(n/a)</td>
</tr>
<tr>
<td>pmValidateWholeNumber, pmValidateDecimal, pmValidateDate, pmValidateTime, pmValidateTextLength</td>
<td>All listed above</td>
<td>A) The value to be checked against or B) The minimum (when pmDVBetween or pmDVNotBetween is used)</td>
<td>The maximum (only applicable when pmDVBetween or pmDVNotBetween is used)</td>
</tr>
<tr>
<td>pmValidateList</td>
<td>(n/a)</td>
<td>A list of values, separated by the system list separator, or a cell reference</td>
<td>(n/a)</td>
</tr>
</tbody>
</table>
pmValidateCustom (n/a) An expression that returns \textbf{True} for inputs that are to be considered valid, otherwise returns \textbf{False}

### Modify (method)

Modifies the input validation check for the cell range.

Syntax:

\texttt{Modify [Type], [AlertStyle], [Operator], [Formula1], [Formula2]}

Parameters:

**Type** (type: \texttt{Long} or \texttt{PmDVType}) determines the type of input validation check. The possible values are:

- \texttt{pmValidateInputOnly} = 0 ' Allow all types of values *
- \texttt{pmValidateWholeNumber} = 1 ' Allow only integer numbers
- \texttt{pmValidateDecimal} = 2 ' Allow only decimal numbers
- \texttt{pmValidateList} = 3 ' Allow only values from a pre-defined list **
- \texttt{pmValidateDate} = 4 ' Allow only date values
- \texttt{pmValidateTime} = 5 ' Allow only times values
- \texttt{pmValidateTextLength} = 6 ' Allow only values of a certain length
- \texttt{pmValidateCustom} = 7 ' User-defined check ***

* With this setting, all values are accepted. Use it if you merely want an input message to appear when the user activates the cell.

** With this setting, only the values specified in a list of allowed values are accepted. Use the parameter \texttt{Formula1} to specify the cell range containing this list. For example, if the cells C1 through C3 hold the values "dog", "cat" and "mouse" and you enter C1:C3 for \texttt{Formula1}, only these three values will be allowed.

*** When using this setting, you must specify in \texttt{Formula1} an expression that returns \textbf{True} for valid entries, or \textbf{False} for invalid entries.

**AlertStyle** (type: \texttt{Long} or \texttt{PmDVAlertStyle}) specifies the style of the error message for invalid values:

- \texttt{pmValidAlertStop} = 0 ' Error message
- \texttt{pmValidAlertWarning} = 1 ' Warning message
- \texttt{pmValidAlertInformation} = 2 ' Information message

**Operator** (type: \texttt{Long} or \texttt{PmDVOperator}) specifies the relational operator used by the input validation check:

- \texttt{pmDVBetween} = 0 ' is between
- \texttt{pmDVNotBetween} = 1 ' is not between
- \texttt{pmDVEqual} = 2 ' is equal to
- \texttt{pmDVNotEqual} = 3 ' is not equal to
- \texttt{pmDVGreater} = 4 ' is greater than
- \texttt{pmDVLess} = 5 ' is less than
- \texttt{pmDVGreaterEqual} = 6 ' is greater than or equal to
- \texttt{pmDVLessEqual} = 7 ' is less than or equal to
**Formula1** (optional; type: **String**) specifies the value to be checked against (or, for **pmDVBetween** and **pmDVNotBetween**, the minimum).

**Formula1** (optional; type: **String**) specifies the maximum for **pmDVBetween** and **pmDVNotBetween**.

Return type: none

**Delete (method)**

Removes the input validation check from the cell range.

Syntax:

```plaintext
Delete
```

Parameters:

none

Return type:

none

Example:

```plaintext
' Removes the input validation check from the cells A1 and A2
```

---

**AutoFilter (object)**

Access paths:

- Application ➔ Workbooks ➔ Item ➔ Sheets ➔ Item ➔ AutoFilter
- Application ➔ Workbooks ➔ ActiveSheet ➔ AutoFilter
- Application ➔ ActiveWorkbook ➔ ActiveSheet ➔ AutoFilter
- Application ➔ ActiveSheet ➔ AutoFilter

1 **Description**

The **AutoFilter** object allows you to access the AutoFilter of a worksheet. In PlanMaker, such filters can be set up using the **Table > Filter > AutoFilter** menu command.

2 **Access to the object**

Each worksheet (**Sheet**) has exactly one instance of the **AutoFilter** object. It can be accessed through the **Sheet.AutoFilter** object:

```plaintext
' Display the number of columns in the AutoFilter
```
MsgBox pm.ActiveSheet.AutoFilter.Filters.Count

### Properties, objects, collections, and methods

#### Objects:
- **Application**: The Application object
- **Parent**: The Parent object of the sheet

#### Collections:
- **Filters**: The Filters collection

### Application (pointer to object)

**Data type:** Object

Returns the Application object

### Parent (pointer to object)

**Data type:** Object

Returns the parent object, i.e. an object of the type Sheet

### Filters (pointer to collection)

**Data type:** Object

Returns the Filters collection that allows you to access the individual columns of an AutoFilter

### Filters (collection)

**Access paths:**
- Application → Workbooks → Item → Sheets → Item → AutoFilter → Filters
- Application → Workbooks → ActiveSheet → AutoFilter → Filters
- Application → ActiveWorkbook → ActiveSheet → AutoFilter → Filters
- Application → ActiveSheet → AutoFilter → Filters

### Description

The Filters collection contains all columns of the currently active AutoFilter.

The individual elements of this collection are of the type Filter. You can use the individual Filter objects to retrieve criteria and filter type of each column of the AutoFilter.
Each AutoFilter has exactly one Filters collection. It is accessed through the AutoFilter.Filters object:

```vba
' Display the number of columns in the AutoFilter
MsgBox pm.ActiveSheet.AutoFilter.Filters.Count
```

### 3 Properties, objects, collections, and methods

**Properties:**
- **Count** R/O

**Objects:**
- **Item** → **Filter** (default object)
- **Application** → **Application**
- **Parent** → **AutoFilter**

### Count (property, R/O)

Data type: **Long**

Returns the number of Filter objects in the collection, i.e. the number of columns in the range that is filtered.

### Item (pointer to object)

Data type: **Object**

Returns an individual Filter object, i.e. one column of the AutoFilter.

*Which* column you get depends on the numeric value that you pass to **Item**: 1 for the first column, 2 for the second, etc.

### Application (pointer to object)

Data type: **Object**

Returns the Application object.

### Parent (pointer to object)

Data type: **Object**

Returns the parent object, i.e. an object of the type AutoFilter.
Filter (object)

Access paths:
- **Application** → **Workbooks** → **Item** → **Sheets** → **Item** → **AutoFilter** → **Filters** → **Item**
- **Application** → **Workbooks** → **ActiveSheet** → **AutoFilter** → **Filters** → **Item**
- **Application** → **ActiveWorkbook** → **ActiveSheet** → **AutoFilter** → **Filters** → **Item**
- **Application** → **ActiveSheet** → **AutoFilter** → **Filters** → **Item**

1 Description

A Filter object represents one individual column of an AutoFilter. You can use it to retrieve criteria and filter type of each column.

2 Access to the object

The individual Filter objects can be accessed solely through enumerating the elements of the corresponding Filters collection.

For each AutoFilter there is exactly one instance of the Filter collection. It is accessed through the AutoFilter.Filters object:

```vba
MsgBox pm.ActiveSheet.AutoFilter.Filters.Item(1).Criteria1
```

Please note that all properties of the Filter object are *read-only*. To set up a new AutoFilter, use the AutoFilter method in the Range object.

3 Properties, objects, collections, and methods

Properties:
- **Operator** R/O
- **Criteria1** R/O
- **Criteria2** R/O

Objects:
- **Application** → **Application**
- **Parent** → **Filters**

Operator (property, R/O)

Data type: **Long** (PmAutoFilterOperator)

Returns the type of the filter. The possible values are:

```plaintext
pmAll = 0 ' Show all rows (= do not filter)
pmAnd = 1 ' Criteria1 and Criteria2 must be matched
```
pmBottom10Items = 2 ' Show only the n lowest values*
pmBottom10Percent = 3 ' Show only the bottom n percent values*
pmOr = 4 ' Criteria1 or Criteria2 must be matched
pmTop10Items = 5 ' Show only the n highest values*
pmTop10Percent = 6 ' Show only the top n percent values*
pmBlank = 7 ' Show only blank rows
pmNonblank = 8 ' Show only non-blank rows
pmCustom = 9 ' User-defined filter

* In these cases, Criteria1 contains the value for "n".

Criteria1 (property, R/O)

Data type: String

Returns the criterion of the filter – for example "red" if you have filtered for the value "red".

Exception: If one of the operators pmTop10Items, pmTop10Percent, pmBottom10Items, or pmBottom10Percent is used, then Criteria1 contains a numeric value indicating how many values to display.

Criteria2 (property, R/O)

Data type: String

Returns the second criterion of the filter – provided that Operator is set to pmAnd or pmOr so that two criteria can be given.

Application (pointer to object)

Data type: Object

Returns the Application object

Parent (pointer to object)

Data type: Object

Returns the parent object, i.e. Filters

Windows (collection)

Access path: Application ⇒ Windows

Description

The Windows collection contains all open document windows. The individual elements of this collection are of the type Window
## Access to the collection

There is exactly one instance of the `Windows` collection during the whole runtime of PlanMaker. It is accessed through the `Application.Windows` object:

```vba
' Show the number of open document windows
MsgBox pm.Application.Windows.Count

' Show the name of the first open document window
MsgBox pm.Application.Windows(1).Name
```

## Properties, objects, collections, and methods

### Properties:
- **Count** R/O

### Objects:
- **Item** → `Window` (default object)
- **Application** → `Application`
- **Parent** → `Application`

### Count (property, R/O)

Data type: **Long**

Returns the number of `Window` objects in PlanMaker – in other words: the number of open document windows.

### Item (pointer to object)

Data type: **Object**

Returns an individual `Window` object, ie an individual document window.

*Which* `Window` object you get depends on the parameter that you pass to `Item`. You can specify either the numeric index or the name of the desired document window. Examples:

```vba
' Show the name of the first document window
MsgBox pm.Application.Windows.Item(1).FullName

' Show the name of the document window "Test.pmd" (if opened)
MsgBox pm.Application.Windows.Item("Test.pmd").FullName

' You can also use the full name with path
MsgBox pm.Application.Windows.Item("c:\Documents\Test.pmd").FullName
```

### Application (pointer to object)

Returns the `Application` object
**Parent (pointer to object)**

Returns the parent object, i.e. **Application**

---

**Window (object)**

Access paths:
- **Application** → **Windows** → **Item**
- **Application** → **ActiveWindow**
- **Application** → **Workbooks** → **Item** → **ActiveWindow**
- **Application** → **ActiveWorkbook** → **ActiveWindow**

**1 Description**

A **Window** object represents one individual document window that is currently open in PlanMaker.

For each document window there is its own **Window** object. If you open or close document windows, the respective **Window** objects will be created or deleted dynamically.

**2 Access to the object**

The individual **Window** objects can be accessed in any of the following ways:

- All document windows that are open at a time are listed in the collection **Application.Windows** (type: **Windows**):

  ```vba
  ' Show the names of all open document windows
  For i = 1 To pm.Application.Windows.Count
    MsgBox pm.Application.Windows.Item(i).Name
  Next i
  ```

- You can access the currently active document window through **Application.ActiveWindow**:

  ```vba
  ' Show the name of the active document window
  MsgBox pm.Application.ActiveWindow.Name
  ```

- The object **Workbook** contains an object pointer to the respective document window:

  ```vba
  ' Access the active document window through the active document
  MsgBox pm.Application.ActiveWorkbook.ActiveWindow.Name
  ```

**3 Properties, objects, collections, and methods**

- **FullName** R/O
- **Name** R/O
- **Path** R/O
- Left
- Top
- Width
- Height
- WindowState
- DisplayFormulas
- DisplayVerticalScrollBar
- DisplayHorizontalScrollBar
- DisplayWorkbookTabs
- DisplayHeadings
- Zoom
- DisplayGridlines
- GridlineColor
- GridlineColorIndex

Objects:
- Workbook → Workbook
- ActiveCell → Range
- ActiveSheet → Sheet
- Application → Application
- Parent → Windows

Methods:
- Activate
- Close

**FullName (property, R/O)**

Data type: String

Returns the path and file name of the document opened in the window (e.g., "c:\Documents\Smith.pmd").

**Name (property, R/O)**

Data type: String

Returns the file name of the document opened in the window (e.g., Smith.pmd).

**Path (property, R/O)**

Data type: String

Returns the path of the document opened in the window (e.g., c:\Documents).

**Left (property)**

Data type: Long

Gets or sets the horizontal position of the window, measured in screen pixels.
**Top (property)**

Data type: **Long**

Gets or sets the vertical position of the window, measured in screen pixels.

**Width (property)**

Data type: **Long**

Gets or sets the width of the window, measured in screen pixels.

**Height (property)**

Data type: **Long**

Gets or sets the height of the window, measured in screen pixels.

**WindowState (property)**

Data type: **Long** (SmoWindowState)

Gets or sets the state of the document window. The possible values are:

```
smoWindowStateNormal      = 1   ' normal
smoWindowStateMinimize    = 2   ' minimized
smoWindowStateMaximize    = 3   ' maximized
```

**DisplayFormulas (property)**

Data type: **Boolean**

Gets or sets the setting whether table cells containing calculations should display the result or the formula of the calculation. Corresponds to the menu command **View > Show Formulas**.

**DisplayVerticalScrollBar (property)**

Data type: **Boolean**

Gets or sets the setting whether a vertical scroll bar should be shown in the document window (**True** or **False**).

**DisplayHorizontalScrollBar (property)**

Data type: **Boolean**

Gets or sets the setting whether a horizontal scroll bar should be shown in the document window (**True** or **False**).
### DisplayWorkbookTabs (property)

Data type: **Boolean**

Gets or sets the setting whether worksheet tabs should be displayed at the bottom of the document window (**True** or **False**).

### DisplayHeadings (property)

Data type: **Boolean**

Gets or sets the setting whether row and column headers should be displayed in the document window. Corresponds to the menu command **View > Row & Column Headers**.

**Notes:**
- This property is supported by PlanMaker only for Excel compatibility reasons. It is recommended to use the **DisplayRowHeadings** and **DisplayColumnHeadings** properties in the **Sheet** object instead, because these settings can be made independently for each worksheet and allow you to enable/disable row and column headers individually.
- If you retrieve this property while multiple worksheets exist where this setting has different values, the value **smoUndefined** will be returned.

### Zoom (property)

Data type: **Long**

Gets or sets the zoom level of the document window, expressed in percent. Allowed are values between 50 and 400.

Alternatively you can use the value -1 (or the constant **pmZoomFitToSelection**) which automatically adapts the zoom level to the current selection.

**Example:**

```
' Set the zoom level to 120%
pm.ActiveWindow.Zoom = 120
```

**Note:** Changes to this setting affect only the current worksheet. If you want to change the zoom level of other worksheets as well, you have to make them the active worksheet first.

### DisplayGridlines (property)

Data type: **Boolean**

Gets or sets the setting whether grid lines should be displayed in the document window. Corresponds to the setting "Grid" in the dialog of the menu command **Table > Properties** – with the difference that this property affects the display of grid lines in *all* worksheets.

**Notes:**
This property is supported by PlanMaker only for Excel compatibility reasons. It is recommended to use the identically named property in the `Sheet` object instead, as it allows you to change this setting for each worksheet individually.

If you retrieve this property while multiple worksheets exist where this setting has different values, the value `smoUndefined` will be returned.

**GridColumnColor (property)**

Data type: **Long** (SmoColor)

Gets or sets the color of the grid lines as a "BGR" value (Blue-Green-Red triplet). You can either indicate an arbitrary value or use one of the pre-defined BGR color constants.

Notes:

- This property is supported by PlanMaker only for Excel compatibility reasons. It is recommended to use the identically named property in the `Sheet` object instead, as it allows you to change this setting for each worksheet individually.
- If you retrieve this property while multiple worksheets exist where this setting has different values, the value `smoUndefined` will be returned.

**GridColumnColorIndex (property)**

Data type: **Long** (SmoColorIndex)

Gets or sets the color of the grid lines as an index color. "Index colors" are the standard colors of PlanMaker, consecutively numbered from -1 for automatic to 15 for light gray. You can use only one of the values presented in the Color Indices table.

Notes:

- This property is supported by PlanMaker only for Excel compatibility reasons. It is recommended to use the identically named property in the `Sheet` object instead, as it allows you to change this setting for each worksheet individually.
- If you retrieve this property while multiple worksheets exist where this setting has different values, the value `smoUndefined` will be returned.

**Workbook (pointer to object)**

Data type: **Object**

Returns the `Workbook` object assigned to this document window. You can use it to get and set various settings for your document.

**ActiveCell (pointer to object)**

Data type: **Object**
Returns a Range object that represents the active cell in the active document window. You can use this object to retrieve and change the formatting and the contents of the cell.

Please note that ActiveCell always returns just one individual cell – even if a range of cells is selected in the worksheet. After all, selected cell ranges have exactly one active cell as well. You can see that when you select cells and then press the Enter key: a cell frame appears within the selection to indicate the active cell.

**ActiveSheet (pointer to object)**

Data type: Object

Returns a Sheet object that represents the active worksheet in a document window. You can use this object to retrieve and change the settings of that worksheet.

**Application (pointer to object)**

Data type: Object

Returns the Application object.

**Parent (pointer to object)**

Data type: Object

Returns the parent object, i.e. Windows.

**Activate (method)**

Brings the document window to the foreground (if the property Visible for this document is True) and sets the focus to it.

Syntax:

```plaintext
Activate
```

Parameters:

- none

Return type:

- none

Example:

```plaintext
' Activate the first document window
pm.Windows(1).Activate
```

**Close (method)**

Closes the document window.
Syntax:

```
Close [SaveChanges]
```

Parameters:

*SaveChanges* (optional; type: *Long* or *SmoSaveOptions*) indicates whether the document opened in the window should be saved or not (if it was changed since last save). If you omit this parameter, the user will be asked to decide on it. The possible values for the parameter *SaveChanges* are:

- `smoDoNotSaveChanges = 0` ' Don't ask, don't save
- `smoPromptToSaveChanges = 1` ' Ask the user
- `smoSaveChanges = 2` ' Save without asking

Return type: none

Example:

```
' Close the active document window, without saving
pm.ActiveWindow.Close smoDoNotSaveChanges
```

---

**RecentFiles (collection)**

Access path: *Application* → *RecentFiles*

1. **Description**

*RecentFiles* is a collection of all recently opened files listed in the *File* menu. The individual elements of this collection are of the type *RecentFile*.

2. **Access to the collection**

There is exactly one instance of the *RecentFiles* collection during the whole runtime of PlanMaker. It is accessed directly through the *Application.RecentFiles* object:

```
' Show the name of the first recent file in the File menu
MsgBox pm.Application.RecentFiles.Item(1).Name

' Open the first recent file in the File menu
pm.Application.RecentFiles.Item(1).Open
```

3. **Properties, objects, collections, and methods**

Properties:

- *Count* R/O
- *Maximum*
Objects:
- Item → RecentFile (default object)
- Application → Application
- Parent → Application

Methods:
- Add

Count (property, R/O)
Data type: Long
Returns the number of RecentFile objects in PlanMaker – in other words: the number of the recently opened files listed in the File menu

Maximum (property, R/O)
Data type: Long
Gets or sets the setting "Recently used files in File menu", which determines how many recently opened files can be displayed in the File menu.
The value may be between 0 and 9.

Item (pointer to object)
Data type: Object
Returns an individual RecentFile object, ie one individual file entry in the File menu
Which RecentFile object you get depends on the numeric value that you pass to Item: 1 for the first of the recently opened files, 2 for the second, etc.

Application (pointer to object)
Data type: Object
Returns the Application object

Parent (pointer to object)
Data type: Object
Returns the parent object, i.e. Application

Add (method)
Adds a document to the list of recently opened files.
Syntax:
Add Document, [FileFormat]

Parameters:

Document is a string containing the file path and name of the document to be added.

FileFormat (optional; type: Long or PmSaveFormat) specifies the file format of the document to be added. The possible values are:

- pmFormatDocument = 0 ' PlanMaker document
- pmFormatTemplate = 1 ' PlanMaker document template
- pmFormatExcel97 = 2 ' Excel 97/2000/XP
- pmFormatExcel15 = 3 ' Excel 5.0/7.0
- pmFormatExcelTemplate = 4 ' Excel document template
- pmFormatSylk = 5 ' Sylk
- pmFormatRTF = 6 ' Rich Text Format
- pmFormatTextMaker = 7 ' TextMaker (= RTF)
- pmFormatHTML = 8 ' HTML document
- pmFormatdBaseDOS = 9 ' dBASE database with DOS character set
- pmFormatdBaseAnsi = 10 ' dBASE database with Windows character set
- pmFormatDIF = 11 ' Text file with Windows character set
- pmFormatPlainTextAnsi = 12 ' Text file with DOS character set
- pmFormatPlainTextDOS = 13 ' Text file with DOS character set
- pmFormatPlainTextUnix = 14 ' Text file with ANSI character set for UNIX, Linux, FreeBSD
- pmFormatPlainTextUnicode = 15 ' Text file with Unicode character set
- pmFormatdBaseUnicode = 16 ' dBASE database with Unicode character set
- pmFormatPlainTextUTF8 = 17 ' Text file with UTF8 character set
- pmFormatMSXML = 23 ' Excel 2007 and later
- pmFormatMSXMLTemplate = 24 ' Excel document template 2007 and later
- pmFormatPM2008 = 26 ' PlanMaker 2008 document
- pmFormatPM2010 = 27 ' PlanMaker 2010 document
- pmFormatPM2012 = 28 ' PlanMaker 2012 document
- pmFormatPM2012Template = 29 ' PlanMaker 2012 document template

If you omit this parameter, the value pmFormatDocument will be taken.

Tip: Independent of the value for the FileFormat parameter PlanMaker always tries to determine the file format by itself and ignores evidently false inputs.

Return type:

Object (a RecentFile object which represents the opened document)

Example:

' Add the file Test.pmd to the File menu
pm.Application.RecentFiles.Add "Test.pmd"

' Do the same, but evaluate the return value (mind the brackets!)
Dim fileObj as Object
Set fileObj = pm.Application.RecentFiles.Add("Test.pmd")
MsgBox fileObj.Name
**RecentFile (object)**

Access path: Application → RecentFiles → Item

### Description

A RecentFile object represents one individual of the recently opened files. You can use it to retrieve the properties of such a file and to open it again.

For each recently opened file there is its own RecentFile object. For each document that you open or close, the list of these files in the File menu will change accordingly – i.e., the respective RecentFile objects will be created or deleted dynamically.

### Access to the object

The individual RecentFile objects can be accessed solely through enumerating the elements of the RecentFiles collection. It can be accessed through the Application RecentFiles object:

```vba
' Show the name of the first file in the File menu
MsgBox pm.Application.RecentFiles.Item(1).Name
```

### Properties, objects, collections, and methods

**Properties:**
- **FullName** R/O
- **Name** (default property) R/O
- **Path** R/O

**Objects:**
- **Application** → Application
- **Parent** → RecentFiles

**Methods:**
- **Open**

#### FullName (property, R/O)

Data type: String

Returns the path and name of the document in the File menu (e.g. "c:\Documents\Smith.tmd").

#### Name (property, R/O)

Data type: String
Returns the name of the document (e.g. Smith.pmd).

Path (property, R/O)
Data type: String
Returns the path of the document (e.g. c:\Documents).

Application (pointer to object)
Data type: Object
Returns the Application object

Parent (pointer to object)
Data type: Object
Returns the parent object, i.e. RecentFiles

Open (method)
Opens the appropriate document and returns the Workbook object for it
Syntax:
    Open
Parameters:
    none
Return type:
    Workbook
Example:
    ' Open the first recent file displayed in the File menu
    pm.Application.RecentFiles(1).Open

FontNames (collection)
Access path: Application ➔ FontNames
1 **Description**

FontNames is a collection of all fonts installed in Windows. The individual elements of this collection are of the type FontName.

2 **Access to the collection**

There is exactly one instance of the FontNames collection during the whole runtime of PlanMaker. It is accessed through the Application.FontNames object:

- Display the name of the first installed font
  
```vba
  MsgBox pm.Application.FontNames.Item(1).Name
  ```

- The same, but shorter, omitting the default properties:
  
```vba
  MsgBox pm.FontNames(1)
  ```

3 **Properties, objects, collections, and methods**

Properties:
- **Count**  R/O

Objects:
- **Item** → FontName (default object)
- **Application** → Application
- **Parent** → Application

**Count (property, R/O)**

Data type: **Long**

Returns the number of FontName objects – in other words: the number of fonts installed in Windows

**Item (pointer to object)**

Data type: **Object**

Returns an individual FontName object, ie an individual installed font

*Which* FontName object you get depends on the numeric value that you pass to **Item**: 1 for the first installed font, 2 for the second, etc.

**Application (pointer to object)**

Data type: **Object**

Returns the Application object
**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. **Application**

---

**FontName (object)**

Access path: **Application → FontNames → Item**

---

**1 Description**

A **FontName** object represents one individual of the fonts installed in Windows. For each installed font there is its own **FontName** object.

**2 Access to the object**

The individual **FontName** objects can be accessed solely through enumerating the elements of the **FontNames** collection. It can be accessed through the **ApplicationFontNames** object:

' Display the name of the first installed font
MsgBox pm.Application.FontNames.Item(1).Name

' The same, but shorter, omitting the default properties:
MsgBox pm.FontNames(1)

---

**3 Properties, objects, collections, and methods**

Properties:
- **Name** (default property) R/O
- **Charset** R/O

Objects:
- **Application → Application**
- **Parent → FontNames**

---

**Name (property, R/O)**

Data type: **String**

Returns the name of the respective font.
**Charset (property, R/O)**

Data type: **Long** (SmoCharset)

Returns the character set of the respective font. The possible values are:

- `smoAnsiCharset = 0` 'normal character set'
- `smoSymbolCharset = 2` 'symbol character set'

**Application (pointer to object)**

Data type: **Object**

Returns the `Application` object

**Parent (pointer to object)**

Data type: **Object**

Returns the parent object, i.e. `FontNames`
Commands and functions from A to Z

In this chapter you will find descriptions of all commands and functions available in SoftMaker Basic:

- **Flow control**
  - Do Loop, End, Exit, For Next, Gosub, Goto, If Then Else, Return, Select Case, Stop, While Wend
- **Conversion**
  - Asc, CDbl, Chr, CInt, CLng, CSng, CStr, Fix, Format, Hex, Int, Oct, Str, Val
- **Date and Time**
  - Date, DateSerial, DateValue, Day, Hour, Minute, Month, Now, Second, Time, TimeSerial, TimeValue, Weekday, Year
- **Dialogs**
  - Dialog, Dialog function, DlgEnable, DlgText, DlgVisible
- **File operations**
  - ChDir, ChDrive, Close, CurDir, EOF, FileCopy, FileLen, FreeFile, Input, Kill, Line Input #, MkDir, Open, Print #, RmDir, Seek, Write #
- **Arithmetic**
  - Abs, Atn, Cos, Exp, Log, Rnd, Sgn, Sin, Sqr, Tan
- **Procedures**
  - Call, Declare, Exit, Function End Function, Sub End Sub
- **String handling**
  - Asc, Chr, InStr, LCase, Left, Len, LTrim, Mid, Right, RTrim, Space, Str, StrComp, String, Trim
- **Variables and constants**
  - Const, Dim, IsDate, IsEmpty, IsNull, IsNumeric, Option Explicit, VarType
- **Arrays**
  - Dim, Erase, LBound, Option Base, Option Explicit, Static, UBound
- **Applications and OLE**
- **Miscellaneous**
  - #include, Beep, Rem
#include (statement)

#include "[Path]\Filename"

Embeds a file with Basic statements into the current script – as if the file's content was copied and pasted at the
place where the #include statement resides.

For example, you can create a file that contains the definitions of some constants or dialogs that you want to
reuse in multiple scripts. To embed this file into any script, simply add the #include command at the desired
position.

Note: You can omit the file path if the file to embed resides in the same folder.

Example:

#include "code_snippet.bas"
#include "c:\scripts\code_snippet.bas"

Abs (function)

Abs (Num)

Returns the absolute value of the numeric value Num, i.e., removes its sign. If Num is zero, Abs returns zero.

The type of the return value corresponds to the type of the passed parameter Num. Exception: if Num is a
Variant of VarType 8 (String) and can be converted to a number, the result will have the type Variant of
VarType 5 (Double).

See also: Sgn

Example:

Sub Main    Dim Msg, x, y    x = InputBox("Enter a number:")    y = Abs(x)    Msg = "The absolute value of " & x & " is: " & y    MsgBox MsgEnd Sub
AppActivate (statement)

**AppActivate** "Title"

Activates an already running application, i.e., brings the application window to the front and sets the focus to
the application.

The text string *Title* is the application name as it appears in the title bar.

See also: [AppDataMaker](#), [AppPlanMaker](#), [AppTextMaker](#), [CreateObject](#), [GetObject](#), [Shell](#)

Example:

```vbnet
Sub Main
    X = Shell("Calc.exe", 1)        ' Run the Calculator application
    For i = 1 To 5
        SendKeys i & "{+}", True    ' Send keystrokes
    Next i
    MsgBox "The Calculator will be closed now."       ' Set the focus to the calculator
    AppActivate "Calculator"                ' Send Alt+F4 to close the application
End Sub
```

AppDataMaker (function)

**AppDataMaker** ["Command line parameters"]

Starts the database program DataMaker.

The return value is a task ID that identifies the program. Values below 32 indicate that launching the program
failed.

You can pass the name of the file to be opened as a command line parameter – for example:

```vbnet
AppDataMaker "c:\Data\Customers.dbf"
```

To ensure that this command does not fail, DataMaker must be registered in the Windows Registry. If this is not
the case, it is sufficient to start DataMaker once conventionally. The program will then automatically update its
settings in the Registry.

See also: [AppPlanMaker](#), [AppSoftMakerPresentations](#), [AppTextMaker](#), [CreateObject](#), [GetObject](#), [Shell](#)
AppPlanMaker (function)

AppPlanMaker ["Command line parameters"]

Starts the spreadsheet program PlanMaker.

The return value is a task ID that identifies the program. Values below 32 indicate that launching the program failed.

You can pass the name of the file to be opened as a command line parameter – for example:

AppPlanMaker "c:\Data\Table1.pmd"

To ensure that this command does not fail, PlanMaker must be registered in the Windows Registry. If this is not the case, it is sufficient just to start PlanMaker once conventionally. The program will then automatically update its settings in the Registry.

Hint: This command simply starts the PlanMaker application without establishing an OLE Automation connection. If you would like to make an OLE Automation connection to PlanMaker, you can use the function GetObject after invoking AppPlanMaker. Alternatively, you can use the function CreateObject in place of AppPlanMaker. In this case, PlanMaker will be launched and an OLE Automation connection will be established at the same time.

See also: AppDataMaker, AppSoftMakerPresentations, AppTextMaker, CreateObject, GetObject, Shell

AppSoftMakerPresentations (function)

AppSoftMakerPresentations ["Command line parameters"]

Starts the presentation graphics program Presentations.

The return value is a task ID that identifies the program. Values below 32 indicate that launching the program failed.

You can pass the name of the file to be opened as a command line parameter – for example:

AppSoftMakerPresentations "c:\Data\Presentation1.prd"

To ensure that this command does not fail, Presentations must be registered in the Windows Registry. If this is not the case, it is sufficient just to start Presentations once conventionally. The program will then automatically update its settings in the Registry.

See also: AppDataMaker, AppTextMaker, CreateObject, GetObject, Shell
AppTextMaker (function)

AppTextMaker ["Command line parameters"]

Starts the word processor TextMaker.

The return value is a task ID that identifies the program. Values below 32 indicate that launching the program failed.

You can pass the name of the file to be opened as a command line parameter – for example:

AppTextMaker "c:\Documents\Letter.tmd"

To ensure that this command does not fail, TextMaker must be registered in the Windows Registry. If this is not the case, it is sufficient just to start TextMaker once conventionally. The program will then automatically update its settings in the Registry.

**Hint:** This command simply starts the TextMaker application without establishing an OLE Automation connection. If you would like to make an OLE Automation connection to TextMaker, you can use the function **GetObject** after invoking **AppTextMaker** Alternatively, you can use the function **CreateObject** in place of **AppTextMaker** In this case, TextMaker will be launched and an OLE Automation connection will be established at the same time

See also: AppDataMaker, AppPlanMaker, AppSoftMakerPresentations, CreateObject, GetObject, Shell

Asc (function)

Asc(Str)

Returns the character code of the first letter in a string according to the Unicode character table (UCS-2).

The result is an integer value between 0 and 32767.

See also: Chr

Example:

Sub Main
  Dim i, Msg
  For i = Asc("A") To Asc("Z")
    Msg = Msg & Chr(i)
  Next i
  MsgBox Msg
End Sub
**Atn (function)**

**Atn** *(Num)*

Returns the arctangent of a number. The result is expressed in radians.

See also: **Cos, Sin, Tan**

Example:

```vba
Sub AtnExample
    Dim Msg, Pi As Double    ' Declare variables
    Pi = 4 * Atn(1)          ' Calculate Pi
    Msg = "Pi = " & Str(Pi)
    MsgBox Msg               ' The result: "Pi = 3.1415..."
End Sub
```

**Beep (statement)**

**Beep**

Emits a short tone.

Example:

```vba
Sub Beep3x
    Dim i As Integer
    For i = 1 To 3
        Beep
    Next i
End Sub
```

**Begin Dialog ... End Dialog (statement)**

**Begin Dialog** **DialogName** [X, Y,] **Width, Height, Title$** [, **DialogFunction**]

**DialogDefinition...**

**End Dialog**

Is used to define a custom dialog box. See the section **Dialog definition**.

More information about creating custom dialog boxes can be found in the section **Dialog boxes**.
Call (statement)

Call Name [(Parameters)]

Or:
Name [Parameters]

Executes the Sub or Function procedure or DLL function with the name Name.

Parameters is a comma-separated list of parameters which can be passed to the procedure.

The keyword Call is usually omitted. If it is used, the parameter list must be enclosed in parentheses, otherwise parentheses may not be used.

Call Name(Parameter1, Parameter2 ...) has therefore the same meaning as Name Parameter1, Parameter2 ...

Functions can also be executed using the instruction Call, however their return value will then be lost.

See also: Declare, Function, Sub

Example:

Sub Main
    Dim y As Integer
    y = 25
    If VarType(y) = 2 Then
        Call Beep
        x = CDbl(y)
        Print x
    End If
End Sub

CDbl (function)

CDbl(Expression)

Converts an expression to the Double data type. The parameter Expression must be a number or a string.

See also: CInt, CLng, CSng, CStr

Example:

Sub Main
    Dim y As Integer
    y = 25
    If VarType(y) = 2 Then
        x = CDbl(y)
        Print x
    End If
End Sub
ChDir (statement)

**ChDir** [Drive:]Folder

Changes to a different current drive/folder.

*Drive* is an optional parameter (the default value is the current drive).

*Folder* is the name of the folder on the given drive.

The full path may not have more than 255 characters.

See also: [CurDir](#), ChDrive, MkDir, RmDir

**Example:**

```vba
Sub Main
    Dim Answer, Msg, NL
    NL = Chr(10) ' Chr(10)=New line
    CurPath = CurDir() ' Determine current path
    ChDir '"'
    Msg = "The folder was changed to " & CurDir() & "."
    Msg = Msg & NL & NL & "Click on OK "
    MsgBox(Msg)
End Sub
```

ChDrive (statement)

**ChDrive** Drive

Changes the current drive.

*Drive* is a text string specifying the drive letter.

If *Drive* is a multi-character string, only the first character will be used.

See also: ChDir, CurDir, MkDir, RmDir

**Example:**

```vba
Sub Main
    Dim Answer, Msg, NL
    NL = Chr(10) ' Chr(10)=New Line
    CurPath = CurDir() ' Determine current path
    ChDrive "D"
    Msg = "The folder was changed to " & CurDir() & "."
    MsgBox(Msg)
End Sub
```
Msg = Msg & "to return to the previous folder."
Answer = MsgBox(Msg)
ChDir CurPath  ' Back to the original folder
Msg = " We are now back to the folder " & CurPath & "."
MsgBox Msg
End Sub

---

**Chr (function)**

**Chr(Num)**

Returns the character associated with the specified character code from the Unicode character table (UCS-2).

The parameter *Num* can take an integer value between 0 and 32767.

**See also:** Asc

**Example:**

Sub Main
  Dim i, Msg
  For i = Asc("A") To Asc("Z")
    Msg = Msg & Chr(i)
  Next i
  MsgBox Msg
End Sub

---

**CInt (function)**

**CInt(Expression)**

Converts an expression to the *Integer* data type.

The parameter *Expression* must be a number or a string consisting of a number.

The valid range of values:

\[-32768 \leq Expression \leq 32768\]

**See also:** CDbl, CLng, CSng, CStr

**Example:**

Sub Main
  Dim y As Long
  y = 25
  x = CInt(y)
  Print x
End Sub
CLng (function)

**CLng(Expression)**

Converts an expression to the **Long** data type.

The parameter *Expression* must be a number or a string consisting of a number.

The valid range of values:

\[-2147483648 \leq Expression \leq 2147483648\]

**See also:** [CDbl](#), [CInt](#), [CSng](#), [CStr](#)

**Example:**

```vbscript
Sub Main
    Dim y As Integer
    y = 25
    If VarType(y) = 2 Then
        Print y
        x = CLng(y)
        Print x
    End If
End Sub
```

Close (statement)

**Close [[#]FileNumber]**

Closes a specific open file or all open files.

*FileNumber* is the number assigned to the file by the **Open** command. If you omit it, all currently opened files will be closed.

**See also:** [Open](#)

**Example:**

```vbscript
Sub Make3Files
    Dim i, FNum, Fname
    For i = 1 To 3
        FNum = FreeFile ' Retrieve a free file index
        FName = "TEST" & FNum
        Open FName For Output As Fnum ' Open file
        Print #I, "This is test #" & i ' Write to file
        Print #I, "One more line"
    Next i
    Close ' Close all files
End Sub
```
**Const (statement)**

*Const Name = Expression*

Defines a symbolic name for a constant. Constants defined outside of procedures are always global.

A type suffix (e.g. % for `Integer`, see the section `Data types`) can be attached to the name, determining the data type of the constant. Otherwise, the type is `Long`, `Double`, or `String`, depending on the constant value.

See also: Section `Data types`

**Example:**

Global `Const` GlobalConst = 142
`Const` MyConst = 122

Sub Main
  Dim Answer, Msg
  `Const` PI = 3.14159...

Cos (function)

*Cos (Num)*

Returns the cosine of an angle. The angle must be expressed in radians.

See also: `Atn`, `Sin`, `Tan`

**Example:**

Sub Main
  pi = 4 * Atn(1)
  rad = 180 * (pi/180)
  x = Cos(rad)
  Print x
End Sub
CreateObject (function)

CreateObject(Class)

Creates an OLE Automation object and returns a reference to this object.
The function expects the following syntax for the Class parameter:

Application.Class

Application is the application name and Class is the object type. Class is the name under which the object is listed the Windows Registry.

Example:

Set tm = CreateObject("TextMaker.Application")

When you invoke this function and the respective application is not already running, it will launch automatically.

As soon as the object has been created, its methods and properties can be accessed using dot notation – for example:

tm.Visible = True    ' makes TextMaker's application window visible

See also: GetObject, Set, section OLE Automation

CSng (function)

CSng(Expression)

Converts an expression to the Single data type.

See also: CDbI, CInt, CLng, CStr

Example:

Sub Main
  Dim y As Integer
  y = 25
  If VarType(y) = 2 Then
    Print y
    x = CSng(y)
    Print x
  Else
    End If
End Sub
CStr (function)

CStr(Expression)

Converts an expression to the String data type.

Unlike the Str function, the string returned by CStr does not have a leading space character if it contains a positive number.

See also: CDbl, CInt, CLng, CSng, Str

CurDir (function)

CurDir(Drive)

Returns the current folder on the given drive.

Drive is a text string specifying the drive letter. If Drive is not specified, the current drive will be used.

See also: ChDir, ChDrive, MkDir, RmDir

Example:

Sub Main
    MsgBox "The current folder is: " & CurDir()
End Sub

Date (function)

Date []

Returns the current system date in short date format.

The short date format can be changed using the Regional Settings applet in the Windows Control Panel.

The result is a Variant of VarType 8 (String).

See also: DateSerial, DateValue, Day, Month, Now, Time, Weekday, Year

Example:

Sub Main
    MsgBox "Today is " & Date & "."
**DateSerial (function)**

*DateSerial*(Year, Month, Day)

Returns a Variant variable (type: date) corresponding to the specified year, month, and day.

See also: **DateValue, Day, Month, Now, Time, TimeSerial, TimeValue, Weekday, Year**

**Example:**

```vba
Sub Main
    Print DateSerial(2018, 09, 25)
End Sub
```

**DateValue (function)**

*DateValue*(DateExpression)

Returns a Variant variable (type: date) corresponding to the specified date expression. *DateExpression* can be a string or any expression that represents a date, a time, or both a date and a time.

See also: **DateSerial, Day, Month, Now, Time, TimeSerial, TimeValue, Weekday, Year**

**Example:**

```vba
Sub Main
    Print DateValue("Sep 25, 2018")
End Sub
```

**Day (function)**

*Day*(Expression)

Returns the day of the month for the given date expressed as an integer value.

*Expression* is a numeric or string expression which represents a date.

See also: **Date, Hour, Minute, Month, Now, Second, Time, Weekday, Year**

**Example:**

```vba
Sub Main
    T1 = Now ' Now = current date + time
End Sub
```
Declare Sub Name Lib LibName$ [Alias AliasName$] ([Parameters])

Or:
Declare Function Name Lib LibName$ [Alias AliasName$] ([Parameters]) [As Type]

Declares a procedure or a function contained in a Dynamic Link Library (DLL).

*Name* is the name of the procedure or function.

*LibName* is the name of the DLL in which the procedure or function resides.

*AliasName* is the name under which the procedure or the function is exported from the DLL. If *AliasName* is omitted, it will be the same as *Name*. An alias is required, for example, if the exported name is a reserved name in SoftMaker Basic or contains characters which are not allowed in names.

*Parameters* is a comma-separated list of parameter declarations (see below).

*Type* specifies the data type (*String*, *Integer*, *Double*, *Long*, *Variant*). Alternatively, the type can be indicated by appending a type suffix (e.g. % for *Integer*) to the function name (see the section [Data types](#)).

The `Declare` command can be used only outside of `Sub` and `Function` declarations.

**Declaring parameters**

```
[ByVal | ByRef] Variable [As Type]
```

The keywords *ByVal* or *ByRef* (default value) are used to indicate whether the parameter is passed by value or by reference (see the section [Passing parameters via ByRef or ByVal](#)).

*Type* specifies the data type (*String*, *Integer*, *Double*, *Long*, *Variant*). Alternatively, the type can be indicated using a type suffix – e.g. % for *Integer* (see the section [Data types](#)).

See also: `Call`, section [Data types](#)
**Dialog (function)**

**Dialog** *(Dlg)*

Displays a custom dialog box.

*Dlg* is the name of a dialog variable that must have been declared previously with the **Dim** command.

The return value is the index of the button that was pressed by the user:

-1  **OK**

0   **Cancel**

> 0   User-defined command buttons (1 for the first, 2 for the second, etc.)

See also: **DlgEnable**, **DlgText**, **DlgVisible**, section **Dialog boxes**

**Example:**

' Shows different information, depending on
' which button was pressed.

Sub Main

    Dim MyList$(2)
    MyList(0) = "Banana"
    MyList(1) = "Orange"
    MyList(2) = "Apple"

    Begin Dialog DialogName1 60, 60, 240, 184, "Test Dialog"
        Text 10, 10, 28, 12, "Name:"
        TextBox 40, 10, 50, 12, .joe
        ListBox 102, 10, 108, 16, MyList$(()), .MyList1
        ComboBox 42, 30, 108, 42, MyList$(()), .Combol
        DropListBox 42, 76, 108, 36, MyList$(()), .DropList1$
        OptionGroup .grp1
            OptionButton 42, 100, 48, 12, "Option1"
            OptionButton 42, 110, 48, 12, "Option2"
        OptionGroup .grp2
            OptionButton 42, 136, 48, 12, "Option3"
            OptionButton 42, 146, 48, 12, "Option4"
        GroupBox 132, 125, 70, 36, "Group"
        CheckBox 142, 100, 48, 12, "Check&A", .Check1
        CheckBox 142, 110, 48, 12, "Check&B", .Check2
        CheckBox 142, 136, 48, 12, "Check&C", .Check3
        CheckBox 142, 146, 48, 12, "Check&D", .Check4
    CancelButton 42, 168, 40, 12
    OKButton 90, 168, 40, 12
    PushButton 140, 168, 40, 12, "Button1"
    PushButton 190, 168, 40, 12, "Button2"
   End Dialog

    Dim Dlg1 As DialogName1
    Dlg1.joe = "Hare"
    Dlg1.MyList1 = 1
    Dlg1.Combol = "Kiwi"
    Dlg1.DropList1 = 2
    Dlg1.grp2 = 1
' Dialog returns -1 for OK, 0 for Cancel, # for Button1/2
button = Dialog(Dlg1)
If button = 0 Then Return
MsgBox "Input Box: " & Dlg1.joe
MsgBox "List Box: " & Dlg1.MyList1
MsgBox Dlg1.Combo1
MsgBox Dlg1.DropList1
MsgBox "Group1: " & Dlg1.grp1
MsgBox "Group2: " & Dlg1.grp2

Begin Dialog DialogName2 60, 60, 160, 60, "Test Dialog 2"
    TextBox 42, 10, 108, 12, "Name:"
    OkButton 42, 44, 40, 12
End Dialog

If button = 2 Then
    Dim Dlg2 As DialogName2
    Dialog Dlg2
    MsgBox Dlg2.fred
ElseIf button = 1 Then
    Dialog Dlg1
    MsgBox Dlg1.Combo1
End If

End Sub

---

**Dim (statement)**

```
Dim Name [(Subscripts)] [As Type] [, ...]
```

Allocates memory for a variable and defines its type.

*Name* is the name of the variable.

*Subscripts* indicates the number and size of the dimensions, in case an array is created (see the section Arrays).

Use the following syntax:

```
[LowerLimit To] UpperLimit [, [LowerLimit To] UpperLimit ] ...
```

For LowerLimit and UpperLimit, you should give integer values that determine the largest and smallest allowed values for the array index, thereby specifying the array size. Only fixed values are allowed (no variables).

If LowerLimit is omitted, it will take the value specified through the Option Base command (0 or 1)

To declare dynamic arrays (see the ReDim command), omit all limits:

```
Dim a()
```

*Type* specifies the data type (*Integer, Long, Single, Double, String, String*n, Boolean, Variant, Object* or a user-defined). Alternatively, the type can be indicated by appending a type suffix (e.g. % for *Integer*) to the variable name (see the section *Data types*).

For example:
Dim Value As Integer

is identical to:

Dim Value%

If neither a data type nor a type suffix is given, a Variant variable will be created.

See also: Option Base, ReDim, section Variables

Example:

Sub Main
  Dim a As Integer   ' (alternatively: Dim a%)
  Dim b As Long
  Dim c As Single
  Dim d As Double
  Dim e As String
  Dim f As Variant   ' (alternatively: Dim f or Dim f as Any)
  Dim g(10,10) As Integer  ' Array of variables
  .
  .

DlgEnable (statement)

DlgEnable "Name" [, State]

Enables or disables a dialog control in a custom dialog box. A disabled dialog control is shown in gray. It cannot be changed by the user.

This command can be called from inside dialog functions.

The string Name is the name of the dialog control in the dialog box.

If State = 0, the dialog control will be disabled; for all other values of State it will be enabled. If State is not specified, the state of the dialog control will be toggled.

See also: DlgText, DlgVisible, section Dialog boxes

Example:

If ControlIDS = "Chk1" Then
  DlgEnable "Group", 1
  DlgVisible "Chk2"
  DlgVisible "History"
End If
**DlgText (statement)**

**DlgText** "Name", Text

Sets the text of a dialog control in a custom dialog box.

This command can be called from inside dialog functions.

The string Name is the name of the dialog control in the dialog box.

The string Text is the text to be set.

See also: **DlgEnable**, **DlgVisible**, section Dialog boxes

**Example:**

```
If ControlID$ = "Chk2" Then
  DlgText "t1", "Open"
End If
```

**DlgVisible (statement)**

**DlgVisible** "Name", [Value]

Hides a dialog control in a custom dialog box or makes it visible again.

This command can be called from inside dialog functions.

The string Name is the name of the dialog control in the dialog box.

If Value = 0, the dialog control will be hidden, for all other values of Value it will be displayed. If Value is not specified, the dialog control will be hidden if it is currently visible, and vice versa.

See also: **DlgEnable**, **DlgText**, section Dialog boxes

**Example:**

```
If ControlID$ = "Chk1" Then
  DlgEnable "Group", 1
  DlgVisible "Chk2"
  DlgVisible "Open"
End If
```
### Do ... Loop (statement)

Do  [{While|Until} Condition]
   [Commands]
   [Exit Do]
   [Commands]
Loop

Or:

Do
   [Commands]
   [Exit Do]
   [Commands]
Loop  [{While|Until} Condition]

Executes a group of commands repeatedly as long as a condition is true (Do ... While) or until a condition becomes true (Do ... Until). See also the section Flow control.

See also: [While Wend](#), section Flow control

Example:

Sub Main
   Dim Value, Msg
   Do
      Value = InputBox("Enter a number between 5 and 10.")
      If Value >= 5 And Value <= 10 Then
         Exit Do   ' Number is OK -> Exit
      Else
         Beep     ' Number is not OK -> try once more
      End If
   Loop
End Sub

### End (statement)

End  [{Function|If|Sub}]

Stops executing a script or a command block.

See also: Exit, Function, If Then Else, Select Case, Stop, Sub

Example:

In this example, the End command ends the program execution within the routine "Test".

Sub Main
   Dim Var1 as String
   Var1 = "Hello"
   MsgBox "Test"
Test Var1
MsgBox Var1
End Sub

Sub Test(wvar1 as String)
    wvar1 = "End"
    MsgBox "Program terminated because of the End command"
End
End Sub

**EOF (function)**

**EOF(FileNumber)**

Returns **True** if the end of the file" has been reached.

*FileNumber* is the number assigned to the respective file by the **Open** command.

**See also:** **Open**

**Example:**

' Read 10 characters at a time from a file and display them.
' "Testfile" must already exist.

Sub Main
    Open "TESTFILE" For Input As #1    ' Open file
    Do While Not EOF(1)               ' Repeat until end of file        MyStr = Input(10, #1)         ' Read 10 characters        MsgBox MyStr
    Loop
    Close #1                          ' Close file
End Sub

**Erase (statement)**

**Erase** ArrayName [, ...]

Re-initializes the elements of an array.

**See also:** **Dim**

**Example:**

Option Base 1

Sub Main
    Dim a(10) As Double
    Dim i As Integer
    For i = 1 to 3
        a(i) = 2 + i
    Next i
Exit (statement)

Exit {Do|For|Function|Sub}

Exits from a Do loop, a For loop, a function, or a procedure.

See also: End, Stop

Example:

Sub Main    Dim Value, Msg    Do        Value = InputBox("Enter a number between 5 and 10.")        If Value >= 5 And Value <= 10 Then            Exit Do        ' Number is OK -> Exit from the loop        Else            Beep        ' Number is not OK -> try once more        End If    LoopEnd Sub

Exp (function)

Exp(Number)

Calculates the exponential function (e ^ Number).

The value of the constant e (Euler's constant) is approximately 2.71828.

See also: Log

Example:

' Exp(x)=e^x, therefore Exp(1)=e

Sub ExpExample    Dim Msg, ValueOfE    ValueOfE = Exp(1)    Msg = "The value of e is " & ValueOfE    MsgBox MsgEnd Sub
FileCopy (statement)

FileCopy SourceFile, TargetFile

Copies the file SourceFile to TargetFile.

The parameters SourceFile and TargetFile must be strings with the desired file names. Wildcard characters such as "*" or "?" are not allowed.

FileLen (function)

FileLen(Filename)

Returns the size of the specified file in bytes (as a Long Integer).

The parameter Filename must be a string with the desired file name. Wildcard characters such as "*" or "?" are not allowed.

Fix (function)

Fix(Num)

Returns the integral part of a numerical expression.

The difference to the Int function is in the handling of negative numbers: while Int always returns the next integer less than or equal to Num, the function Fix simply removes the part after the decimal separator (see example)

See also: Int

Example:

Sub Main
    Print Int( 1.4)  ' -> 1
    Print Fix( 1.4)  ' -> 1
    Print Int(-1.4)  ' -> -2
    Print Fix(-1.4)  ' -> -1
End Sub
For Each ... Next (statement)

For Each Element In Group
  [Commands]
  [Exit For]
  [Commands]
Next Element

Executes a group of commands for all elements of a field or a collection.

Element is a variable of type Variant (for arrays) or Object (for collections) that successively takes on the values of the individual elements from Group.

For Each ... Next cannot be used with arrays of user-defined types.

See also: For Next, Exit, section Arrays, section Using collections

Example:

Sub Main
  Dim z(1 To 4) As Double
  z(1) = 1.11
  z(2) = 2.22
  z(3) = 3.33
  z(4) = 4.44
  For Each v In z
    Print v
  Next v
End Sub

For ... Next (statement)

For Counter = InitialValue To FinalValue [Step StepSize]
  [Commands]
  [Exit For]
  [Commands]
Next Counter

Executes a group of commands in a loop.

Counter is the counter variable that is increased by the value indicated in StepSize at each iteration.

InitialValue is the initial value for Counter.

FinalValue is the final value for Counter.

StepSize is the step value. If it is omitted, the step value is 1.

In the first iteration, Counter assumes the value of InitialValue. At each additional iteration, StepSize is added to the value of Counter. The loop execution will end as soon as FinalValue is exceeded.
See also: For Each Next, Exit, section Flow control

Example:

```vba
Sub Main
    Dim x, y, z
    For x = 1 To 3
        For y = 1 To 3
            For z = 1 To 3
                Print z, y, x
            Next z
        Next y
    Next x
End Sub
```

---

**Format (function)**

`Format(Expression [, Format])`

Returns a string consisting of the `Expression` parameter formatted according to the chosen formatting instructions.

The desired format is specified using the string parameter `Format`. You can choose from several predefined formats that are listed on the pages that follow. Additionally, more precise formatting can be achieved using user-defined formats.

If the parameter `Format` is empty and `Expression` is a number, the `Format` function will return the same result as the `Str` function, with the exception that `Format` does not prepend a space character to positive numbers.

For numeric formats, `Expression` must be a numeric expression; for string formats it must be a string. For date/time formats, `Expression` must be a string with the same structure as returned by the `Now` function.

See also: `Str`, sections Numeric formats of the Format function, Date/time formats of the Format function, and String formats of the Format function

Example:

```vba
Sub Main
    MsgBox Format(Date, "long date")
    MsgBox Format(Date, "dd.mm.yy")
End Sub
```

---

**Numeric formats of the Format function**

The following table lists the predefined numeric formats for the `Format` function:

<table>
<thead>
<tr>
<th>Format name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
General Number  
Output the unformatted number

Fixed  
Output with at least one digit to the left and exactly two digits to the right of the decimal separator

Standard  
Output with at least one digit to the left and exactly two digits to the right of the decimal separator; additionally, the thousands separator is used for numbers $\geq 1000$

Percent  
Output with at least one digit to the left and exactly two digits to the right of the decimal separator; additionally, the number is multiplied by 100 and a percent sign is appended

Scientific  
Output with at least one digit to the left and exactly two digits to the right of the decimal separator using scientific notation (exponential notation)

True/False  
"False" if the number is zero, otherwise "True"

User-defined numeric formats

User-defined numeric formats can be composed of the following signs:

<table>
<thead>
<tr>
<th>Sign</th>
<th>Meaning</th>
</tr>
</thead>
</table>
| 0    | Placeholder for digits: Output a digit or zero.  
If the number to be formatted has a digit in the position where Format has "0", this digit is output, otherwise 0 is output. If the number to be formatted has fewer digits to the left and to the right of the decimal separator than the number of "0" defined in the Format, leading or trailing zeros are displayed. If the number to be formatted has more digits to the right of the decimal separator than the number of "0" defined in Format, the number will be rounded to the corresponding number of digits. If the number to be formatted has more digits to the left of the decimal separator than the number of "0" defined in Format, the extra digits will always be output. |
| #    | Placeholder for digits: Output a digit or nothing.  
If the number to be formatted has a digit in the position of "#" in Format, this digit is output, otherwise nothing is displayed. |
| .    | Decimal separator |
| %    | Percent sign. Causes a percent sign (%) to be output; furthermore, the expression is multiplied by 100. |
| ,    | Thousands separator. If the number $\geq 1000$, this sign is inserted between the thousands and the hundreds. |
| E-, E+, e-, e+ | Scientific format. If Format has at least one digit placeholder (0 or #) to the right of E-, E+, e-, or e+, the number is formatted using a scientific format. This is achieved by inserting an E or e between the mantissa and the exponent. The number of digit placeholders to its right defines the number of digits in the exponent. In case of E+/e+, the exponent is always output with its sign, in case of E-/e- notation the sign is only output if the exponent is negative. |
: Time separator. The actual character that is output is defined by the time format in Windows Control Panel.

/ Date separator. The actual character that is output is defined by the date format in Windows' Control Panel.

- + $ ( ) Space character The specified character is output. To output any other character, it must be preceded by a backslash \ or enclosed in quotation marks.

\ The character following the \ is output. The backslash itself is not displayed. To output a backslash, duplicate it (\).  

"Text" The string enclosed in quotation marks is output. The quotation marks themselves are not displayed.

* Defines the character immediately following as a fill character. Spaces will then be filled using this character.

User-defined numeric formats can have from one to four sections:

<table>
<thead>
<tr>
<th>Sections</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 section</td>
<td>This format applies to all values.</td>
</tr>
<tr>
<td>2 sections</td>
<td>The format in the first section applies to positive values and zero, the one in the second section to negative values.</td>
</tr>
<tr>
<td>3 sections</td>
<td>The first format applies to positive values, the second one to negative values, and the third one to zero.</td>
</tr>
<tr>
<td>4 sections</td>
<td>The first format applies to positive values, the second one to negative values, the third one to zero and the fourth one to Null values (see the IsNull function).</td>
</tr>
</tbody>
</table>

If one of these sections is left empty, the format for positive numbers will be used in its place.

The individual sections must be separated by semicolons.

**Examples**

The following table gives some examples. The left column consists of the format expression, the remaining columns have the results for the numbers 3, -3, 0.3 and for the NULL value.

<table>
<thead>
<tr>
<th>Format</th>
<th>3</th>
<th>-3</th>
<th>0.3</th>
<th>NULL</th>
</tr>
</thead>
<tbody>
<tr>
<td>(empty)</td>
<td>3</td>
<td>-3</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>&quot;0&quot;</td>
<td>3</td>
<td>-3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>&quot;0.00&quot;</td>
<td>3.00</td>
<td>-3.00</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td>&quot;#,##0&quot;</td>
<td>3</td>
<td>-3</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
### Date/time formats of the **Format** function

Date and time values are simply floating point numbers. The positions to the left of the decimal point define the date, the positions to its right the time. If the number has no digits to the right of the decimal point, it consists of only the date. Conversely, if it has no digits to the left of the decimal point, it consists of only the time.

Date and time values can be formatted using predefined or user-defined formatting codes.

The following table lists the predefined date/time formats for the **Format** function:

<table>
<thead>
<tr>
<th>Format name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Date</strong></td>
<td>Outputs the date and/or time without any formatting (i.e., typically in the short date format).</td>
</tr>
<tr>
<td><strong>Short Date</strong></td>
<td>Outputs the date in the short date format.</td>
</tr>
<tr>
<td><strong>Medium Date</strong></td>
<td>Outputs the date using month names abbreviated to three characters.</td>
</tr>
<tr>
<td><strong>Long Date</strong></td>
<td>Outputs the date in the long date format.</td>
</tr>
<tr>
<td><strong>Short Time</strong></td>
<td>Outputs the time in the short time format.</td>
</tr>
<tr>
<td><strong>Medium Time</strong></td>
<td>Outputs the time in a 12-hour format (hh:mm AM</td>
</tr>
<tr>
<td><strong>Long Time</strong></td>
<td>Outputs the time in the long time format.</td>
</tr>
</tbody>
</table>

### User-defined date and time formats

User-defined formats can be composed of the following format codes.

**Important**: The format codes are case-sensitive.

<table>
<thead>
<tr>
<th>Sign</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>c</td>
<td>Returns the complete date in short date format and the complete time in hh:mm:ss format</td>
</tr>
<tr>
<td>d</td>
<td>Returns the day as a number (1-31)</td>
</tr>
</tbody>
</table>
dd  Returns the day as a number with a leading zero (01-31)
ddd  Returns the weekday abbreviated to three letters (Sun-Sat)
dddd  Returns the weekday (Sunday-Saturday)
ddddd  Returns the full date in the short date format
dddddd  Returns the full date in the long date format
w  Returns the weekday as a number (1-7), 1=Sunday, 2=Monday, ... 7=Saturday

m  Returns the month as a number (1-12)
mm  Returns the month as a number with a leading zero (01-12)
mmm  Returns the month name abbreviated to three letters (Jan-Dec)
mmmm  Returns the month name (January-December)
q  Returns the quarter as a number (1-4)
yy  Returns the year as a two-digit number with a leading zero (00-99)
yyyy  Returns the year as a three- to four-digit number (100-9999)
h  Returns the hours as a number (0-23)
hh  Returns the hours as a number with a leading zero (00-23)
n  Returns the minutes as a number (0-59)
nn  Returns the minutes as a number with a leading zero (00-59)
s  Returns the seconds as a number (0-59)
ss  Returns the seconds as a number with a leading zero (00-59)

AM/PM  Use 12-hour format and display AM or PM
am/pm  Use 12-hour format and display am or pm
A/P  Use 12-hour format and display A or P
a/p  Use 12-hour format and display a or p

Examples
Some examples are shown in the following table:
### String formats of the Format function

When formatting strings, user-defined formats of the `Format` function can be composed of the following codes:

<table>
<thead>
<tr>
<th>Sign</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>@</td>
<td>Outputs a character or a space character. The output is usually right-aligned (see, however, also the ! sign).</td>
</tr>
<tr>
<td>&amp;</td>
<td>Outputs a character or nothing.</td>
</tr>
<tr>
<td>&lt;</td>
<td>Output all characters in lowercase.</td>
</tr>
<tr>
<td>&gt;</td>
<td>Output all characters in uppercase.</td>
</tr>
<tr>
<td>!</td>
<td>The exclamation point switches the output to left-aligned.</td>
</tr>
</tbody>
</table>

### FreeFile (function)

`FreeFile []`  

Returns the index of the next free file pointer. The result is an integer value between 1 and 255.

File indices are required when opening files (see the `Open` command)

**See also:** `Open`  

**Example:**

```vba
Sub Main
    A = FreeFile
    Open "TESTFILE" For Output As #A
    Write #A, "Test"
    Close #A
    Kill "TESTFILE"
End Sub
```
Function (statement)

```vbnet
Function Name [(ArgumentList)] [As Type]
  [Commands]
  Name = Expression
  [Commands]
  Name = Expression
End Function
```

Begins the definition of a user-defined function.

*Name* is the name of the function.

*ArgumentList* is a comma-separated list of parameter declarations (see below).

*Type* specifies the data type (*String, Integer, Double, Long, Variant*). Alternatively, the type can be indicated by appending a type suffix (e.g. % for *Integer*) to the function name (see the section *Data types*).

The function definition is ended with *End Function*. The *Exit Function* command can be used to exit a function prematurely.

Parameter declaration

```vbnet
[ByVal | ByRef] Variable [As Type]
```

The keywords *ByVal* or *ByRef* (default value) are used to specify whether the parameter is passed by value or by reference (see the section *Passing parameters via ByRef or ByVal*).

*Type* specifies the data type (*Integer, Long, Single, Double, String, String*n, Variant, Object* or a user-defined type). Alternatively, the type can be indicated by appending a type suffix (e.g. % for *Integer*) to the variable name (see the section *Data types*).

See also: Dim, End, Exit, Sub

Example:

```vbnet
Sub Main
  For I% = 1 to 10
    Print GetColor2(I%)
  Next I
End Sub

Function GetColor2(c%) As Long
  GetColor2 = c% * 25
  If c% > 2 Then
    GetColor2 = 255         ' 0x0000FF - Red
  End If
  If c% > 5 Then
    GetColor2 = 65280       ' 0x00FF00 - Green
  End If
  If c% > 8 Then
    GetColor2 = 16711680    ' 0xFF0000 - Blue
  End If
End Function
```
**GetObject (function)**

**GetObject(Name [,Class])**

Returns a reference to an OLE object that has already been created.

*Name* is the name of a file that includes the object. If *Name* is empty, *Class* must be indicated.

*Class* is the name under which the object is listed in the Windows Registry.

See also: [CreateObject, Set](#), section [OLE Automation](#)

---

**Gosub ... Return (statement)**

**Gosub** *Label*

```
  ...  
  Label:  
    Command(s)
  Return
```

**Gosub** jumps to a place in the script that is marked with the jump target *Label*; **Return** goes back to the calling place.

The jump target *Label* must reside inside the same subroutine or function from which the **Gosub** command is called.

Hint: **Gosub** ... **Return** is provided only for compatibility with older Basic versions. It is recommended to use the command **Sub** for subroutines instead.

See also: [Goto, Sub](#), section [Flow control](#)

**Example:**

```
Sub Main
  Print "Main program"
  Gosub Detour
  Exit Sub

Detour:
  Print "Subroutine"
Return
End Sub
```
Goto (statement)

Goto Label
.
.
Label:
Commands

Unconditional jump to the jump target Label.

The jump target Label must reside inside the same subroutine or function from which the command Goto is called.

Hint: This command is provided only for compatibility reasons. Usage of Goto commands makes program code unnecessarily complicated. It is recommended to use structured control commands (Do ... Loop, For ... Next, If ... Then ... Else, Select Case) instead.

See also: Gosub Return, Sub, section Flow control

Example:

Sub Main
    Dim x
    For x = 1 to 5
        Print x
        If x > 3 Then
            Goto Label1
        End If
    Next x

Label1:
    Print "That's enough!"
End Sub

Hex (function)

Hex(Num)

Returns a string with the hexadecimal representation of the given number.

Num can be any numeric expression; it is rounded to the next integer.

The result can be up to eight digits long.

See also: Oct

Example:
Sub Main
    Dim Msg As String, x%
    x% = 1024
    Msg = Str(x%) & " decimal is identical to "
    MsgBox Msg & Hex(x%) & " hexadecimal."
End Sub

---

**Hour (function)**

**Hour( Expression)**

Returns the hour of the day for the given time as an integer value.

*Expression* is a numeric or a string expression which represents a time.

See also: [Date], [Day], [Minute], [Month], [Now], [Second], [Time], [Weekday], [Year]

**Example:**

Sub Main
    T1 = Now ' Now = current date + time
    MsgBox T1
    MsgBox "Day: " & Day(T1)
    MsgBox "Month: " & Month(T1)
    MsgBox "Year: " & Year(T1)
    MsgBox "Hours: " & Hour(T1)
    MsgBox "Minutes: " & Minute(T1)
    MsgBox "Seconds: " & Second(T1)
End Sub

---

**If ... Then ... Else (statement)**

```
If Condition Then
    [Commands]
[ElseIf Condition Then
    [Commands]]...
[Else
    [Commands]]
End If
```

Or:

```
If Condition Then Command [Else Command]
```
Executes a group of commands if Condition is true. Optionally executes a different group of commands if Condition is false (see also the section Flow control).

See also: Select Case, section Flow control

Example:

Sub IfTest
    Dim Gender as String
    Gender = InputBox("Enter your gender (m or f)"")
    If Gender = "m" Then
        MsgBox "You are male."
    ElseIf Gender = "f" Then
        MsgBox "You are female."
    Else
        MsgBox "Please enter either m or f!"
    End If
End Sub

---

**Input (function)**

**Input**(n, [#]FileNumber)

Reads a string from a file.

n is the number of the characters (bytes) to be read.

FileNumber is the number assigned to the respective file by the Open command.

See also: Line Input, Open, Seek

Example:

Sub Main
    Open "TESTFILE" For Input As #1    ' Open file
    Do While Not EOF(1)    ' Repeat until end of file
        MyStr = Input(10, #1)    ' Read 10 characters
        MsgBox MyStr
    Loop
    Close #1    ' Close file
End Sub

---

**InputBox (function)**

**InputBox**(Prompt$, [,Title$] [,,[Default$] [,X, Y]])

Displays a dialog box in which the user can input something. The result is a string consisting of the user input.
Prompt$ is the string to be shown in the dialog box.

The following parameters are optional:

Title$ is the string to be shown in the title bar.

Default$ is the string shown in the input box by default.

X and Y are the screen coordinates of the input box in screen pixels.

See also: Dialog

Example:

Sub Main
    Title$ = "Welcome!"
    Prompt$ = "What is your name?"
    Default$ = ""
    X% = 100
    Y% = 200
    N$ = InputBox(Prompt$, Title$, Default$, X%, Y%)
    MsgBox "Hello " & N$ & "!"
End Sub

InStr (function)

InStr(Start, String, searchString)

Returns the position of the first occurrence of the string searchString within the string String.

Start is the starting position of the search; use the value 1 to search within the whole string. Start must be a positive integer number.

String is the string expression to be searched.

SearchString is the string expression to search for.

See also: Mid, StrComp

Example:
Sub Main
    B$ = "SoftMaker Basic"
    A = InStr(2, B$, "Basic")
    MsgBox A
End Sub

---

**Int (function)**

**Int**(Num)

Returns the integral part of a numerical expression.

The difference to the **Fix** function is in the handling of negative numbers: While **Int** always returns the next integer less than or equal to **Num**, the function **Fix** simply removes the part after the decimal point (see example)

**See also:** **Fix**

**Example:**

Sub Main
    Print **Int**( 1.4)   ' -> 1
    Print **Fix**( 1.4)   ' -> 1
    Print **Int**(-1.4)   ' -> -2
    Print **Fix**(-1.4)   ' -> -1
End Sub

---

**IsDate (function)**

**IsDate**(Variant)

Checks whether the passed Variant variable can be converted to a date.

**See also:** **IsEmpty, IsNull, IsNumeric, VarType**

---

**IsEmpty (function)**

**IsEmpty**(Variant)

Checks whether the passed Variant variable has been initialized.

**See also:** **IsDate, IsNull, IsNumeric, VarType**, section Special behavior of the Variant data type

**Example:**
Sub Main
    Dim x       ' Empty because no value was assigned
    MsgBox "IsEmpty(x): " & IsEmpty(x)
    x = 5       ' Is not empty anymore
    MsgBox "IsEmpty(x): " & IsEmpty(x)
    x = Empty   ' Is empty again
    MsgBox "IsEmpty(x): " & IsEmpty(x)
End Sub

IsNull (function)

IsNull(Variant)
Checks whether the passed Variant variable has the value "Null".
The special value "Null" shows that the variable does not have any value. Please note that this value is different from the numeric value 0, from empty strings, and from the special value Empty which shows that a variable has not been initialized.

See also: IsDate, IsEmpty, IsNumeric, VarType, section Special behavior of the Variant data type

IsNumeric (function)

IsNumeric(Variant)
Checks whether the passed Variant variable can be converted to a number.

See also: IsDate, IsEmpty, IsNull, VarType

Example:
Sub Test
    Dim TestVar
    TestVar = InputBox("Enter a number or text:")
    If IsNumeric(TestVar) Then
        MsgBox "Input is numeric."
    Else
        MsgBox "Input is not numeric."
    End If
End Sub
Kill (statement)

Kill FileName

Deletes the given file(s).

You can use wildcard characters such as "*" and "?" in FileName. For example, the following command deletes all files with the file extension "bak":

Kill "*.bak"

See also: RmDir

Example:

Const NumberOfFiles = 3

Sub Main
    Dim Msg                   ' Declare variables
    Call MakeFiles()          ' Create files
    Msg = "Some test files were created."
    Msg = Msg & "Click on OK to delete them again."
    MsgBox Msg
    For I = 1 To NumberOfFiles
        Kill "TEST" & I       ' Delete files
    Next I
End Sub

Sub MakeFiles()
    Dim I, FNum, FName        ' Declare variables
    For I = 1 To NumberOfFiles
        FNum = FreeFile
        FName = "TEST" & I
        Open FName For Output As FNum     ' Open file
        Print #FNum, "This is test #" & I    ' Write in file
        Print #FNum, "Here is another "; "line"; I
    Next I
    Close                     ' Close all files
End Sub

LBound (function)

LBound(Array [,Dimension])

Returns the lowest index for the given dimension of an array.

If Dimension is not indicated, the first dimension of the array is used.

See also: Dim, Option Base, ReDim, UBound

Example:
Option Base 1

Sub Main
    Dim a(10,20)
    Print "1st dimension: " & LBound(a) & " to " & UBound(a)
    Print "2nd dimension: " & LBound(a, 2) & " to " & UBound(a, 2)
End Sub

---

**LCase (function)**

LCase(String)

Converts a string to lowercase.

See also: **UCase**

Example:

Sub Main
    MsgBox LCase("Think BIG!")  ' gives "think big!"
End Sub

---

**Left (function)**

Left(String, n)

Returns a string consisting of the first *n* characters of the passed string *String*.

See also: **Len, Mid, Right**

Example:

Sub Main
    Dim LWord, Msg, RWord, SpcPos, UsrInp
    Msg = "Enter two words "
    Msg = Msg & "separated by a space character."
    UsrInp = InputBox(Msg)
    SpcPos = InStr(1, UsrInp, " ")  ' Find space character
    If SpcPos Then
        LWord = Left(UsrInp, SpcPos - 1)  ' Left word
        RWord = Right(UsrInp, Len(UsrInp) - SpcPos)  ' Right word
        Msg = "The first word is " & LWord & ","
        Msg = Msg & " the second word is " & RWord & "."
    Else
        Msg = "You did not enter two words."
    End If
    MsgBox Msg
End Sub
Len (function)

\texttt{Len(String)}

Returns the length of a string.

\textbf{See also:} \texttt{InStr}

\textbf{Example:}

\begin{verbatim}
Sub Main
  A$ = "BasicMaker"
  StrLen = Len(A$)  'Result: 10
  MsgBox StrLen
End Sub
\end{verbatim}

Let (statement)

\texttt{Let} \hspace{1em} \texttt{Variable = Expression}

Assigns a value to a variable.

The keyword \texttt{Let} was necessary only in older versions of BASIC. Nowadays it is usually omitted.

\textbf{Example:}

\begin{verbatim}
Sub Main
  Dim Msg, Pi
  \textbf{Let} Pi = 4 * Atn(1)
  Msg = "Pi = " & Str(Pi)
  MsgBox Msg
End Sub
\end{verbatim}

Line Input \# (statement)

\texttt{Line Input [#]FileNumber, Name}

Reads a line from a file and stores the result in the string or Variant variable \texttt{Name}.

\texttt{FileNumber} is the number assigned to the file by the \texttt{Open} command. The file must have been opened with the command \texttt{Open} for reading beforehand.

The command \texttt{Line Input} reads the characters from the file until a line feed (LF) or a combination of carriage return + line feed (CR+LF) is encountered.
See also: **Input, Open, Seek**

**Example:**

```vba
Sub Main
    Open "c:\autoexec.bat" For Input As #1   ' Open file
    While Not EOF(1)               ' Repeat until end of file
        Line Input #1, TextLine    ' Read lines from file
        Print TextLine            ' Output lines
    Wend    ' Close file
End Sub
```

---

**Log (function)**

\[ \text{Log}(\text{Num}) \]

Returns the natural logarithm of a number.

The parameter \text{Num} must be greater than 0.

See also: **Exp**

**Example:**

```vba
Sub Main
    For I = 1 to 3        Print \text{Log}(I)    Next I
End Sub
```

---

**Mid (function)**

\[ \text{Mid}(\text{String}, \text{Start [, Length]}) \]

Returns a substring of the passed string \text{String}. It starts with the position \text{Start} and is \text{Length} characters long. If \text{Length} is omitted, the entire rest of the string is returned.

See also: **Len, Left, Right**

**Example:**

```vba
Sub Main
    MidTest = \text{Mid}("Potato salad", 8, 4)    MsgBox MidTest    'Result: "sala"
End Sub
```
**Minute (function)**

**Minute**(Expression)

Returns the minute of the hour for the given time as an integer number.

*Expression* is a numeric or string expression which represents a time.

See also: [Date](#), [Day](#), [Hour](#), [Month](#), [Now](#), [Second](#), [Time](#), [Weekday](#), [Year](#)

**Example:**

```
Sub Main
    T1 = Now      ' Now = current date + time
    MsgBox T1
    MsgBox "Day: " & Day(T1)
    MsgBox "Month: " & Month(T1)
    MsgBox "Year: " & Year(T1)
    MsgBox "Hours: " & Hour(T1)
    MsgBox "Minutes: " & Minute(T1)
    MsgBox "Seconds: " & Second(T1)
End Sub
```

---

**MkDir (statement)**

**MkDir** Path

Creates a new folder.

The parameter *Path* may not have more than 255 characters.

See also: [ChDir](#), [ChDrive](#), [RmDir](#)

**Example:**

```
Sub Main
    ChDir "c:"
    MkDir "Test"
    MsgBox "The folder c:\Test was created."
End Sub
```
Month (function)

Month(Expression)

Returns the month of the year for the given date as an integer number.

Expression is a numeric or string expression which represents a date.

See also: Date, Day, Hour, Minute, Now, Second, Time, Weekday, Year

Example:

Sub Main
    T1 = Now     ' Now = current date + time
    MsgBox T1
    MsgBox "Day: " & Day(T1)
    MsgBox "Month: " & Month(T1)
    MsgBox "Year: " & Year(T1)
    MsgBox "Hours: " & Hour(T1)
    MsgBox "Minutes: " & Minute(T1)
    MsgBox "Seconds: " & Second(T1)
End Sub

MsgBox (function)

MsgBox(Text [, Type] [, Title])

Displays a message box.

The return value shows which button was pressed to dismiss the message box (see below).

Text is the string to be shown in the message box.

The optional parameter Type indicates which buttons and which icon are displayed in the message box (see below). The default setting is to show only the OK button without any icons.

The optional parameter Title indicates which text will be displayed in the title bar (default value: empty).

See also: Dialog, InputBox

Values for the parameter "Type":

<table>
<thead>
<tr>
<th>Symbolic constant</th>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB_OK</td>
<td>0</td>
<td>Display only the OK button</td>
</tr>
</tbody>
</table>
Commands and functions from A to Z

<table>
<thead>
<tr>
<th>Symbolic constant</th>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>MB_OKCANCEL</td>
<td>1</td>
<td>Display the buttons <strong>OK</strong> and <strong>Cancel</strong></td>
</tr>
<tr>
<td>MB_ABORTRETRYIGNORE</td>
<td>2</td>
<td>Display the buttons <strong>Cancel</strong>, <strong>Retry</strong>, <strong>Ignore</strong></td>
</tr>
<tr>
<td>MB_YESNOCANCEL</td>
<td>3</td>
<td>Display the buttons <strong>Yes</strong>, <strong>No</strong>, <strong>Cancel</strong></td>
</tr>
<tr>
<td>MB_YESNO</td>
<td>4</td>
<td>Display the buttons <strong>Yes</strong> and <strong>No</strong></td>
</tr>
<tr>
<td>MB_RETRYSINGLECANCEL</td>
<td>5</td>
<td>Display the buttons <strong>Retry</strong> and <strong>Cancel</strong></td>
</tr>
<tr>
<td>MB_ICONSTOP</td>
<td>16</td>
<td>Display the icon for critical messages</td>
</tr>
<tr>
<td>MB_ICONQUESTION</td>
<td>32</td>
<td>Display the icon for questions</td>
</tr>
<tr>
<td>MB_ICONEXCLAMATION</td>
<td>48</td>
<td>Display the icon for warning messages</td>
</tr>
<tr>
<td>MB_ICONINFORMATION</td>
<td>64</td>
<td>Display the icon for informational messages</td>
</tr>
<tr>
<td>MB_DEFBUTTON1</td>
<td>0</td>
<td>Make the first button the default button</td>
</tr>
<tr>
<td>MB_DEFBUTTON2</td>
<td>256</td>
<td>Make the second button the default button</td>
</tr>
<tr>
<td>MB_DEFBUTTON3</td>
<td>512</td>
<td>Make the third button the default button</td>
</tr>
<tr>
<td>MB_APPLMODAL</td>
<td>0</td>
<td>The message box is application-modal. The current task does not accept input until the user closes the message box.</td>
</tr>
<tr>
<td>MB_SYSTEMMODAL</td>
<td>4096</td>
<td>The message box is system-modal. The whole system does not accept any input until the user closes the message box (use only for critical errors!).</td>
</tr>
</tbody>
</table>

From each of the four shown groups a value can be chosen. Combine the individual constants by adding their values.

The return values of the MsgBox function

The return value of this function indicates which button was pressed to dismiss the message box:

<table>
<thead>
<tr>
<th>Symbolic constant</th>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDOK</td>
<td>1</td>
<td>Button <strong>OK</strong></td>
</tr>
<tr>
<td>IDCANCEL</td>
<td>2</td>
<td>Button <strong>Cancel</strong></td>
</tr>
<tr>
<td>IDABORT</td>
<td>3</td>
<td>Button <strong>Abort</strong></td>
</tr>
<tr>
<td>IDRETRY</td>
<td>4</td>
<td>Button <strong>Retry</strong></td>
</tr>
<tr>
<td>IDIGNORE</td>
<td>5</td>
<td>Button <strong>Ignore</strong></td>
</tr>
<tr>
<td>IDYES</td>
<td>6</td>
<td>Button <strong>Yes</strong></td>
</tr>
<tr>
<td>IDNO</td>
<td>7</td>
<td>Button <strong>No</strong></td>
</tr>
</tbody>
</table>
Example:

This example uses **MsgBox** to display a confirmation dialog.

```vbnet
Sub Main
    Dim DgDef, Msg, Response, Title
    Title = "MsgBox Example"
    Msg = "Do you want to continue?"
    DgDef = MB_YESNOCANCEL + MB_ICONQUESTION + MB_DEFBUTTON3

    Response = MsgBox(Msg, DgDef, Title)
    If Response = IDYES Then
        MsgBox "You chose Yes."
    ElseIf Response = IDCANCEL Then
        MsgBox "You chose Cancel."
    Else
        MsgBox "You chose No."
    End If
End Sub
```

---

**Name (statement)**

**Name** `OldName As NewName`

Renames the file `OldName` to `NewName`.

Each of the two parameters must identify an individual file. Wildcard characters such as `"*"` or `"?"` are not allowed.

See also: **ChDir**, **Kill**

**Example:**

```vbnet
Sub Main
    Name "testfile" As "newtest"
End Sub
```

---

**Now (function)**

**Now** `[]`

Returns the current system time (date and time).

The **Now** function returns a result of the type Variant consisting of date and time. The positions to the left of the decimal point define the date, the positions to its right the time.

See also: **Date**, **Day**, **Hour**, **Minute**, **Month**, **Second**, **Time**, **Weekday**, **Year**
Example:

```vbscript
Sub Main
    T1 = Now    ' Now = current date + time
    MsgBox T1
    MsgBox "Day: " & Day(T1)
    MsgBox "Month: " & Month(T1)
    MsgBox "Year: " & Year(T1)
    MsgBox "Hours: " & Hour(T1)
    MsgBox "Minutes: " & Minute(T1)
    MsgBox "Seconds: " & Second(T1)
End Sub
```

---

**Oct (function)**

**Oct(Num)**

Returns a string with the octal representation of the given number.

*Num* can be any numeric expression; it is rounded to the next integer.

**See also:** [Hex](#)

**Example:**

```vbscript
Sub Main
    Dim Msg, Num
    Num = InputBox("Enter a number.")
    Msg = "The decimal value " & Num & " is identical to "
    Msg = Msg & "octal" & Oct(Num)
    MsgBox Msg
End Sub
```

---

**On Error (statement)**

**On Error Goto Label**

*Or:*

**On Error Resume Next**

*Or:*

**On Error Goto 0**

Enables an error handling routine for the handling of runtime errors:
- **On Error Goto Label** indicates that in case of a runtime error execution should continue at the given jump target **Label**.

- **On Error Resume Next** indicates that runtime errors are simply ignored. **Attention:** In this case, a runtime error can cause unpredictable results.

- **On Error Goto 0** disables error trapping – runtime errors cause the program to terminate with an error message.

An **On Error** command is only valid inside the subroutine or function in which it resides.

If the script jumps to a label using the **On Error Goto** command, you can resume execution at the calling place using the **Resume** command. The script execution will then continue with the next line.

**See also:** **Resume**

**Example:**

In this example, an error is intentionally caused in order to execute the error handling routine at the label "Error". Then the user is asked whether the script's execution should be continued or not. If the answer is "Yes", execution will continue using the **Resume Next** command with the next line after the runtime error. If the answer is "No", execution ends with the **Stop** command.

```vba
Sub Main
    On Error Goto MyErrorHandler
    Print 1/0 'Causes a 'division by zero' error
    MsgBox "End"
    Exit Sub
MyErrorHandler: 'Error handling routine
    Dim DgDef, Msg, Response, Title
    Title = "Error"
    Msg = "A runtime error has been raised. Do you want to resume execution?"
    DgDef = MB_YESNO + MB_ICONEXCLAMATION
    Response = MsgBox(Msg, DgDef, Title)
    If Response = IDYES Then
        Resume Next
    Else
        Stop
    End If
End Sub
```

For testing reasons, runtime errors can be artificially raised using the **Err.Raise** command.

**Syntax:** **Err.Raise Number**

**Number** is the number of a runtime error. There are the following runtime errors:

3: "RETURN without GOSUB"
5: "Invalid procedure call"
6: "Overflow"
7: "Out of memory"
9: "Subscript out of range"
10: "Array is fixed or temporarily locked"
11: "Division by zero"
13: "Type mismatch"
14: "Out of string space"
16: "Expression too complex"
17: "Can't perform requested operation"
18: "User interrupt occurred"
20: "RESUME without error"
28: "Out of stack space"
35: "Sub, Function, or Property not defined"
47: "Too many DLL application clients"
48: "Error in loading DLL"
49: "Bad DLL calling convention"
51: "Internal error"
52: "Bad file name or number"
53: "File not found"
54: "Bad file mode"
55: "File already open"
57: "Device I/O error"
58: "File already exists"
59: "Bad record length"
60: "Disk full"
62: "Input past end of file"
63: "Bad record number"
67: "Too many files"
68: "Device unavailable"
70: "Permission denied"
71: "Disk not ready"
74: "Can't rename with different drive"
75: "Path/File access error"
76: "Path not found"
91: "Object variable or WITH block variable not set"
92: "For loop not initialized"
93: "Invalid pattern string"
94: "Invalid use of NULL"

**OLE Automation errors:**

424: "Object required"
429: "OLE Automation server cannot create object"
430: "Class doesn't support OLE Automation"
432: "File name or class name not found during OLE Automation operation"
438: "Object doesn't support this property or method"
440: "OLE Automation error"
443: "OLE Automation object does not have a default value"
445: "Object doesn't support this action"
446: "Object doesn't support named arguments"
447: "Object doesn't support current local setting"
448: "Named argument not found"
449: "Argument not optional"
450: "Wrong number of arguments"
451: "Object not a collection"

**Miscellaneous errors**

444: "Method not applicable in this context"
452: "Invalid ordinal"
453: "Specified DLL function not found"
Open (statement)

Open FileName [For Mode] [Access AccessMode] As [#] FileNumber

Opens a file for input/output operations.

FileName is the name of the file.

The optional parameter Mode can take one of the following values:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>Sequential input. The file must already exist. AccessMode, if given, must be set to Read.</td>
</tr>
<tr>
<td>Output</td>
<td>Sequential output. The file is automatically created for output. If a file with the given name already exists, the file will be overwritten. AccessMode, if given, must be set to Write.</td>
</tr>
<tr>
<td>Append</td>
<td>Sequential output. Identical to Output, however the file pointer will be set to the end of the file, so that all following output commands append data to the existing file.</td>
</tr>
</tbody>
</table>

The optional parameter AccessMode restricts the type of access to the file:

<table>
<thead>
<tr>
<th>AccessMode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read</td>
<td>Opens the file only for reading.</td>
</tr>
<tr>
<td>Write</td>
<td>Opens the file only for writing.</td>
</tr>
<tr>
<td>Read Write</td>
<td>Opens the file for reading and writing.</td>
</tr>
</tbody>
</table>

If the file does not exist, it will be automatically created, if either Append or Output mode was chosen; otherwise the Open command fails.

If the file is already opened by another process or the desired access mode is not possible, the Open command fails.

FileNumber is an integer value between 1 and 255 which identifies the file in the following access functions. The index of the next free file pointer can be returned using the FreeFile function.

See also: Close, FreeFile

Example:

Sub Main

    Open "TESTFILE" For Output As #1  ' Create file
    userData1$ = InputBox("Enter one text line.")
    userData2$ = InputBox("Enter one more text line.")
Write #1, userData1, userData2     ' Write file
Close #1

Open "TESTFILE" for Input As #2    ' Open file
Print "File contents:
Do While Not EOF(2)
    Line Input #2, FileData    ' Read line
    Print FileData
Loop
Close #2                           ' Close file
Kill "TESTFILE"                    ' Delete file
End Sub

---

**Option Base (statement)**

**Option Base** `{0|1}`

Defines the default lower bound for array indices. The allowed values are 0 and 1.

If **Option Base** is not specified, the lower bound of all arrays that do not explicitly specify their lower bound is 0.

This command must reside outside a procedure and before all array definitions.

See also: [Dim, LBound](#), section Arrays

Example:

**Option Base 1**

Sub Main
    Dim A(20)
    Print "The lower bound of the array is: " & LBound(A) & "."
    Print "The upper bound of the array is: " & UBound(A) & "."
End Sub

---

**Option Explicit (statement)**

**Option Explicit**

Causes the usage of undefined variables to be flagged as a syntax error.

By default, variables which are used without having been declared before with **Dim** or **Static**, are silently created (as Variant variables). This is convenient, but makes typos in variable names go unnoticed.

When using the **Option Explicit** command, the use of unknown variable names causes an error message.

Example:

**Option Explicit**
Sub Main
  Print y    'Error because y was not declared.
End Sub

---

**Print (statement)**

Print Expression [, ...]

Outputs data in BasicMaker's output window.

An additional output window pane will appear in BasicMaker automatically for that purpose (unless already present).

See also: **MsgBox, Print #**

Example:

Sub PrintExample
  Dim Pi
  Pi = 4 * Atn(1)    ' Calculate Pi
  Print Pi
End Sub

---

**Print # (statement)**

Print #FileNumber, [Expression]

Writes data to a file.

*FileNumber* is a number assigned to a file by **Open** command.

*Expression* consists of the characters to be written.

If *Expression* is omitted, an empty line will be written. Please note that in this case you still need to add a trailing comma to the command (e.g., Print #1,).

**Formatting the output**

The expression to be written can optionally be formatted in the following way:

[ [ [ Spc(n) | Tab(n) ] ] [Expression] [ [ ; | , ] ]]

**Spc(n)** Writes *n* space characters in front of the *Expression*

**Tab(n)** Writes *Expression* in column *n*

; Causes the next character to directly follow
Causes the next character to be written at the beginning of the next print zone. Print zones start in every 14th column position.

If neither ; nor , is specified, the next character will be written in a new line.

Date/time values are output in the short date/time format.

The value Empty (Variant with VarType 0) creates an empty output.

The value Null (Variant with VarType 1) creates the output #NULL#.

See also: Open, Print, Seek, Write #

Example:

This example writes data to a test file and then reads it back in.

Sub Main

Dim FileData, Msg, NL
NL = Chr(10)                     ' Chr(10)=New line
Open "TESTFILE" For Output As #1 ' Create file
Print #1, "This is a test for the Print # command"
Print #1, "Line 2"
Print #1, "Line 3"
Close                          ' Close all files
Open "TESTFILE" for Input As #2 ' Open file
Do While Not EOF(2)
    Line Input #2, FileData
    Msg = Msg & FileData & NL
    MsgBox Msg
Loop
Close                          ' Close all files
Kill "TESTFILE"                ' Delete file
End Sub

ReDim (statement)

ReDim [Preserve] VarName(Subscripts) [As Type] [, ...]

Use the ReDim command to set or change the length of a dynamic array.

The array contents will be erased at this point, unless you prepend Preserve to the variable name and change only the length of the last dimension.

VarName is the name of the array variable.

Subscripts defines the number and size of the dimensions (see section Arrays).

Type is the data type (see section Data types).
**Dynamic arrays**

To create a *dynamic* array, it must first be declared with the commands `Global` or `Dim`, but with empty parentheses instead of the usual specification of the number and size of the dimensions.

Example: `Dim A()`

The number and size of the dimensions can be later specified in the *first* call of the `ReDim` command.

Example: `ReDim A(42, 42)`

In further calls of the `ReDim` command, the *size* of the dimensions can be changed at will; the *number* of the dimensions and the *type* of the array however cannot be changed after the initial setting.

*Hint:* When executing the `ReDim` command, the existing content of the array is deleted. If you use the keyword `Preserve` together with this command, you can only change the last dimension. If an array has, for example, two dimensions, only the second dimension can be enlarged or shrunk. But the advantage is that: the existing content of the array is preserved.

Example:

```vba
Dim B()
ReDim B(10, 10)
...
ReDim Preserve B(10, 20)
```

See also: `Dim`, `Option Base`, `Static`, section Arrays

---

**Rem (statement)**

`Rem` *Comment*

*Or:*

`' Comment`

Marks comments. Comments are ignored during execution of the script.

See also: section *Syntax fundamentals*

Example:

```vba
Rem This is a comment
' This is also a comment
```
Resume (statement)

Resume  [0]

Or:

Resume Next

Or:

Resume Label

Ends an error handling routine called by the On Error command and continues the script execution.

See also: On Error

Example:

Sub Main
    Dim LWord, Msg, RWord, SpcPos, UsrInp
    Msg = "Enter two words 
    On Error Goto MyErrorHandler
    Print 1/0   'Causes a 'division by zero' error
    MsgBox "End"
    Exit Sub
MyErrorHandler:  'Error handling routine
    Dim DgDef, Msg, Response, Title
    Title = "Error"
    Msg = "A runtime error has been raised. Do you want to resume execution?"
    DgDef = MB_YESNO + MB_ICONEXCLAMATION
    Response = MsgBox(Msg, DgDef, Title)
    If Response = IDYES Then
        Resume Next
    Else
        Stop
    End If
End Sub

Right (function)

Right(String, n)

Returns a string consisting of the last n characters of the passed string String.

See also: Len, Left, Mid

Example:

Sub Main
    Dim LWord, Msg, RWord, SpcPos, UsrInp
    Msg = "Enter two words "  

Commands and functions from A to Z

Msg = Msg & "separated by a space character."
UsrInp = InputBox(Msg)
SpcPos = InStr(1, UsrInp, " ")   ' Find space character
If SpcPos Then
   LWord = Left(UsrInp, SpcPos - 1)   ' Left word
   RWord = Right(UsrInp, Len(UsrInp) - SpcPos)  ' Right word
   Msg = "The first word is " & LWord & " and the second word is " & RWord & "."
Else
   Msg = "You did not enter two words."
End If
MsgBox Msg
End Sub

RmDir (statement)

RmDir Path

Removes the given folder.
The parameter must contain the folder path in the notation DriveLetter:Folder.

See also: ChDir, ChDrive, CurDir, Kill

Example:

Sub Main
   Dim dirName As String
dirName = "t1"
MkDir dirName
MkDir "t2"
MsgBox "Folders t1 and t2 were created. Click on OK to remove them."
   RmDir "t1"
   RmDir "t2"
End Sub

Rnd (function)

Rnd []

Generates a random number between 0 and 1.
Second (function)

Second( Expression )

Returns the second of the hour for the given time as an integer number.

Expression is a numeric or string expression which represents a time.

See also: Date, Day, Hour, Minute, Month, Now, Time, Weekday, Year

Example:

Sub Main
    T1 = Now        ' Now = current date + time
    MsgBox T1
    MsgBox "Day: " & Day(T1)
    MsgBox "Month: " & Month(T1)
    MsgBox "Year: " & Year(T1)
    MsgBox "Hours: " & Hour(T1)
    MsgBox "Minutes: " & Minute(T1)
    MsgBox "Seconds: " & Second(T1)
End Sub

Seek (statement)

Seek [ # ] FileName, Position

Sets the file pointer to a new position in a file. This command works only on open files.

FileName is the number assigned to the file by Open command.

Position is the position within the file from which the next read or write operation should start (as offset in bytes from the beginning of the file).

See also: Open

Example:

Sub Main
    Open "TESTFILE" For Input As #1        ' Open file
    For i = 0 To 24 Step 3
        Seek #1, i                        ' Set file pointer
        MyChar = Input(1, #1)             ' Read character
        Print MyChar                      ' Output character
    Next i
    Close #1                           ' Close file
Select Case (statement)

Select Case Expression

[Case Value1
    [Commands]]

[Case Value2
    [Commands]]
    .
    .
    .

[Case Else
    [Command]]
End Select

Executes one of several command blocks, depending on the value of the given expression (see also the section Flow control).

A Select Case structure must be closed with the End Select keyword.

See also: If Then Else, section Flow control

Example:

Sub Main
    Number = InputBox("Enter an integer number between 1 and 3:")
    Select Case Val(Number)
        Case 1
            MsgBox "You entered the number One."
        Case 2
            MsgBox "You entered the number Two."
        Case 3
            MsgBox "You entered the number Three."
        Case Else
            MsgBox "Only the integer values between 1 and 3 are allowed!"
    End Select
End Sub
SendKeys (statement)

SendKeys (Keys, [Wait])

Simulates keystrokes.

*Keys* is a string containing the keys to be pressed.

If the optional parameter *Wait* is True, control returns to the script only when the receiving application has completed processing of the keystroke.

To pass "regular" keys, just type them – for example, "Test". Special keys such as the Enter or Alt key can be added as follows:

- The keys + ^ ~ ( ) [ ] { and } have a special meaning. If you want to use them verbatim, they must be enclosed by curly braces – for example: "{%}" or {[].
- Special keys such as the Enter key must be also enclosed by curly braces – for example: {Enter}. A list of the extra keys you can find in the next section Special keys supported by the SendKeys command.
- Key combinations containing the Shift, Alt and Ctrl keys can be added using one of the following prefixes (+, ^ or %):
  - Shift+Enter:  "+{Enter}\n  - Alt+F4:  "%{F4}"  
  - Ctrl+C:  "^c" (not ^C!)

Pay attention to case: For example, "^c" represents the key combination Ctrl+C, but "^C" represents Ctrl+Shift+C.

- If quotation marks need to be passed, they must be doubled – for example, "Arthur ""Two Sheds"" Jackson"
- A sequence of keys can be added by following the keystrokes with the number of repetitions, all enclosed by curly braces: "{a 10}" repeats the key a ten times, {Enter 2} repeats the Enter key twice.
- The Enter key can be also expressed with the code ~. The code "ab~cd", for example, is identical to "ab{Enter}cd"

Example:

```vbscript
Sub Main
    X = Shell("Calc.exe", 1)       ' Run the Calculator application
    For i = 1 To 5
        SendKeys i & "{+}", True   ' Send keystrokes
    Next i
    MsgBox Msg
    AppActivate "Calculator"       ' Set the focus to the calculator
    SendKeys "%{F4}", True       ' Send Alt+F4 to close the application
End Sub
```
### Special keys supported by the SendKeys command

The following special keys can be used with the `Sendkeys` command:

<table>
<thead>
<tr>
<th>Special key</th>
<th>String to pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td><code>{Escape}</code> or <code>{Esc}</code></td>
</tr>
<tr>
<td>Enter</td>
<td><code>{Enter}</code></td>
</tr>
<tr>
<td>Shift key</td>
<td>Prepend the sign + (for example +{F9} for Shift+F9)</td>
</tr>
<tr>
<td>Alt key</td>
<td>Prepend the sign % (for example %{F9} for Alt+F9)</td>
</tr>
<tr>
<td>Ctrl key</td>
<td>Prepend the sign ^ (for example ^{F9} for Ctrl+F9)</td>
</tr>
<tr>
<td>Tab</td>
<td><code>{Tab}</code></td>
</tr>
<tr>
<td>Cursor Left</td>
<td><code>{Left}</code></td>
</tr>
<tr>
<td>Cursor Right</td>
<td><code>{Right}</code></td>
</tr>
<tr>
<td>Cursor Down</td>
<td><code>{Down}</code></td>
</tr>
<tr>
<td>Cursor Up</td>
<td><code>{Up}</code></td>
</tr>
<tr>
<td>Home</td>
<td><code>{Home}</code></td>
</tr>
<tr>
<td>End</td>
<td><code>{End}</code></td>
</tr>
<tr>
<td>Page Down</td>
<td><code>{PageDn}</code></td>
</tr>
<tr>
<td>Page Up</td>
<td><code>{PageUp}</code></td>
</tr>
<tr>
<td>Backspace</td>
<td><code>{Backspace}</code> or <code>{BS}</code></td>
</tr>
<tr>
<td>Delete</td>
<td><code>{Delete}</code> or <code>{Del}</code></td>
</tr>
<tr>
<td>Insert</td>
<td><code>{Insert}</code></td>
</tr>
<tr>
<td>Print Screen</td>
<td><code>{PrtSc}</code></td>
</tr>
<tr>
<td>Ctrl-Break</td>
<td><code>{Break}</code></td>
</tr>
<tr>
<td>Caps Lock key</td>
<td><code>{CapsLock}</code></td>
</tr>
<tr>
<td>Num Lock key</td>
<td><code>{NumLock}</code></td>
</tr>
<tr>
<td>Numeric keypad 0</td>
<td><code>{NumPad0}</code></td>
</tr>
</tbody>
</table>
Numerical keypad 9  {NumPad9}
Numerical keypad /  {NumPad/}
Numerical keypad *  {NumPad*}
Numerical keypad -  {NumPad-}
Numerical keypad +  {NumPad+}
Numerical keypad .  {NumPad.}
F1                  {F1}

Set (statement)

Set Object = [New] ObjectExpression

Or:

Set Object = Nothing

The first notation connects an object variable to an OLE object; the second severs the link.

See also: Dim, Static, section OLE Automation

Sgn (function)

Sgn (Num)

Returns the sign of a number.

The possible return values are:

- -1, if the number is < 0
- 0, if the number = 0
### Shell (function)

**Shell**(AppName [, Mode])

Starts a program.

The return value is a task ID which identifies the launched program. Values below 32 indicate that launching the program failed.

AppName is the name of the executable file. The name must have one of the following file extensions: .PIF, .COM, .BAT or .EXE.

The optional parameter Mode indicates in which window state the new program should be opened:

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Normal with focus (Default value)</td>
</tr>
<tr>
<td>2</td>
<td>Minimized with focus</td>
</tr>
<tr>
<td>3</td>
<td>Maximized with focus</td>
</tr>
<tr>
<td>4</td>
<td>Normal without focus</td>
</tr>
<tr>
<td>6</td>
<td>Minimized without focus</td>
</tr>
</tbody>
</table>

See also: AppActivate, AppDataMaker, AppPlanMaker, AppTextMaker, CreateObject, GetObject

**Example:**

```vba
Sub Main
    X = Shell("Calc.exe", 1)        ' Run the Calculator application
    If X < 32 Then
        MsgBox "The Calculator could not be started"
        Stop
    End If
    For I = 1 To 5
        SendKeys I & "+", True        ' Send keystrokes
    Next I
    Msg = "Calculator will be closed now."
    MsgBox Msg
    AppActivate "Calculator"        ' Set the focus to the calculator
    SendKeys "%{F4}", True        ' Send Alt+F4 to close the application
End Sub
```
**Sin (function)**

\[ \text{Sin}(\text{Num}) \]

Returns the sine of an angle.

The angle must be expressed in radians.

**See also:** [Atn], [Cos], [Tan]

**Example:**

Sub Main
    pi = 4 * Atn(1)
    rad = 90 * (pi/180)
    x = Sin(rad)
    Print x
End Sub

---

**Space (function)**

\[ \text{Space}(n) \]

Creates a string consisting of \( n \) space characters.

\( n \) accepts values between 0 and 32767.

**See also:** [String]

**Example:**

Sub Main
    MsgBox "Mind the..." & Space(20) & "...gap!"
End Sub

---

**Sqr (function)**

\[ \text{Sqr}(\text{Num}) \]

Returns the square root of a number.

\( \text{Num} \) may not have a negative value.

Sub Root
    Dim Title, Msg, Number
    Title = "Calculation of the square root"
Prompt = "Enter a positive number:"
Number = InputBox(Prompt, Title)
If Number < 0 Then
    Msg = "The root of the negative numbers is not defined."
Else
    Msg = "The root of " & Number & " is "
    Msg = Msg & Sqr(Number) & "."
End If
MsgBox Msg
End Sub

Static (statement)

**Static Variable**

Allocates memory for a variable and defines its type.

Unlike variables created with the Dim command, Static variables remember their value during the whole program runtime, even if they were declared inside a function.

See also: [Dim](#), [Function](#), [Sub](#)

Example:

' This example shows the usage of static variables.
' The value of the variable i in the procedure Joe is preserved.

Sub Main
    For i = 1 to 2
        Joe i
    Next i
End Sub

Sub Joe(j As Integer)
    Static i
    Print i
    i = i + 5
    Print i
End Sub

Stop (statement)

**Stop**

Stops execution of the script immediately.

See also: [End](#)

Example:

Sub Main
Dim x, y, z
For x = 1 to 3
    For y = 1 to 3
        For z = 1 to 3
            Print z, y, x
        Next z
    Next y
Next x
Stop
End Sub

---

**Str (function)**

Str(Num)

Converts a numeric expression to the String data type.

If a positive number is passed, the resulting string starts with a space character. For negative numbers, the minus sign appears in this position.

**See also:** CStr, Format, Val

**Example:**

Sub Main
    Dim msg
    a = -1
    MsgBox "Number = " & Str(a)
    MsgBox "Abs(Number) = " & Str(Abs(a))
End Sub

---

**StrComp (function)**

StrComp(String1, String2 [, IgnoreCase])

Compares two strings.

If the parameter IgnoreCase is True, the comparison is case-insensitive (case is ignored). If it is False or omitted, the comparison is case-sensitive.

The function returns the following result:

- 0, if the strings are equal
- -1, if String1 < String2
- 1, if String1 > String2
String (function)

String(Num, Character)

Creates a string consisting of a specific character repeated n times.

Num is the desired number of repetitions.

Character is the character to be repeated.

See also: Space

Example:
Print String(80, "-")

Sub (statement)

Sub Name [(ArgumentList)]
   [Dim Variable(s)]
   [Commands]
   [Exit Sub]
End Sub

Begins the definition of a subroutine.

Name is the name of the subroutine.

ArgumentList is a comma-separated list of parameter declarations (see below).

The subroutine definition is ended with the End Sub command.

The Exit Sub command can be used to exit a subroutine prematurely.

Parameter declaration

[ByVal | ByRef] Variable [As Type]

The keywords ByVal or ByRef (default value) are used to specify whether the parameter is passed by value or by reference (see the section Passing parameters via ByRef or ByVal).

Type specifies the data type (String, Integer, Double, Long, Variant). Alternatively, the type can be indicated using a type suffix – e.g. % for Integer (see the section Data types).

See also: Call, Dim, Function

Example:

Sub Main
Dim Var1 as String
Var1 = "Hello"
MsgBox "Test"
Test Var1
MsgBox Var1
End Sub

Sub Test(wvar1 as String)
wvar1 = "Bye!"
End Sub

---

**Tan (function)**

**Tan***(Num)***

Returns the tangent of an angle.

The angle must be expressed in radians.

**See also**: Atn, Cos, Sin

**Example:**

Sub Main
  Dim Msg, Pi
  Pi = 4 * Atn(1)  ' Calculate Pi
  x = Tan(Pi/4)
  MsgBox "Tan(Pi/4)=" & x
End Sub

---

**Time (function)**

**Time** []

Returns the current system time in the format HH:MM:SS.

The separator can be changed using the Regional Settings applet in the Windows Control Panel.

**See also**: Date, DateSerial, DateValue, Hour, Minute, Now, Second, TimeSerial, TimeValue

**Example:**

Sub Main
  T1 = Time
  MsgBox T1
  MsgBox "Hours: " & Hour(T1)
  MsgBox "Minutes: " & Minute(T1)
  MsgBox "Seconds: " & Second(T1)
TimeSerial (function)

**TimeSerial(Hour, Minute, Second)**

Returns the time serial corresponding to the specified hour, minute, and second.

See also: [DateSerial](#), [DateValue](#), [Hour](#), [Minute](#), [Now](#), [Second](#), [Time](#), [TimeValue](#)

**Example:**

```vbs
Sub Main
    Print TimeSerial(09, 30, 59)
End Sub
```

TimeValue (function)

**TimeValue(TimeString)**

Returns a double precision serial number corresponding to the specified time string. *TimeString* can be any string that represents a time.

See also: [DateSerial](#), [DateValue](#), [Hour](#), [Minute](#), [Now](#), [Second](#), [Time](#), [TimeSerial](#)

**Example:**

```vbs
Sub Main
    Print TimeValue("09:30:59")
End Sub
```

Trim, LTrim, RTrim (function)

Removes the leading or trailing space characters from a string.

- **LTrim(String)** removes the leading spaces.
- **RTrim(String)** removes the trailing spaces.
- **Trim(String)** removes both leading and trailing spaces.

**Example:**

```vbs
Sub Main
```
MyString = "   <-Trim->   

TrimString = LTrim(MyString)         ' "<-Trim->   
MsgBox "|" & TrimString & "|"   

TrimString = RTrim(MyString)         ' "   <-Trim->". 
MsgBox "|" & TrimString & "|"   

TrimString = LTrim(RTrim(MyString))  ' "<-Trim->". 
MsgBox "|" & TrimString & "|"   

TrimString = Trim(MyString)          ' "<-Trim->". 
MsgBox "|" & TrimString & "|"  

End Sub

---

**Type (statement)**

```
Type TypeName
   Element As Type
   Element As Type
   Element As Type
   .
   .
End Type
```

Declares a user-defined type.

*TypeName* is the name of the new type.

*Element* is the name of an element of this type.

*Type* is the data type of this element (*Integer, Long, Single, Double, String, String*n, Variant* or a user-defined type).

After you have declared a user-defined type, you can declare variables of this new type using the commands **Dim x As TypeName** and **Static x As TypeName**.

To access an element, use a dot notation like this: *Variable.Element*.

The **Type** command may not be used inside **Sub** or **Function** commands.

**See also:**  **Dim, Static, With**, section **Data types**

**Example:**

```
Type type1
   a As Integer
   d As Double
   s As String
End Type

Type type2
   a As String
   o As type1
End Type
```
Type  type3
  b As Integer
  c As type2
End Type

Dim var2a As type2
Dim var2b As type2
Dim var1a As type1
Dim var3a as type3

Sub Test
  a = 5
  var1a.a = 7472
  var1a.d = 23.1415
  var1a.s = "TEST"
  var2a.a = "43 – forty-three"
  var2a.o.s = "Hi"
  var3a.c.o.s = "COS"
  var2b.a = "943 – nine hundred forty-three"
  var2b.o.s = "Yogi"
  MsgBox var1a.a
  MsgBox var1a.d
  MsgBox var1a.s
  MsgBox var2a.a
  MsgBox var2a.o.s
  MsgBox var2b.a
  MsgBox var2b.o.s
  MsgBox var3a.c.o.s
  MsgBox a
End Sub

UBound (function)

UBound(ArrayName[, Dimension])

Returns the upper bound (= highest possible index) for the given dimension of an array.

If Dimension is omitted, the first dimension of the array is used.

See also: Dim, LBound, ReDim

Example:

Option Base 1

Sub Main
  Dim a(10, 20 To 40)
  Print "1st dimension: " & LBound(a) & " to " & UBound(a)
  Print "2nd dimension: " & LBound(a, 2) & " to " & UBound(a, 2)
End Sub
**UCase (function)**

UCase(String)

Converts a string to uppercase.

See also: LCase

Example:

```vbnet
Sub Main
    MsgBox UCase("Think BIG!") ’ gives "THINK BIG!"
End Sub
```

**Val (function)**

Val(String)

Converts a string to a number. The string content is analyzed up to the first non-numeric character. Spaces, tabs, and line feeds are ignored. If the string does not start with a number, the result is 0.

Val("2") gives 2
Val("2 hours") gives 2
Val("2 hours 30 minutes") gives 2
Val("xyz 2") gives 0

See also: Str

Example:

```vbnet
Sub main
    Dim Msg
    Dim YourVal As Double
    YourVal = Val(InputBox$("Enter a number."))
    MsgBox "You entered the number " & YourVal
    MsgBox Msg
End Sub
```
VarType (function)

VarType (VarName)

Returns the data type of a Variant variable.

The possible return values are:

<table>
<thead>
<tr>
<th>Type</th>
<th>Return value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty</td>
<td>0</td>
</tr>
<tr>
<td>Null</td>
<td>1</td>
</tr>
<tr>
<td>Integer</td>
<td>2</td>
</tr>
<tr>
<td>Long</td>
<td>3</td>
</tr>
<tr>
<td>Single</td>
<td>4</td>
</tr>
<tr>
<td>Double</td>
<td>5</td>
</tr>
<tr>
<td>Date</td>
<td>7</td>
</tr>
<tr>
<td>String</td>
<td>8</td>
</tr>
<tr>
<td>Object</td>
<td>9</td>
</tr>
<tr>
<td>Boolean</td>
<td>11</td>
</tr>
</tbody>
</table>

See also: IsDate, IsEmpty, IsNull, IsNumeric, section Special behavior of the Variant data type

Example:

If VarType(x) = 5 Then Print "Variable is of type Double"

Weekday (function)

Weekday(Expression)

Returns the weekday of the given date.

The result is an integer value between 1 and 7, where 1=Sunday, 2=Monday, ... 7=Saturday.

Expression is a numeric or string expression which represents a date.

See also: Date, Day, Hour, Minute, Month, Now, Second, Time, Year
Example:

Sub Main
    Print Weekday(Date)
End Sub

---

**While ... Wend (statement)**

```
While Condition
    [Commands]
Wend
```

Executes a group of commands repeatedly as long as the given condition is true (see also the section Flow control).

See also: **Do Loop**, section Flow control

---

**With (statement)**

```
With Object
    [Commands]
End With
```

Executes a group of commands for the given object.

The **With** command allows accessing the elements of an object without having to repeat the object name over and over again.

Note: **With** commands can be nested.

See also: **While Wend, Do Loop**, section Hints for simplifying notations

Example:

```
Type type1
    a As Integer
    d As Double
    s As String
End Type

Type type2
    a As String
    o As type1
End Type

Dim var1a As type1
Dim var2a As type2

Sub Main
    With var1a
```

```
Write # (statement)

Write #FileNumber, [Expression]

Writes data to a file.

The file must have been already opened with the Open command in Output or Append mode.

FileNumber is the number assigned to the file by Open command.

Expression consists of one or more output elements.

If Expression is omitted, an empty line is output. Please note that in this case you still need to add a trailing comma to the command (e.g., Write #1,).

See also: Open, Seek, Print #

Example:

Sub Main
    Open "TESTFILE" For Output As #1 ' Create file
    userData1$ = InputBox("Enter one text line.")
    userData2$ = InputBox("Enter one more text line.")
    Write #1, userData1, userData2 ' Write line
    Close #1

    Open "TESTFILE" For Input As #2 ' Open file
    Print "File contents:"
    Do While Not EOF(2)
        Line Input #2, FileData
        Print FileData
    Loop
    Close #2 ' Close file

    Kill "TESTFILE" ' Delete file
End Sub
Year (function)

*Year (Expression)*

Returns the year for the given date.

*Expression* is a numeric or string expression which represents a date.

The result is an integer value between 100 and 9999.

**See also:** [Date](#), [Day](#), [Hour](#), [Minute](#), [Month](#), [Now](#), [Second](#), [Time](#), [Weekday](#)

**Example:**

```vba
Sub Main
    T1 = Now  ' Now = current date + time
    MsgBox T1
    MsgBox "Day: " & Day(T1)
    MsgBox "Month: " & Month(T1)
    MsgBox "Year: " & Year(T1)
    MsgBox "Hours: " & Hour(T1)
    MsgBox "Minutes: " & Minute(T1)
    MsgBox "Seconds: " & Second(T1)
End Sub
```
Addendum

In the addendum, the following information is covered:

- **Menu commands and corresponding ribbon commands**
  
  In this section you will find a table of each menu command, together with the corresponding command in the ribbon.

- **Color constants**
  
  This section contains a list of all pre-defined color constants.

Menu commands and corresponding ribbon commands

In this section you will find a table of each menu command, together with the corresponding command in the ribbon.

*Tip:* You can switch the user interface between *ribbon* and *classic menus with toolbars* at any time. To do this, invoke the menu command **Tools > Options** (or, in the ribbon, the command **File > Options**). In the dialog, switch to the **Appearance** tab and click on the **User Interface** button. A dialog box appears in which you can select the type of user interface you prefer.

The table contains the following columns:

- **Left column: menu command**
  
  The left column lists all menu commands in the program, sorted by the order in the main menu.

- **Right column: corresponding command in the ribbon**
  
  In the right-hand column you will find the corresponding command in the ribbon – in the following notation:

  **Tab > Section > Command**

  Example:

  The command **File > Document > Save** on the ribbon can be found as follows: **File** tab, **Document** section, **Save** icon.

  With some commands, an additional fourth entry is displayed. Here, you can find the corresponding command in the list that opens when you click on the specified icon (or the arrow to the right of it).

So here is the announced table:
<table>
<thead>
<tr>
<th><strong>Menu</strong></th>
<th><strong>Ribbon</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>File &gt; New</td>
<td>File &gt; File &gt; New</td>
</tr>
<tr>
<td>File &gt; Open</td>
<td>File &gt; File &gt; Open</td>
</tr>
<tr>
<td>File &gt; Close</td>
<td>File &gt; File &gt; Close</td>
</tr>
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<td>File &gt; Save</td>
<td>File &gt; Document &gt; Save</td>
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<td>File &gt; Document &gt; Save as</td>
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<td>File &gt; Document &gt; Save all</td>
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<td>File &gt; File management &gt; Versions</td>
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<td>File &gt; Print &gt; Page setup</td>
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<td>File &gt; Print &gt; Print</td>
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<td>Edit &gt; Undo</td>
<td>Quick Access Toolbar &gt; Undo</td>
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<tr>
<td>Edit &gt; Redo</td>
<td>Quick Access Toolbar &gt; Redo</td>
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<tr>
<td>Edit &gt; Cut</td>
<td>Home &gt; Edit &gt; Cut</td>
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<td>Edit &gt; Copy</td>
<td>Home &gt; Edit &gt; Copy</td>
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<td>Edit &gt; Paste</td>
<td>Home &gt; Edit &gt; Paste</td>
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<td>Ribbon</td>
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<td>-----------------------------</td>
<td>---------------------------------------------</td>
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<td>Home &gt; Search &gt; Replace</td>
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<td>Edit &gt; Search again</td>
<td>Home &gt; Search &gt; Search again</td>
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<td>Edit &gt; Go to</td>
<td>Home &gt; Search &gt; Go to</td>
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<td>Edit &gt; Edit dialogs</td>
<td>Home &gt; Insert &gt; Dialog</td>
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<td>Quick Access Toolbar &gt; Touch mode</td>
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<tr>
<td>View &gt; Bookmarks</td>
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<td>View &gt; View &gt; Watch</td>
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<td>Home &gt; Insert &gt; Insert symbol</td>
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<td>Insert &gt; Document</td>
<td>Home &gt; Insert &gt; Document</td>
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<td>Insert &gt; SmartText</td>
<td>Home &gt; Insert &gt; SmartText</td>
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<td>Program &gt; Start</td>
<td>Home &gt; Program &gt; Start</td>
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<td>Program &gt; Step over</td>
<td>Home &gt; Program &gt; Step</td>
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<td>Program &gt; Trace into</td>
<td>Home &gt; Program &gt; Trace</td>
</tr>
<tr>
<td>Program &gt; Reset</td>
<td>Home &gt; Program &gt; Reset</td>
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<td>Program &gt; Insert/delete breakpoint</td>
<td>Home &gt; Program &gt; Insert/Delete breakpoint</td>
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<td>Program &gt; Delete all breakpoints</td>
<td>Home &gt; Program &gt; Delete all breakpoints</td>
</tr>
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<td>File &gt; Settings &gt; Customize &gt;&gt; Customize ribbon</td>
</tr>
<tr>
<td>Tools &gt; Options</td>
<td>File &gt; Settings &gt; Options</td>
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Color constants

There are several properties in TextMaker and PlanMaker that let you retrieve or set colors. These are available in two variations: once for working with **BGR colors** ("blue-green-red") and once with **index colors** – with the latter, TextMaker's default colors are simply enumerated with consecutive numbers.

For example, `Selection.Font.Color` sets the color of the currently selected text in TextMaker to the BGR color value that you pass as an argument. The method `Selection.Font.ColorIndex`, in contrast, expects an index color.

On the next pages you will find a list of all pre-defined color constants that can be used in such commands. It is split into the following sections:

- **Color constants for BGR colors**
- **Color constants for index colors**

## Color constants for BGR colors

Some of TextMaker's and PlanMaker's properties expect a BGR color (blue/green/red) as their argument. You can either give an arbitrary value or choose one of the following constants:

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoColorAutomatic</td>
<td>= -1 ' Automatic (see below)</td>
</tr>
<tr>
<td>smoColorTransparent</td>
<td>= -1 ' Transparent (see below)</td>
</tr>
<tr>
<td>smoColorBlack</td>
<td>= &amp;h0&amp;</td>
</tr>
<tr>
<td>smoColorBlue</td>
<td>= &amp;hFF0000&amp;</td>
</tr>
<tr>
<td>smoColorBrightGreen</td>
<td>= &amp;h00FF00&amp;</td>
</tr>
<tr>
<td>smoColorRed</td>
<td>= &amp;h0000FF&amp;</td>
</tr>
<tr>
<td>smoColorYellow</td>
<td>= &amp;h00FFFF&amp;</td>
</tr>
<tr>
<td>smoColorTurquoise</td>
<td>= &amp;hFFFF00&amp;</td>
</tr>
<tr>
<td>smoColorViolet</td>
<td>= &amp;h800080&amp;</td>
</tr>
<tr>
<td>smoColorWhite</td>
<td>= &amp;hFFFFFF&amp;</td>
</tr>
<tr>
<td>smoColorIndigo</td>
<td>= &amp;h993333&amp;</td>
</tr>
<tr>
<td>smoColorOliveGreen</td>
<td>= &amp;h003333&amp;</td>
</tr>
<tr>
<td>smoColorPaleBlue</td>
<td>= &amp;hFFCC99&amp;</td>
</tr>
<tr>
<td>smoColorPlum</td>
<td>= &amp;h663399&amp;</td>
</tr>
<tr>
<td>smoColorRose</td>
<td>= &amp;hCC99FF&amp;</td>
</tr>
<tr>
<td>smoColorSeaGreen</td>
<td>= &amp;h669933&amp;</td>
</tr>
<tr>
<td>smoColorSkyBlue</td>
<td>= &amp;hFFCC00&amp;</td>
</tr>
<tr>
<td>smoColorTan</td>
<td>= &amp;h99CCCC&amp;</td>
</tr>
<tr>
<td>smoColorTeal</td>
<td>= &amp;h808000&amp;</td>
</tr>
<tr>
<td>smoColorBlueGray</td>
<td>= &amp;h996666&amp;</td>
</tr>
<tr>
<td>smoColorBrown</td>
<td>= &amp;h003399&amp;</td>
</tr>
<tr>
<td>smoColorGold</td>
<td>= &amp;h00CCFF&amp;</td>
</tr>
</tbody>
</table>
The colors smoColorAutomatic and smoColorTransparent serve specific purposes and cannot be used at will:

- smoColorAutomatic lets you set the color of the sheet grid in PlanMaker to "Automatic".
- smoColorTransparent lets you set the background color of text to "Transparent" in TextMaker and PlanMaker.

**Color constants for index colors**

Some of TextMaker's and PlanMaker's properties expect an index color as their argument. You may exclusively use one of the following values:

- smoColorIndexAutomatic = -1 ' Automatic (see below)
- smoColorIndexTransparent = -1 ' Transparent (see below)
<table>
<thead>
<tr>
<th>smoColorIndex</th>
<th>Value</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>smoColorIndexBlack</td>
<td>0</td>
<td>Black</td>
</tr>
<tr>
<td>smoColorIndexBlue</td>
<td>1</td>
<td>Blue</td>
</tr>
<tr>
<td>smoColorIndexCyan</td>
<td>2</td>
<td>Cyan</td>
</tr>
<tr>
<td>smoColorIndexGreen</td>
<td>3</td>
<td>Green</td>
</tr>
<tr>
<td>smoColorIndexMagenta</td>
<td>4</td>
<td>Magenta</td>
</tr>
<tr>
<td>smoColorIndexRed</td>
<td>5</td>
<td>Red</td>
</tr>
<tr>
<td>smoColorIndexYellow</td>
<td>6</td>
<td>Yellow</td>
</tr>
<tr>
<td>smoColorIndexWhite</td>
<td>7</td>
<td>White</td>
</tr>
<tr>
<td>smoColorIndexDarkBlue</td>
<td>8</td>
<td>Dark blue</td>
</tr>
<tr>
<td>smoColorIndexDarkCyan</td>
<td>9</td>
<td>Dark cyan</td>
</tr>
<tr>
<td>smoColorIndexDarkGreen</td>
<td>10</td>
<td>Dark green</td>
</tr>
<tr>
<td>smoColorIndexDarkMagenta</td>
<td>11</td>
<td>Dark magenta</td>
</tr>
<tr>
<td>smoColorIndexDarkRed</td>
<td>12</td>
<td>Dark red</td>
</tr>
<tr>
<td>smoColorIndexBrown</td>
<td>13</td>
<td>Brown</td>
</tr>
<tr>
<td>smoColorIndexDarkGray</td>
<td>14</td>
<td>Dark gray</td>
</tr>
<tr>
<td>smoColorIndexLightGray</td>
<td>15</td>
<td>Light gray</td>
</tr>
</tbody>
</table>

Hint: Those properties that use BGR colors are more flexible and should be used preferably.

The colors smoColorIndexAutomatic and smoColorIndexTransparent serve specific purposes, as follows:

- **smoColorIndexAutomatic** sets the text color in TextMaker or the color of the sheet grid in PlanMaker to "Automatic".

- **smoColorIndexTransparent** sets the background color of text to "Transparent" in TextMaker or PlanMaker.
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