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**Manual**

# **BasicMaker 2021**

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# Welcome!

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 scripts.

BasicMaker is available only for Windows. It is not included in all versions of SoftMaker Office.

**Hint:** The manual describes the use of the program via the **ribbon user interface**. A description of operation via **classic menus with toolbars** can only be found in older manuals.

A table in the appendix shows you which ribbon command corresponds to which menu command: [Ribbon commands and corresponding menu commands](#)

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.
- [Statements and functions from A to Z](#)

This chapter covers descriptions of all statements and functions available in SoftMaker Basic.

---

## What is BasicMaker?

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

**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 in tandem with *applications*. For example, with some simple Basic statements, 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 statements available, see the chapter [Statements 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. In either of them, invoke the ribbon command **File | Scripts group | 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. With it, 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. For more information, see the section [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 on the File ribbon tab](#)
- [Commands on the Home ribbon tab](#)
- [Commands on the View ribbon tab](#)
- [Commands on the Quick access toolbar](#)
- [Changing the preferences 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**

To start **BasicMaker**, use the **Start menu** (the icon with the Windows logo) in the lower left corner of the screen. You will find your SoftMaker Office applications in a folder called **SoftMaker Office**.

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 or PlanMaker**

You can also start BasicMaker from within TextMaker or PlanMaker. To do this, invoke the **Edit script** command on the ribbon tab **File | Scripts** group in TextMaker or PlanMaker.

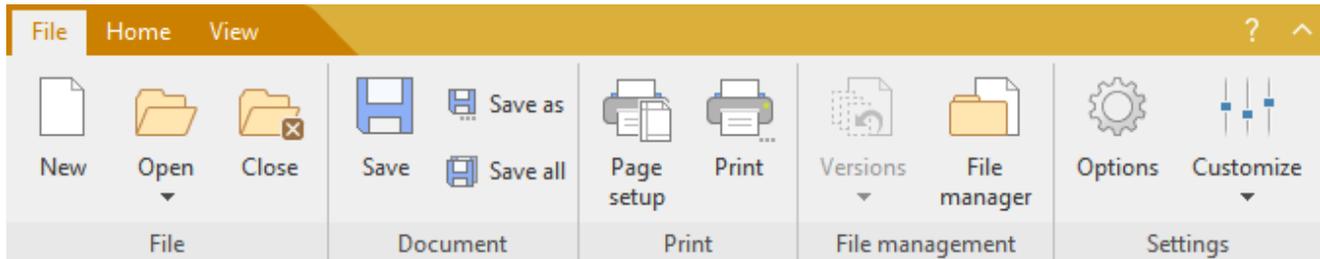
- **Running a script directly from within TextMaker or PlanMaker**

To execute a script from TextMaker/PlanMaker, invoke the ribbon command **File | Scripts** group | **Start script** in TextMaker or PlanMaker. A file dialog will appear. Select a script, confirm with **OK** and the script will be executed.

---

## Commands on the File ribbon tab

With the commands on the **File** ribbon tab of the script editor, you can open, save, print and manage files. Additionally, you can configure the editor here.



- **File | New**

Creates a new 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 | Page setup**

Lets you adjust the paper format and margins for printing.

- **File | Print**

Prints the script in the current window.

- **File | Versions**

Returns to a previous version of the currently open script.

- **File | File manager**

Opens the file manager, which you can use to easily find, open, delete and print files. More information about this can be found in [Using the file manager](#).

- **File | Options**

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

- **File | Customize**

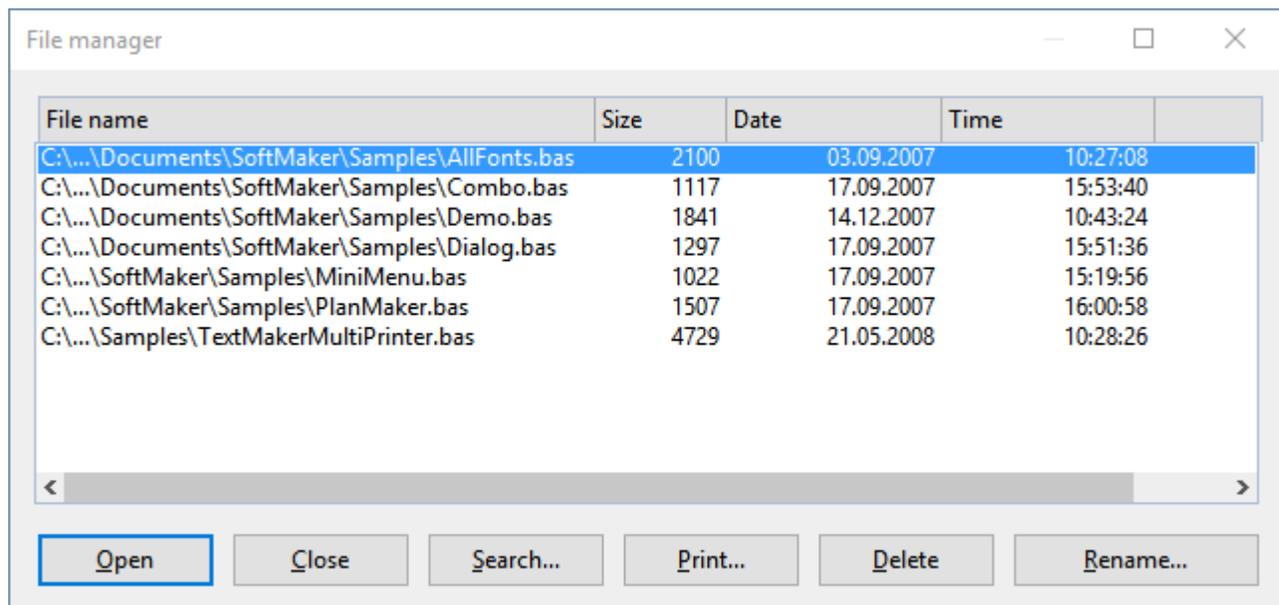
Lets you customize the ribbons (or the toolbars) as well as the keyboard shortcuts for the editor. For detailed information, refer to the TextMaker manual - under the following keywords: "Ribbon: Customize" (or "Toolbars: Customize") and "Shortcuts: Customize".

---

## Using the file manager

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

To start the file manager, choose the ribbon command **File | File management group | File manager**.



To invoke a command, select a file from the list 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. The new search results will be added to the old ones.

**▪ "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).

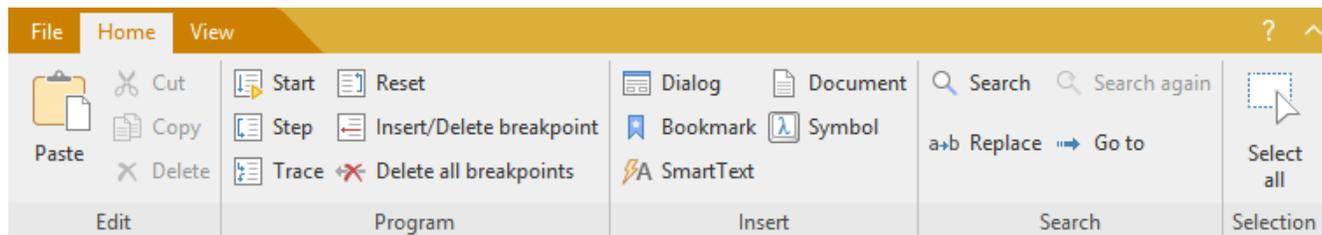
## Rename

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

---

## Commands on the Home ribbon tab

The following commands are available on the **Home** ribbon tab of the script editor:



### Command group "Edit"

The commands in this group are used for editing scripts.

- **Paste**  
Pastes the content of the clipboard into the text at the current position.
- **Cut**  
Cuts the selected text to the clipboard.
- **Copy**  
Copies the selected text to the clipboard.
- **Delete**  
Deletes the selected text.

### Command group "Program"

You can execute the current script with the commands in the Program group of the Home ribbon tab of the script editor:

- **Start** (keyboard shortcut: F9)  
Executes the script. See also the section [Starting scripts](#).

The other options in the command group **Program** 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:

- **Trace** (keyboard shortcut: F7)  
Carries out the next statement in the script, then stops.
- **Step** (keyboard shortcut: F8)  
This, too, invokes the next statement, provided however that procedures (functions and subs) are not processed in single steps, but as a whole.
- **Reset** (keyboard shortcut: Ctrl+F2)  
Breaks the execution and puts the script back to its first line.
- **Insert/Delete Breakpoint** (keyboard shortcut: F2)  
Places or removes a breakpoint in the current line. The execution of scripts will be automatically interrupted as soon as it reaches a breakpoint.
- **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](#).

### Command group "Insert"

The following commands are available on the **Home** ribbon script **Editor** tab:

- **Dialog**  
Opens the graphical dialog editor, with which you can create and edit user-defined dialog boxes. For more information, see the section [Using the dialog editor](#).
- **Bookmark**  
Sets a bookmark at the current position. This can be visited again at any time with the ribbon command **Start | Go to**. More on this can be found in the section [Bookmarks and the Go to](#) command.
- **SmartText**  
Allows you to insert and edit SmartText entries. For more information, see the section [Using SmartText](#).  
Tipp: Using SmartText entries for frequently used instructions or routines can save you a lot of time!
- **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.
- **Special characters**  
Opens 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.

### Command group "Search"

The Find and Replace commands can be found in the **Find** tab:

- **Search**

Lets you search for text. More information about this can be found in the section [Searching and replacing in the script editor](#).

- **Replace**

Lets you search for text and replace it with some other text. More information about this can be found in the section [Searching and replacing in the script editor](#).

- **Find next**

Repeats the last search or replace command. More information about this can be found in the section [Searching and replacing in the script editor](#).

- **Go to**

Lets you set and navigate to bookmarks in the script. More on this can be found in the section [Bookmarks and the Go to](#) command.

### Command group "Select"

The **Select all** command selects the entire text.

---

## Searching and replacing in the script editor

The ribbon commands **Home | Search** and **Home | Replace** allow you to search for a specific text in the script or replace it with another text.

### Search

With the ribbon command **Home | Search**, you can search for text. Type in the term you want to search and click the **Search** button.

Options available in the Search dialog box:

**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 starts at the top of the script instead of the current position of the text cursor.

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

**Reset:** Use this button to remove the search text entered in the dialog box.

## Replace

With the ribbon command **Home | Replace**, you can search for text and replace it with different text.

Enter the search string and the replacement string.

**Options:** see above

Start the search with the **Search** button. When the script editor finds the searched 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 box.

## Search again

With the ribbon command **Home | Search again**, you can repeat the last search or replacement action.

---

## 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 ribbon command **Insert | Insert group | Bookmark** at the desired position in the text and give the bookmark a name. After giving the bookmark a name, you can use the ribbon command **Home | Search group | Go to** to return to the bookmarked position any time you wish.

### 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. Invoke the ribbon command **Home | Insert group | Bookmark**.
3. Type in a name of your choosing for the bookmark. Its name may contain only letters, numbers and underscores. Special characters are not allowed. The name must 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. Invoke the ribbon command **Home | Search group | Go to**.
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. Invoke the ribbon command **Home | Insert group | 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 specific line

The ribbon command **Home | Search group | Go to** allows you to move the cursor to a specific line of the script. To do this, invoke the command and type in the line number.

---

## Using SmartText

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

For example, you could create a SmartText entry named "tma" containing "tm.Application.ActiveDocument". Later, just type "tma" in the script and press the space bar or a punctuation character. Immediately, "tma" will be replaced with "tm.Application.ActiveDocument".

This can save you lot of time otherwise spent on typing.

### Creating SmartText entries

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

1. Invoke the ribbon command **Home | Insert group | SmartText**.
2. Click on the **New** button to create a new SmartText entry.
3. Give the SmartText entry a name ("tma" in our example). Then click on **OK**.

4. Type in the text for the SmartText entry in the large input field ("tm.Application.ActiveDocument" in our example). Click on **Save**.
5. Leave the dialog box by clicking **Close**.

The SmartText entry has now been created. Later, the SmartText entry can be called up by using the specified name.

### 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, you have disabled the option **Expand SmartText entries**. Invoke the ribbon command **File | Options**, switch to the **General** tab and activate this option again.

Alternatively, you can insert the element using a dialog box with the ribbon command **Home | SmartText**, selecting the desired element and then clicking the **Insert** button.

### Editing SmartText entries

With the ribbon command **Home | Insert** group | **SmartText** you can edit the already created text modules later:

- **Creating a new SmartText entry**

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

- **Deleting an entry**

To delete a text module, select it from the **Text modules** list and click 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.

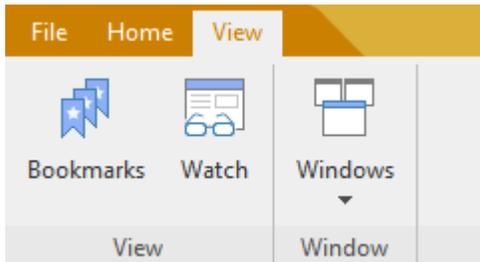
- **Close dialog box**

You can close the dialog box with the **Close** button.

---

## Commands on the View ribbon tab

Use the commands on the **View** ribbon tab of the script editor to customize the screen display:



- **View | Bookmarks**

Allows you to choose whether bookmarks are visible in the script.

- **View | Variable window**

Opens the variable window. It can be used to monitor the contents of variables during the execution of the script. For more information, see the section [Watching variables](#).

- **View | Windows**

The **Close all** command closes all open windows.

All open windows are listed in the window list below. If you click on an entry, the corresponding window comes to the foreground.

---

## Commands on the Quick access toolbar

The *Quick access toolbar* is displayed directly below the ribbon. It provides a selection of the most frequently used commands.



- **Touch mode**

If you enable this button, all symbols in the ribbon will be slightly larger. This is useful when operating the software with your finger (for example, on a tablet).

- **Opening files**

Opens an existing script, see [Commands on the File ribbon tab](#).

- **Save file**

Saves the script in the current window, see [Commands on the File ribbon tab](#).

- **Undo**

Undoes the last text change in the current script window. You can invoke this command several times, in order to undo the last x changes.

- **Redo**

Restores the effect of your most recently Undo operations. This command can also be invoked repeatedly.

To the right of the quick access bar, there is a  double arrow. With this button you can enable/disable and configure the symbols of the script editor or change the position of the quick access bar. For detailed information, refer to the TextMaker manual, keyword "Ribbon: Customize".

To the left of the quick access bar you will find the  "**Hamburger menu**": If you have selected the "Ribbon" as user interface (see section [Change settings of the script editor](#)), the "Hamburg menu" in the quick access bar is now available in case you want to access the menu commands of the classic menu.

---

## Changing the settings of the script editor

Use the ribbon command **File | Options** to configure the settings of the script editor.

The available settings are distributed across several dialog-box tabs:

### **View tab**

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

- **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). This determines by how many characters the text is indented when the tab key is pressed.

- **Show bookmarks**

Normally, bookmarks are not visible in the script. However, if you enable this option, bookmarks will be displayed. For information about using bookmarks, see the [Bookmarks section 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 **Undo** 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 and then press the space bar, Enter key or a punctuation character (see [Using SmartText](#)).

If this option is deactivated, SmartText elements can only be inserted via the ribbon command **Home | Insert** group | **SmartText**.

## 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: The touch mode can alternatively be switched on/off with the following commands:

Ribbon user interface: Here, you choose the command **Touch mode**  in the Quick access toolbar.

Classic menu interface: Here, you choose the command **View > Touch mode**.

- **Prefer using larger controls**

This option is important when using 4k monitors. If the program's icons appear too small on your screen (caused by a higher monitor scaling), enabling this option will enlarge the icons appropriately.

- **Show status bar in ribbon mode**

Only applies to *ribbon mode*: You can switch the display of the status line on/off here. To change the display of the status bar for the *classic menu*, see the 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 what each font looks like.

- **Show tooltips**

Lets you specify whether or not *tooltips* should be displayed. These are short info texts that are displayed next to the mouse pointer when you point the mouse at a screen element.

- **Beep on errors**

When this option is enabled, a sound plays when an error or warning message is displayed.

- **Use system file dialogs**

This option controls the type of dialog boxes 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.

- **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 of files.

- **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. Here you can specify the number of files to be displayed in the list.

## Backup tab

Use this tab to change options regarding the manual and automatic saving of files:

- **When you save a file manually**

**Keep older versions of the document:** Several generations of file backups are created for each document. All of these copies are stored in a special **Backup** folder.

Tip: If this option is enabled, the command **File | Versions**  (in the group **File management**) is also available, which allows you to easily return to a previous file version of the currently open document.

**Number of versions to keep:** Here, you specify the maximum number of versions of backups (generations) to be kept per document.

- **Automatically created file versions (snapshots)**

**Save unsaved changes every ... minutes:** If you want automatic "snapshots" to be created as an additional backup while the document is being edited, enable the checkbox here. In the dropdown field to the right, you specify the interval at which the snapshots are to be taken regularly.

**Number of snapshots to keep:** In this dropdown field, you specify the maximum number of snapshots you want to keep.

- **Folder for file versions**

Here, you can change the path for the Backup folder in which all backups are stored.

- **"Clean up" button:** This button provides the following two commands for deleting backups:

**Delete orphaned file versions** removes all file backups where the corresponding original document no longer exists.

**Delete file versions of all documents** removes *all* file backups in the folder for file versions.

If saving of backup copies has been enabled, you can open the version manager with the command **File | Versions**. There, all available backups of the currently opened script are listed clearly and you can return to a previous file version.

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

### **"Manage" button**

In the dialog box of the ribbon command **File | Options**, you will find the **Manage** button on each tab. You can use it to save the settings of the program and, for example, transfer them to a new version.

See the next section for more detailed information.

---

## **Export/import settings**

You can save your individual settings that you have configured in the SoftMaker Office applications. In the first step, export the settings data – for example, before you install a new version. Then, in the second step, import this data into the newly installed version.

For both steps, use the **Manage** button in the **File | Options** dialog box .

Which settings you can exactly export/import, you will find below.

**Note:** Export and import of settings data is only possible for version 2021 and later.

### What reasons could there be to export/import settings?

The following reasons could be considered for exporting/importing your settings:

- You want to apply the settings from the old version to a new version of SoftMaker Office that you install on the same computer.
- You have also installed the current version of SoftMaker Office on another computer and would like to use the same settings there.
- You want to apply the settings of an old version of SoftMaker Office to another computer on which you have installed the new version of SoftMaker Office.

### Which files are saved?

For the export BasicMaker accesses the settings files (...config.ini, ...tools.dat etc.) that are stored in the `SoftMaker\Settings` folder on your device.

**Note:** The above information is for illustrative purposes only and you usually don't need to do anything here. BasicMaker will automatically replace these files for you if you follow the steps described below for exporting/importing the settings.

### Step 1: Export the settings

To export, choose the command **File | Options**  to open the dialog box "Settings". Here, click on the **Manage** button located at the bottom left of each tab of this dialog box.

Another dialog box "Manage Settings" will open. Here, choose from the following options which settings you want to save:

**Tip:** You can also just export all of them, but later when importing you must make sure that you only select the options you really want.

- **Configuration files**

This option saves all the settings you have made in the dialog box of the **File | Options** command. Some of these settings are also located directly on the ribbon tabs (or in the toolbars).

- **Customized ribbon/toolbars**

If you have changed the arrangement on the ribbon, in the Quick access bar or in toolbars, you can save your individual arrangement with this option.

**Please note for the import** of settings from an old to a new version of SoftMaker Office: If this option is enabled, command icons that have been newly added in the more recent version will then not be displayed there. So if you prefer the new icons to be displayed instead of keeping your old arrangement, you should disable this option. Or you can import your old arrangement anyway and pick out by yourself afterwards the new icons relevant for you by using the command **File | Customize**.

- **Keyboard shortcuts**

This option allows you to import keyboard shortcuts that you have assigned yourself.

- **User dictionaries**

This option allows you to save the words you have added to your user dictionaries (see TextMaker, PlanMaker, Presentations).

- **Other (SmartText, Labels, ...)**

Enable this option if you want to apply all other settings that can be saved in SoftMaker Office.

When you finally click on **Export**, a Zip file is created with the options you selected. Save this file to any location that you can easily access for later import.

**Note:** The settings of all SoftMaker Office applications will be exported in this process (TextMaker, PlanMaker, Presentations, BasicMaker). The same applies to the import in the following step.

## **Step 2: Import the settings**

To import the settings to another installation of the program, choose the command **File | Options** there. In the "Settings" dialog box, click on the **Manage** button.

In the following dialog box "Manage settings", place a check mark in front of the settings you want to import. (Details about the options are described above in step 1).

Now click the **Import** button and select the Zip file you created in step 1. The imported settings will take effect in the current BasicMaker application when you restart the program.

## **"Reset" button**

The **Reset** button resets all the program's settings to their delivery state.

**Note:** This action resets the settings for all SoftMaker Office applications (TextMaker, PlanMaker, Presentations, BasicMaker) of this version.

---

## Starting scripts

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

- **Starting from BasicMaker**

To execute a script, invoke the ribbon command **Home | Program** group | **Start** in BasicMaker or press the **F9** key.

- **Starting from TextMaker or PlanMaker**

You can also start a script from TextMaker or PlanMaker. To do this, invoke the ribbon command **File | Scripts** group | **Start script** in TextMaker or PlanMaker. A file dialog will appear. Select a script, confirm with **OK** and the script will be executed.

- **Starting from the command line**

Alternatively, scripts can be started from the command line by entering **BasicMaker /s scriptname.bas**. BasicMaker will start, run the specified script and then close.

### Aborting a script

You can abort running scripts by pressing the key combination **Ctrl+Break**. (If another application is in the foreground at this moment, switch to the BasicMaker application window first.)

---

## Debugging scripts

The script editor offers commands that help you find and fix errors ("debugging"):

- [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:

### Trace (keyboard shortcut: F7)

When you invoke the ribbon command **Home | Program** group | **Trace**, only a single line of the script runs and execution halts. If you invoke this command again, the next line will run, then execution halts again, etc.

This allows you to execute a script line by line in single steps.

**Procedure step (keyboard shortcut: F8)**

The ribbon command **Home | Program** group | **Step** also executes only one line of the script and then stops execution.

The difference between this and the Trace command: 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** will go into this procedure, run the first statement and then wait. **Step** will treat the whole procedure as a single statement and process it as a whole before pausing.

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

The ribbon command **Home | Program** group | **Reset** aborts the single-step execution and resets the script to the first line.

---

**Using breakpoints**

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

To resume the execution afterwards, you can invoke the ribbon command **Home | Program** group | **Start**, or alternatively **Home | Trace** or **Home | Step**.

The following commands are available for breakpoints:

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

The ribbon command **Home | Program** group | **Set/delete breakpoint** sets or removes a breakpoint in the current line.

**Delete all breakpoints (keyboard shortcut: Alt+F2)**

The ribbon command **Home | Program** group | **Delete all breakpoints** deletes all 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 monitor a variable, do the following:

1. If the watch window is currently not visible, activate it by using the ribbon command **View | Watch**.

2. In the script, click on the name of the variable that you want to monitor. Then right-click to open the context menu and choose the command **Show variable**. You can also simply type in the name of the variable in an empty row of the watch window.
3. Now start the script with the ribbon command **Home | Program group | Start**, or alternatively with **Home | Trace** or **Home | Step**.

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:

- [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 to interact 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 the 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.

Read more about it on the following pages.

---

### Opening/closing the dialog editor

The dialog editor can be invoked with the ribbon command **Home | Insert group | Dialog**.

Proceed 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. Invoke the ribbon command **Home** | **Insert** group | **Dialog**.
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 box by clicking **Close**.

The dialog definition is now inserted into the source code.

### Editing an existing dialog

To edit an *existing* dialog definition, proceed as follows:

1. Invoke the ribbon command **Home** | **Insert** group | **Dialog**.
2. Choose the dialog that you want to edit from the **Dialog name** 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 delete a dialog definition, remove it manually from the source code or select the ribbon command **Home** | **Insert** group | **Dialog**, select the desired dialog from the **Dialog name** list and click the **Delete** button.

---

## Commands in the File menu of the dialog editor

The 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 from 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**

Pastes the content of the clipboard.

- **Edit > Delete**

Deletes dialog elements.

- **Edit > Delete all**

Empties the whole dialog box.

- **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 send 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 box.

The settings in the **Vertical** section 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 selected item.

**Maximum width:** The width is adapted to that of the widest selected 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 aid 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.

Tip: 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**:

Dialog element	Icon	Key
OK button		F2
Cancel button		F3
Button		F4

Radio button		F5
Check box		F6
Text		F7
Input box		F8
Group box		F9
List box		F10
Combo box		
Drop-down list		

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 a *comment* 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** statement 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 statements in a line

You can place several statements 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)
```

### Statements spanning several lines

You can make a statement 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: decimal, octal and 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:

Type	Suffix	Syntax of the declaration	Size
String	\$	Dim <Name> As String	0 to 65,500 characters
String*n		Dim <Name> As String*n	exactly <i>n</i> characters
Integer	%	Dim <Name> As Integer	2 bytes
Long	&	Dim <Name> As Long	4 bytes
Single	!	Dim <Name> As Single	4 bytes
Double	#	Dim <Name> As Double	8 bytes
Boolean		Dim <Name> As Boolean	2 bytes
Variant		Dim <Name> As Variant  Or simply: Dim <Name>	depends on content
Object		(see the section <a href="#">OLE Automation</a> )	
User-defined		(see the section <a href="#">User-defined data types</a> )	

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 the [Explicit option](#) is set). SoftMaker Basic then automatically declares it on its first occurrence - as **variant** data type.

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
    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. You can use the [VarType](#) function to determine the current data type. You can use the [IsNumeric](#) function to check whether the variable currently contains 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. It can be queried with the [IsEmpty](#) function. In numeric operations, **Empty** is interpreted as 0, in string operations as an empty string.
- The value **Null** serves to signal the fact that no (valid) value is available. It can be queried with the function [IsNull](#). Each operation with a **Null** value results in **Null**.

### 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

You can use the [Type](#) statement to define your own data types. This must be done before declaring procedures - user-defined *data types* are always globally valid. The user-defined *variables* can 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

```

Variables of this type can be created like other variables with [Dim](#) or [Static](#). The individual elements can be accessed with the point notation *Variable.element* (see also [With statement](#)).

```

Dim p As Person
p.LastName = "Smith"

```

---

## Variables

### Declaring variables

Variables are created with the statements [Dim](#) or [Static](#). By default, variables have the type Variant. If a different data type is desired, you must specify it in the declaration with *As Type* or with a type suffix (e.g. % for **Integer**) (see the section [Data Types](#)).

```
' Declare X as a variant variable:  
Dim X  
  
' Declare X as an integer variable:  
Dim X As Integer  
  
' Same as the statement above:  
Dim X%  
  
' Multiple declarations in a line:  
Dim X%, Name$
```

### Scope of variables

Variables can be either local or global:

- Global variables are created with a [Dim](#) statement *outside of* a procedure. They can be accessed anywhere.
- Local variables are created with a [Dim](#) or [Static](#) statement *within* a procedure (subroutine or function). They are only available within the procedure.

---

## Arrays

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

All elements of 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, variables are not acceptable.

If the lower limit is omitted, the value defined by [Option Base](#) is taken – by default, this is 0.

```
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:

```
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:

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

---

## Operators

SoftMaker Basic supports the following operators:

### Arithmetic operators

Operator	Function	Example
+	Addition	$x = a + b$
-	Subtraction	$x = a - b$
	<i>also:</i> Negation	$x = -a$
*	Multiplication	$x = a * 3$
/	Division	$x = a / b$
<b>Mod</b>	Modulo	$x = a \text{ Mod } b\%$
^	Exponentiation	$x = a ^ b$

### String operators

Operator	Function	Example
+	Concatenation	$x = \text{"Good " + "Day"}$
<b>&amp;</b>	Concatenation	$x = \text{"Good " \& "Day"}$

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:

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

### Comparison operators

Operator	Function	Example
<	Less than	If x < y Then ...
<=	Less than or equal to	If x <= y Then ...
=	Equal to	If x = y Then ...
>=	Greater than or equal to	If x >= y Then ...
>	Greater than	If x > y Then ...
<>	Not equal to	If x <> y Then ...

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

Operator	Function	Example
Not	Logical negation	If Not (x = a) Then ...
And	Logical and	If (x > a) And (x < b) Then ...
Or	Logical or	If (x = y) Or (x = z) Then ...

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:

Operator	Function	Precedence
----------	----------	------------

()	Parentheses	highest
^	Exponentiation	
+ -	Positive/negative sign	
/ *	Division/multiplication	
+ -	Addition/subtraction	
Mod	Modulo	
= <> > < <= >=	Comparison operators	
Not	Logical negation	
And	Logical and	
Or	Logical or	lowest

---

## Flow control

SoftMaker Basic provides a number of statements that control the *program flow* in scripts. For example, there are statements that perform, skip or repeat statements depending on a condition. There are the following variations:

### Goto branches

```
Goto Label1
.
.
.
Label1:
```

The [Goto](#) statement performs an unconditional jump the specified label – in the above example to the label "Label1".

### Gosub branches

```
Gosub Label1
.
.
.
Label1:
    Statement(s) ...
Return
```

A jump target must also be specified for the [Gosub](#) statement. The difference to the **Goto** statements is that the **Gosub** statement returns to the original program position as soon as it encounters a **Return** statement.

**Do loops**

With a [Do Loop](#) loop, a group of statements can be executed multiple times. There are the following variations:

```
Do While | Until Condition
    Statement(s) ...
    [Exit Do]
    Statement(s) ...
```

**Loop**

*Or:*

```
Do
    Statement(s) ...
Loop While | Until Condition
```

The difference:

**Do While** and **Do Until** check the condition *before* beginning to execute the statements 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 statements 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 statements inside the loop.

```
While Condition
    Statement(s) ...
Wend
```

**For ... Next loops**

A [For Next](#) loop repeats the statements it contains exactly  $n$  times using a counter. Each time the loop is run, this counter is incremented or decremented by the specified value. If you do not specify an increment, 1 is used as the increment.

```
For counter = StartValue To EndValue [Step Increment]
    Statement(s) ...
Next
```

**If branches**

In an [If Then](#) block, statements are only executed if the specified condition is true. This condition must be an expression whose result is True or False (for example **If a<b Then**).

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

```
If Condition Then statement(s) ... ' One-line syntax
```

*Or:*

```
If Condition Then ' Multiple-line syntax
    Statement(s) ...
End If
```

A variation of this are **If ... Then ... Else** statements. Here, the statements after **Else** are executed if the condition is *not* true.

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

Further branches can be achieved by chaining multiple **If ... Then ... ElseIf** statements together. However, this may lead to code that is hard to understand and it is therefore recommended to use the [Select Case](#) statement instead (see below).

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

### Select Case branches

In a **Select Case** statement, a variable is checked against multiple values.

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

If the variable contains, for example, the value "Value1", the statements after **Case Value1** will be executed. If it has none of the specified values, the code will jump to the statements after **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 statements 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](#) statement.
- User-defined functions can be defined with the [Function](#) statement.

- Functions in DLLs can be declared with the [Declare](#) statement (see the section [Calling functions in DLLs](#)).

### Notes on naming subroutines and functions

Names for subroutines and functions may contain the letters A-Z and a-z, underscores (\_) and the digits 0-9. The name must begin with a letter. The length of a name may not exceed 40 characters. It may not consist of a SoftMaker Basic keyword.

---

## Passing parameters via ByRef or ByVal

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 invoked procedure can change the value of the underlying variable.

**ByRef** is the default method for passing parameters and therefore does not have to be explicitly specified.

`Sub Test(j As Integer)` is therefore synonymous with `Sub Test(ByRef j As Integer)`.

- **ByVal**

With **ByVal** ("by value"), the procedure merely receives a copy of the variable, so that changes to the parameter's value 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

To call a function in a DLL, it must first be declared with a [Declare](#) statement. If the procedure to be called does not return a value, it is declared as a **Sub**, otherwise as a **Function**.

### Example:

```
Declare Function GetPrivateProfileString Lib "Kernel32" (ByVal lpApplicationName As String, ByVal lpKeyName As String, ByVal lpDefault As String, ByVal lpReturnedString As String, ByVal nSize As Integer, ByVal lpFileName As String) As Integer
```

```
Declare Sub InvertRect Lib "User32" (ByVal hDC As Integer, aRect As Rectangle)
```

Once the procedure has been declared, it can be used like any other BASIC function or statement.

---

## File operations

In SoftMaker Basic, you have access to all the usual file operations. Below is a small example. Further information on the individual statements can be found in the chapter [Statements and functions from A to Z](#).

### Example:

```
Sub FileIO_Example
  Dim i, Msg
  Call Make3Files()
  Msg = "Three test files have been created. "
  Msg = Msg & "Press OK to delete them."
  MsgBox Msg
  For i = 1 To 3
    Kill "TEST" & i          ' Delete files
  Next i
End Sub

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

---

## Dialog boxes

You can define your own dialog boxes and then invoke 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 the 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 statements **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:

Parameter	Description
DialogName	Name of the dialog definition. After you have set up the dialog definition, you can declare a variable of this type ( <b>Dim Name As DialogName</b> ).
X, Y	Optional. Sets the screen coordinates for the upper left corner of the dialog box (in screen pixels).
Width, Height	Sets the width and height of the dialog (in screen pixels).
Title\$	The title of the dialog. It will be shown in the title bar of the dialog.
.DialogFunction	The (optional) 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 <a href="#">The dialog function</a> ).

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](#)

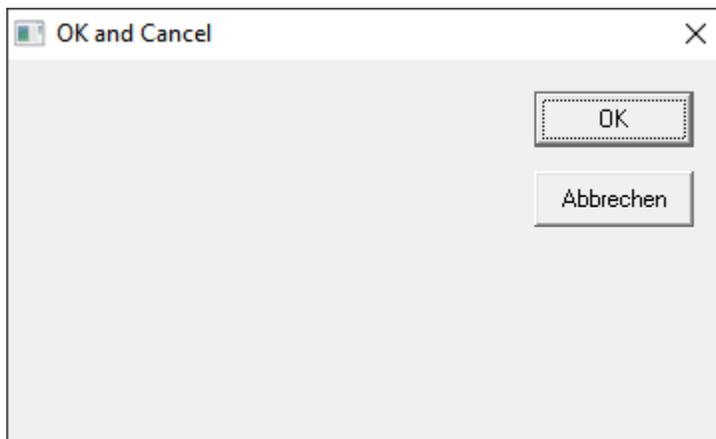
See the next pages for detailed information on each type of control.

---

## Command buttons

The **OK** and **Cancel** buttons 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

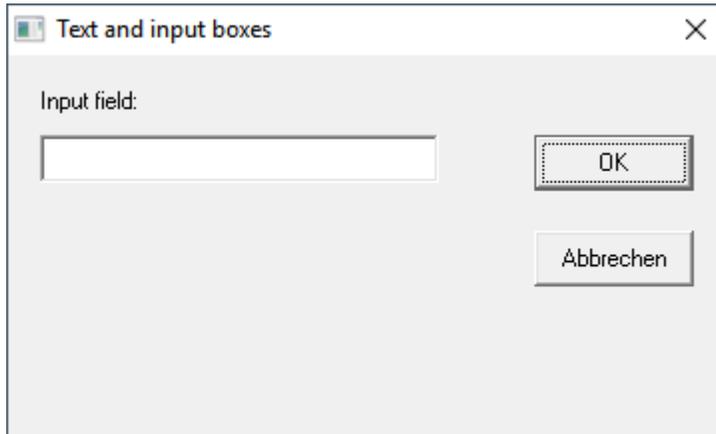
    Dim Dlg1 As ButtonSample
    rc% = Dialog (Dlg1)
End Sub
```

---

## Text and input boxes

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

*Input fields* (TextBox statement) accept text input from the user.



### Syntax:

**Text** *X, Y, Width, Height, Text*

**TextBox** *X, Y, Width, Height, .ID*

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

### Example:

```
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 field:"
        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**

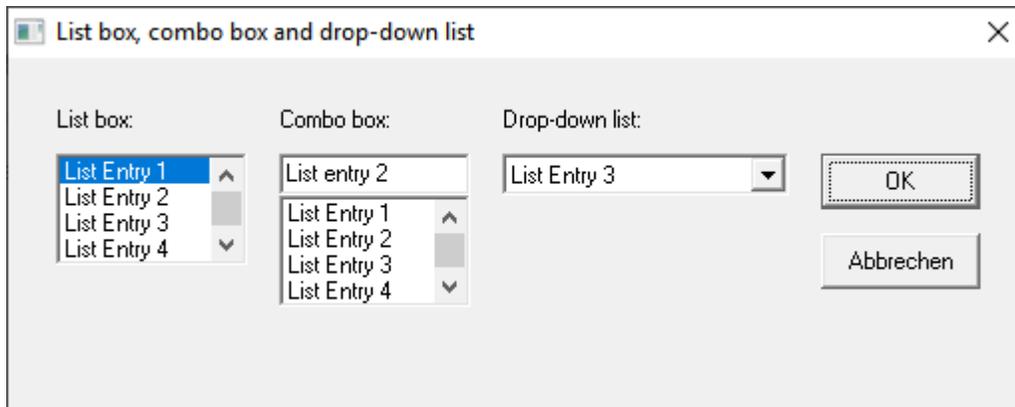
Here, the user can choose one of the options from the list.

- **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 the string array *Content* which you need to fill before displaying the dialog.

*ID* is a variable that contains the currently selected item: For **ListBox** and **DropListBox** this is a number (the index), for **ComboBox** it is text.

**Example:**

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
Dlg1.Lstbox = 0
Dlg1.CmboBox = "List entry 2"
Dlg1.DrpList = 2
rc% = Dialog(Dlg1)

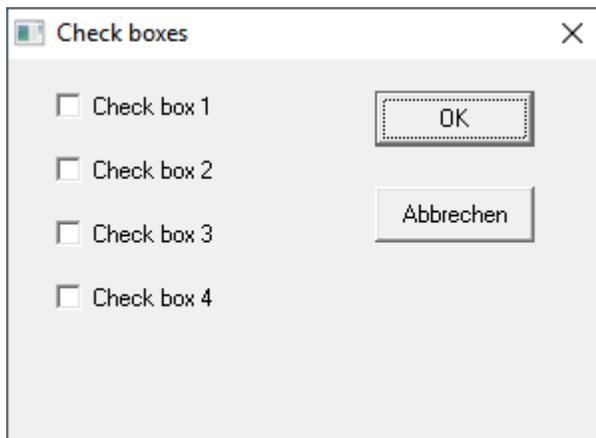
```

```
End Sub
```

---

## 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)

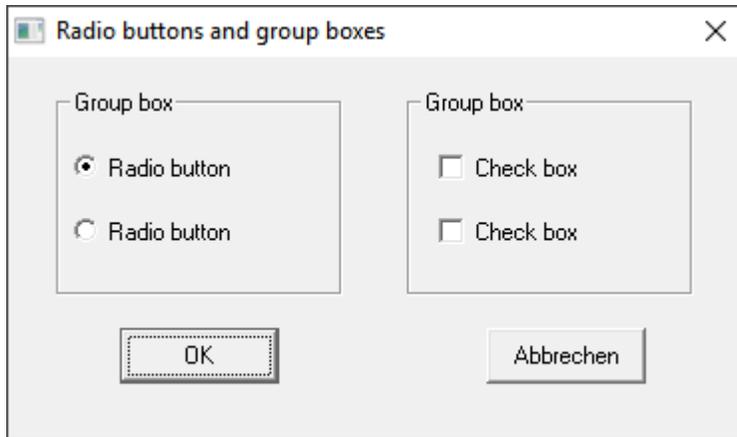
End Sub

```

## 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.



### Syntax:

**OptionButton** *X, Y, Width, Height, Text, .ID1*

**OptionGroup** *.ID2*

*ID1* is a variable that contains the current state of the field.

*ID2* is a variable that contains the index of the currently selected option.

### Example:

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 invoked whenever the dialog field is initialized or the user interacts with 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 **MyDlg** will be connected to the dialog function with the name **MyDlgFunc**:

```
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:

```
Function FunctionName(ControlID$, Action%, SuppValue%)  
    [Statements]  
    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.

Sub Main

```

Begin Dialog UserDialog1 60,60, 260, 188, "Dialog Function", .Dialogfn
  Text 8, 10, 73, 13, "Text:"
  TextBox 8, 26, 160, 18, .FText
  CheckBox 8, 56, 203, 16, "Show all", . Chk1
  GroupBox 8, 79, 230, 70, "Group box:", .Group
  CheckBox 18, 100, 189, 16, "Change the button caption", .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)

**Function Dialogfn(ControlID\$, Action%, SuppValue%)**

```

Begin Dialog UserDialog2 160,160, 260, 188, "Dialog Function", .Dialogfunction
  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$ = "Chk1" Then
    DlgEnable "Group"
    DlgVisible "Chk2"
    DlgVisible "History"
  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 open 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:

```
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:

```
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:**

```
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 = MyObj.Application.Width ' Retrieve the width of the program window
```

*Or:*

```
MyObj.Application.Width = 5 ' Set the width of the program window
```

**Methods**

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

**Example:**

```
MyObj.Application.Quit ' Exit from the application
```

**Using collections**

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

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

You can use the [For Each Next](#) statement to enumerate all elements of a collection.

All collections offer the following properties and methods by default:

<b>Count</b>	Returns the number of elements (read only).
<b>Item(<i>i</i>)</b>	Provides the <i>i</i> -th element.
<b>Add</b>	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 open documents. In the first step, it is determined how many documents are currently open. Then the names of the opened documents are output. Finally, the documents are closed.

**Tip:** Detailed information on the subjects BasicMaker and [TextMaker](#) and [BasicMaker and PlanMaker](#) can be found in their respective chapters.

Sub Main

```
Dim tm As Object
Set tm = CreateObject("TextMaker.Application")
tm.Visible = True           ' Make TextMaker visible
tm.Activate                 ' Bring TextMaker to the foreground
tm.Documents.Add          ' Create three new documents
tm.Documents.Add
tm.Documents.Add
Print tm.Documents.Count & " open documents"
Dim x As Object
For Each x in tm.Documents
    Print x.Name           ' Output the names of the documents
Next

tm.Documents.Close      ' Close all documents
Set tm = Nothing         ' Cut the connection to TextMaker
```

End Sub

---

## BasicMaker and TextMaker

BasicMaker was mainly developed for 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](#).

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## Programming TextMaker

Programming the word processor TextMaker and the spreadsheet program 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 (see below for details):

1. Declare a variable of type **Object**:

```
Dim tm as Object
```

2. Make a connection to TextMaker via OLE Automation (this will launch TextMaker automatically if it is not already running):

```
Set tm = CreateObject("TextMaker.Application")
```

3. Set the property **Application.Visible** to **True** to make TextMaker visible:

```
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
```

This 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.

```
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:

```
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.

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:

```
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** und **Height** of the Application object. You can retrieve them as follows:

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

But you can also change the content of this property:

```
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:

```
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:

```
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:

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

#### Call as function:

```
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:

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

#### Call as function:

```
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 retrieve and modify many fundamental program settings:

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

---

## 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. 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.tmdx":
tm.Application.Documents.Item("Test.tmdx").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 **Item**, 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 a matching object type for their individual entries. Individual entries of the collection **Windows**, for example, that are returned by **Item** are of the type **Window** – note the use of the singular! One entry of the **Documents** collection is called **Document**, and one entry of the **RecentFiles** collection is called **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** statement:

```
' 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
```

### Additional properties and methods of collections

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 the With statement

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

First, the conventional style:

```
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** statement:

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

### Setting up object variables

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

Complicated:

```
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:

```
Sub Better
```

```

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

```

```
End Sub
```

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), you can access the new document much more easily through this helper object variable.

### Save time by 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      ' displays the 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 statements therefore are equivalent:

```

MsgBox tm.Application.Documents.Item(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:

<b>Name</b>	<b>Type</b>	<b>Description</b>
<a href="#"><u>Application</u></a>	Object	"Root object" of TextMaker
<a href="#"><u>Options</u></a>	Object	Global options
<a href="#"><u>UserProperties</u></a>	Collection	Collection of all components of the user's address
<a href="#"><u>UserProperty</u></a>	Object	An individual component of the user's address
<a href="#"><u>CommandBars</u></a>	Collection	Collection of all toolbars (toolbars work only in classic mode; they do not work with ribbons)
<a href="#"><u>CommandBar</u></a>	Object	A single toolbar (toolbars work only in classic mode; they do not work with ribbons)
<a href="#"><u>AutoCorrect</u></a>	Object	Automatic text correction and SmartText
<a href="#"><u>AutoCorrectEntries</u></a>	Collection	Collection of all SmartText entries
<a href="#"><u>AutoCorrectEntry</u></a>	Object	An individual SmartText entry
<a href="#"><u>Documents</u></a>	Collection	Collection of all open documents
<a href="#"><u>Document</u></a>	Object	An individual open document
<a href="#"><u>DocumentProperties</u></a>	Collection	Collection of all document properties of a document
<a href="#"><u>DocumentProperty</u></a>	Object	An individual document property
<a href="#"><u>PageSetup</u></a>	Object	The page settings of a document
<a href="#"><u>Selection</u></a>	Object	The selection or cursor in a document
<a href="#"><u>Font</u></a>	Object	The character formatting of the selection
<a href="#"><u>Paragraphs</u></a>	Collection	Collection of all paragraphs in a document

<b>Name</b>	<b>Type</b>	<b>Description</b>
<a href="#"><u>Paragraph</u></a>	Object	An individual paragraph in a document
<a href="#"><u>Range</u></a>	Object	Starting and ending position of a paragraph
<a href="#"><u>DropCap</u></a>	Object	The drop cap character of a paragraph
<a href="#"><u>Tables</u></a>	Collection	Collection of all tables in a document
<a href="#"><u>Table</u></a>	Object	An individual table
<a href="#"><u>Rows</u></a>	Collection	Collection of all table rows in a table
<a href="#"><u>Row</u></a>	Object	An individual table row
<a href="#"><u>Cells</u></a>	Collection	Collection of all cells in a table row
<a href="#"><u>Cell</u></a>	Object	An individual table cell
<a href="#"><u>Borders</u></a>	Collection	Collection of all border lines (left, right, top, bottom, etc.) of a paragraph, a table, a table row, or a cell
<a href="#"><u>Border</u></a>	Object	An individual border line
<a href="#"><u>Shading</u></a>	Object	The shading of paragraphs, tables, table rows and cells
<a href="#"><u>FormFields</u></a>	Collection	Collection of all form objects in a document
<a href="#"><u>FormField</u></a>	Object	An individual form object
<a href="#"><u>TextInput</u></a>	Object	An individual form object, viewed as a text field
<a href="#"><u>CheckBox</u></a>	Object	An individual form object, viewed as a check box
<a href="#"><u>DropDown</u></a>	Object	An individual form object, viewed as a selection list
<a href="#"><u>ListEntries</u></a>	Collection	Collection of all entries in a selection list
<a href="#"><u>ListEntry</u></a>	Object	An individual entry in a selection list
<a href="#"><u>Windows</u></a>	Collection	Collection of all open document windows
<a href="#"><u>Window</u></a>	Object	An individual open document window
<a href="#"><u>View</u></a>	Object	The view settings of a document window
<a href="#"><u>Zoom</u></a>	Object	The zoom level of a document window
<a href="#"><u>RecentFiles</u></a>	Collection	Collection of all recently opened files, as listed in the File menu
<a href="#"><u>RecentFile</u></a>	Object	An individual recently opened file
<a href="#"><u>FontNames</u></a>	Collection	Collection of all installed fonts

Name	Type	Description
<a href="#">FontName</a>	Object	An individual installed font

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. It is available during the whole time that TextMaker is running and accessed directly through the object variable returned by the **CreateObject** function:

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

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

```
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](#)
- **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, in this case "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 "1000".

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

Data type: **String**

Returns a string with the "bitness" of the program: "32" for the 32-bit version of TextMaker and "64" for the 64 bit version.

**Visible (property)**

Data type: **Boolean**

Gets or sets the visibility of the program window:

```
tm.Application.Visible = True ' TextMaker becomes visible  
tm.Application.Visible = False ' TextMaker becomes 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.tmdx").

**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
```

### 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 on the **General** tab of the ribbon command **File | Options**).

### CommandBars (pointer to object)

Data type: **Object**

Returns the [CommandBars](#) object that you can use to access the toolbars of TextMaker.

Note: Toolbars work only in classic mode. They do not work with ribbons.

### **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 open documents.

### **Windows (pointer to collection)**

Data type: **Object**

Returns the [Windows](#) collection, a collection of all currently open 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.

### **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:

```
' Set the top margin of the active document to 3cm  
tm.ActiveDocument.PageSetup.TopMargin = tm.Application.CentimetersToPoints(3)
```

### **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:

**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  
tm.ActiveDocument.PageSetup.TopMargin = tm.Application.MillimetersToPoints(30)
```

### **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:

**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
```

```
tm.ActiveDocument.PageSetup.BottomMargin = tm.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 TextMaker function accepts only points as its measurement unit.

Syntax:

```
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  
tm.ActiveDocument.PageSetup.BottomMargin = tm.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 type:

**Single**

Example:

```
' Set the bottom margin of the active document to 6 picas  
tm.ActiveDocument.PageSetup.BottomMargin = tm.Application.LinesToPoints(6)
```

### 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
```

Note: 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 ribbon command **File | Options** 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 **Application.Options**:

```
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**
- **Overtyp**
- **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 ribbon commands **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 ribbon command **File | New** 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**).

#### **Overtyping (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**).

### TablndentKey (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 (.tmdx)
tmDefaultFileFormatWinWordXP    = 1 ' Microsoft Word 97/XP/2003 (.doc)
tmDefaultFileFormatWinWord6    = 3 ' Microsoft Word 6.0/95 (.doc)
tmDefaultFileFormatOpenDoc     = 4 ' OpenDocument (.odt)
tmDefaultFileFormatRTF         = 5 ' RTF Rich Text Format (.rtf)
tmDefaultFileFormatOpenXML     = 6 ' Microsoft Office Open XML (.docx)
tmDefaultFileFormatTMD         = 7 ' TextMaker 2016 (.tmd)
```

### 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**

### **1 Description**

The **UserProperties** collection contains all components of the user's address (as entered on the **General** tab in the dialog box of the ribbon command **File | Options**).

The individual elements of this collection are of the type [UserProperty](#).

### **2 Access to the collection**

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

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

### **3 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 components in the user's address (name, street, etc.).

This value is constantly 18, since there are exactly 18 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 address (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:

<code>smoUserDataTitle</code>	= 1	' Title
<code>smoUserDataName</code>	= 2	' Name
<code>smoUserDataInitials</code>	= 3	' Initials
<code>smoUserDataCompany</code>	= 4	' Company
<code>smoUserDataDepartment</code>	= 5	' Department
<code>smoUserDataAddress1</code>	= 6	' Address field 1
<code>smoUserDataAddress2</code>	= 7	' Address field 2
<code>smoUserDataZip</code>	= 8	' Postal code
<code>smoUserDataCity</code>	= 9	' City
<code>smoUserDataCountry</code>	= 10	' Country
<code>smoUserDataPhone1</code>	= 11	' Phone 1
<code>smoUserDataPhone2</code>	= 12	' Phone 2
<code>smoUserDataPhone3</code>	= 13	' Phone 3
<code>smoUserDataFax</code>	= 14	' Fax
<code>smoUserDataEmail1</code>	= 15	' E-mail address 1
<code>smoUserDataEmail2</code>	= 16	' E-mail address 2
<code>smoUserDataEmail3</code>	= 17	' E-mail address 3
<code>smoUserDataWebsite</code>	= 18	' Website

Examples:

```
' Show the name of the user
MsgBox tm.Application.UserProperties.Item(1).Value

' Change e-mail address 2 to test@example.com
With tm.Application
    .UserProperties.Item(smoUserDataEmail2).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 address (for example, the street or the postal code).

An individual **UserProperty** object exists 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:

```
' Show the contents of the first address element (the name of the user)
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:

```
Sub Example()
    Set tm = CreateObject("TextMaker.Application")
    tm.UserProperties(smoUserDataCompany).Value = "ACME Corporation"
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**

### 1 Description

The **CommandBars** collection contains all of TextMaker's toolbars. The individual elements of this collection are of the type [CommandBar](#).

Note: Toolbars work only in classic mode. They do not work with ribbons.

### 2 Access to the collection

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

```
' 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.

Note: Toolbars work only in classic mode. They do not work with ribbons.

### 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 ribbon command **Files | Options**.

### Item (pointer to object)

Data type: **Object**

Returns an individual [CommandBar](#) object that you can use to access an individual toolbar.

Note: Toolbars work only in classic mode. They do not work with ribbons.

*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
tm.Application.CommandBars.Item(1).Visible = False

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

Note: It is not advisable to hard-code the names of toolbars in your program, 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 "Format".

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 of TextMaker.

An individual **CommandBar** object exists for each toolbar. If you create new toolbars or delete them, the respective **CommandBar** objects will be created or deleted dynamically.

Note: Toolbars work only in classic mode. They do not work with ribbons.

### 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:

```
' 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.

Note: Toolbars work only in classic mode. They do not work with ribbons.

Example:

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

### **Visible (property)**

Data type: **Boolean**

Gets or sets the visibility of the toolbar.

Note: Toolbars work only in classic mode. They do not work with ribbons.

The following example makes the "Formatting" toolbar invisible:

```
Sub Example()
    Set tm = CreateObject("TextMaker.Application")
    tm.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 contains settings related to automatic text correction and all SmartText entries.

## 2 Access to the object

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

```
Set tm = CreateObject("TextMaker.Application")
tm.Application.AutoCorrect.CorrectInitialCaps = True
```

## 3 Properties, objects, collections and methods

Properties:

- **CorrectInitialCaps**
- **CorrectSentenceCaps**
- **ReplaceText**

Objects:

- **Application** → [Application](#)
- **Parent** → [Application](#)

Collections:

- **Entries** → [AutoCorrectEntries](#)

### 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 accidentally 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 **Application.AutoCorrect.Entries**:

```
' Create a SmartText entry named "sd" containing "sales department"  
tm.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* → [AutoCorrect](#)

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**. You can specify either the numeric index or the name of the desired SmartText entry. Examples:

```
' Show the contents of the first defined SmartText entry
MsgBox tm.Application.AutoCorrect.Entries.Item(1).Value

' 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 of the new SmartText entry. If the name is empty or already exists, the call to 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:

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

An individual **AutoCorrectEntry** object exists for each SmartText entry. 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:

```
' 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
tm.Application.AutoCorrect.Entries.Item(1) .Delete

' Delete the SmartText entry with the name "sd"
tm.Application.AutoCorrect.Entries.Item("sd") .Delete
```

---

## Documents (collection)

Access path: [Application](#) → Documents

### 1 Description

The **Documents** collection contains all open 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 **Application.Documents**:

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

' Show the name of the first open 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, i.e. the number of the currently open documents.

#### Item (pointer to object)

Data type: **Object**

Returns an individual [Document](#) object, i.e. 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.tmdx" (if currently open)
MsgBox tm.Application.Documents.Item("Test.tmdx").FullName

' You can also specify the full path
MsgBox tm.Application.Documents.Item("c:\Documents\Test.tmdx").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.tmvx** 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.tmvx** 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 **.tmvx**, it will be automatically added.

Return type:

**Object** (a [Document](#) object which represents the new document)

Example:

```
Sub Example()
    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.

## Open (method)

Opens an existing document.

Syntax:

```
Open FileName, [ReadOnly], [Password], [WritePassword], [Format]
```

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.

**Format** (optional; Typ: **Long** bzw. **TmSaveFormat**): The file format of the document to be opened.

Possible values:

```

tmFormatDocument           = 0 ' TextMaker document
tmFormatTemplate           = 1 ' TextMaker document template
tmFormatWinWord97          = 2 ' Microsoft Word 97 and 2000
tmFormatOpenDocument      = 3 ' OpenDocument, OpenOffice.org, StarOffice
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 assumed.

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.tmdx"

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

## Close (method)

Closes all currently open 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 open documents without saving them
tm.Documents.Close smoDoNotSaveChanges
```

---

## Document (object)

Access paths:

- [Application](#) → [Documents](#) → [Item](#)
- [Application](#) → [ActiveDocument](#)
- [Application](#) → [Windows](#) → [Item](#) → [Document](#)
- [Application](#) → [ActiveWindow](#) → [Document](#)

## 1 Description

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

An individual **Document** object exists for each document. If you open or close documents, the respective **Document** objects will be created or deleted dynamically.

## 2 Access to the object

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

- All open documents are managed in the **Application.Documents** collection (type: [Documents](#)):

```
' Show the names of all open 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:

```
' 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**:

```
' Show the name of the current document in an indirect way
MsgBox tm.Application.ActiveDocument.BuiltInDocumentProperties.Parent.Name
```

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

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

## 3 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 → [Documents](#)

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.tmdx").

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

Data type: **String**

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

### **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 text 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 **EnableCaretMovement** is **True**, the text 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:

<code>tmMergeCSVAnsi</code>	=	3
<code>tmMergeDBaseAnsi</code>	=	5
<code>tmMergeCSVDos</code>	=	64
<code>tmMergeDBaseDos</code>	=	66
<code>tmMergeDBaseUnicode</code>	=	69

**MergeFileHeader (property)**

Data type: **Boolean**

Gets or sets the option **Use 1st record for field names**. (In TextMaker, you will find this option in the dialog box of the ribbon command **Mailings | Recipients** group | **Select database | Use existing database**.)

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** on the **View** tab in the dialog box of the ribbon command **File | Properties**.

**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 lets you access the currently selected text. 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 on the 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. [Documents](#).

**BuiltInDocumentProperties (pointer to collection)**

Data type: **Object**

Returns the [DocumentProperties](#) collection that you can use to access the document infos (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 **Visible** is True for the document) 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 for **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 without saving
tm.ActiveDocument.Close smoDoNotSaveChanges
```

### Save (method)

Saves the document.

Syntax:

```
Save
```

Parameters:

none

Return type:

none

Example:

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

### SaveAs (method)

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

Syntax:

```
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
tmFormatOpenDocument = 3 ' OpenDocument, OpenOffice.org, StarOffice
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 assumed.

Return type:

none

Example:

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

## Select (method)

Selects the entire document.

Syntax:

```
Select
```

Parameters:

none

Return type:

none

Example:

```
' Select the current document
tm.ActiveDocument.Select
```

You can then use the [Selection](#) object to change, for example, the text formatting or to copy the selected text to the clipboard.

### PrintOut (method)

Prints the document on the currently selected 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:

```
' 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 box of the ribbon command **File | Properties**.

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:

```
' 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 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. This includes the title, the author, the number of words, etc.

The individual elements of this collection are of the type [DocumentProperty](#).

### 2 Access to the collection

Each open document has exactly one **DocumentProperties** collection. It is accessed through **Document.BuiltInDocumentProperties**:

```
' 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 document properties of a document. This value is immutable, because all TextMaker documents have the same number of 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 parameter 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:

<code>smoPropertyTitle</code>	= 1	' "Title"
<code>smoPropertySubject</code>	= 2	' "Subject"
<code>smoPropertyAuthor</code>	= 3	' "Author"
<code>smoPropertyKeywords</code>	= 4	' "Keywords"
<code>smoPropertyComments</code>	= 5	' "Comments"
<code>smoPropertyAppName</code>	= 6	' "Application name"
<code>smoPropertyTimeLastPrinted</code>	= 7	' "Last print date"
<code>smoPropertyTimeCreated</code>	= 8	' "Creation date"
<code>smoPropertyTimeLastSaved</code>	= 9	' "Last save time"
<code>smoPropertyKeystrokes</code>	= 10	' "Number of keystrokes"
<code>smoPropertyCharacters</code>	= 11	' "Number of characters"
<code>smoPropertyWords</code>	= 12	' "Number of words"
<code>smoPropertySentences</code>	= 13	' "Number of sentences"
<code>smoPropertyParas</code>	= 14	' "Number of paragraphs"
<code>smoPropertyChapters</code>	= 15	' "Number of chapters"
<code>smoPropertySections</code>	= 16	' "Number of sections"
<code>smoPropertyLines</code>	= 17	' "Number of lines"
<code>smoPropertyPages</code>	= 18	' "Number of pages"
<code>smoPropertyCells</code>	= 19	' n/a (not available in TextMaker)
<code>smoPropertyTextCells</code>	= 20	' n/a (not available in TextMaker)
<code>smoPropertyNumericCells</code>	= 21	' n/a (not available in TextMaker)
<code>smoPropertyFormulaCells</code>	= 22	' n/a (not available in TextMaker)
<code>smoPropertyNotes</code>	= 23	' n/a (not available in TextMaker)
<code>smoPropertySheets</code>	= 24	' n/a (not available in TextMaker)

<code>smoPropertyCharts</code>	= 25	' n/a (not available in TextMaker)
<code>smoPropertyPictures</code>	= 26	' "Number of pictures"
<code>smoPropertyOLEObjects</code>	= 27	' n/a (not available in TextMaker)
<code>smoPropertyDrawings</code>	= 28	' n/a (not available in TextMaker)
<code>smoPropertyTextFrames</code>	= 29	' "Number of text frames"
<code>smoPropertyTables</code>	= 30	' "Number of tables"
<code>smoPropertyFootnotes</code>	= 31	' "Number of footnotes"
<code>smoPropertyAvgWordLength</code>	= 32	' "Average word length"
<code>smoPropertyAvgCharactersSentence</code>	= 33	' "Average characters per sentence"
<code>smoPropertyAvgWordsSentence</code>	= 34	' "Average words per sentence"

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:

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

### 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 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 content 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 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)
    tm.ActiveDocument.BuiltInDocumentProperties.Item(smoPropertyTitle).Value =
    "New title"

    ' Get the exact same property again (using the string 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:

```
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)
tm.ActiveDocument.BuiltInDocumentProperties(smoPropertyTitle) = "New title"

' Get the exact same property again (using the string 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 to 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:

```

Sub Main()
    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, whereas **Creation Date** (smoPropertyTimeCreated) is a date. The possible values are:

```
smoPropertyTypeBoolean = 0 ' Boolean
smoPropertyTypeDate    = 1 ' Date
smoPropertyTypeFloat   = 2 ' Floating-point number
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. You can use it to determine and change the paper size, page size and margins as well as the orientation of a document.

### 2 Access to the object

Each open document has exactly one instance of the **PageSetup** object. It is accessed through **Document.PageSetup**:

```
' Set the left margin of the page to 2cm
tm.ActiveDocument.PageSetup.LeftMargin = tm.CentimetersToPoints(2)
```

Note: 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**
- **TopMargin**
- **BottomMargin**
- **PageHeight**
- **PageWidth**
- **Orientation**
- **PaperSize**

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 suitable 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 suitable paper format.

### Orientation (property)

Data type: **Long** (SmoOrientation)

Gets or sets the page orientation. The following constants are allowed:

```
smoOrientLandscape = 0 ' Landscape orientation
smoOrientPortrait  = 1 ' Portrait orientation
```

### PaperSize (property)

Data type: **Long** (SmoPaperSize)

Gets or sets the page size of the document. The following constants are allowed:

```
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
smoPaperEnvelopeC4     = 30
smoPaperEnvelopeC6     = 31
smoPaperEnvelopeC65    = 32
smoPaperEnvelopeB4     = 33
smoPaperEnvelopeB5     = 34
```

<code>smpaperEnvelopeB6</code>	=	35
<code>smpaperEnvelopeItaly</code>	=	36
<code>smpaperEnvelopeMonarch</code>	=	37
<code>smpaperEnvelopePersonal</code>	=	38
<code>smpaperFanfoldUS</code>	=	39
<code>smpaperFanfoldStdGerman</code>	=	40
<code>smpaperFanfoldLegalGerman</code>	=	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**

### 1 Description

**Selection** represents the current selection in a document.

If text is selected, the **Selection** object represents the contents of this selection. If nothing is selected, the **Selection** object represents 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 **Selection** to make changes in the text formatting. Example: **tm.ActiveDocument.Selection.Font.Size = 24** changes the font size for the text selected in the active document to 24 points.

### 2 Access to the object

Each open document has exactly one instance of the **Selection** object. It can be accessed through **Document.Selection**:

```
' Copy the selection from the current document to the clipboard  
tm.ActiveDocument.Selection.Copy
```

### 3 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 belongs to the current selection.

#### Font (pointer to object)

Data type: **Object**

Returns the [Font](#) object which belongs to the current selection. It contains properties for reading and changing the character formatting in the selection.

#### 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 content of the selection to the clipboard.

Syntax:

**Copy**

Parameters:

none

Return type:

none

Example:

```
' Copy the active selection to the clipboard  
tm.ActiveDocument.Selection.Copy
```

**Cut (method)**

Cuts the content of the selection and places it in the clipboard.

Syntax:

**Cut**

Parameters:

none

Return type:

none

Example:

```
' Cut the current selection and place it in the clipboard  
tm.ActiveDocument.Selection.Cut
```

**Paste (method)**

Pastes the content of the clipboard into the selection.

Syntax:

**Paste**

Parameters:

none

Return type:

none

Example:

```
' Replace the active selection with the contents of the clipboard
tm.ActiveDocument.Selection.Paste
```

### Delete (method)

Deletes the content of the selection.

Syntax:

```
Delete
```

Parameters:

none

Return type:

none

Example:

```
' Delete the active selection
tm.ActiveDocument.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
tm.ActiveDocument.Selection.TypeText "Programming with BasicMaker"
```

### TypeParagraph (method)

Insert a carriage return character (CR) into the selection.

Syntax:

```
TypeParagraph
```

Parameters:

none

Return type:

none

Example:

```
' Insert a carriage rreturn 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:

```
' Execute a backspace at the current cursor position in the active document  
tm.ActiveDocument.Selection.TypeBackspace
```

### InsertBreak (method)

Inserts 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 assumed.

Return type:

none

Example:

```
' 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:

```
GoTo [What], [Which], [Count], [NumRow], [NumCol]
```

Parameters:

**What** (optional; type: **Long** or **TmGoToItem**) indicates whether the destination is a table or a paragraph:

```
tmGoToParagraph = 1 ' Paragraph
tmGoToTable = 2 ' Table
```

If you omit the **What** parameter, the value **tmGoToParagraph** will be assumed.

**Which** (optional; type: **Long** or **TmGoToDirection**) indicates whether the movement should be absolute or relative to the current position:

```
tmGoToAbsolute = 1 ' absolute
tmGoToRelative = 2 ' relative
```

If you omit the **Which** parameter, the value **tmGoToAbsolute** will be assumed.

**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 assumed.

**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:

```
' 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 rows 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 provide 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 assumed.

**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 assumed.

**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 assumed.

Return type:

**Object** (a [Table](#) object which represents the new table)

Examples:

```
' Convert the current selection to a table. The column separator is the 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:

```
' Select from character 1 to character 4 of the active document  
tm.ActiveDocument.Selection.SetRange 1, 4
```

**Tip:** 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 them to the **SetRange** method.

## InsertPicture (method)

Insert a picture from a file into the selection.

Syntax:

```
InsertPicture PictureName
```

Parameters:

**PictureName** (type: **String**) is the path and file name of the picture to be inserted.

Return type:

none

Examples:

```
' 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 open document has exactly one instance of the **Font** object. It is accessed through **Document.Selection.Font**:

```
' Assign the Arial font to the current selection  
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.

**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
tm.ActiveDocument.Selection.Font.Size = 10.3
```

**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":

- **True:** All caps on
- **False:** All caps off

- **smoToggle** (only when setting): The current state is reversed.
- **smoUndefined** (only when reading): The selection is partly in all caps and partly not.

### SmallCaps (property)

Data type: **Long**

Gets or sets the character formatting "Small caps":

- **True**: Small caps on
- **False**: Small caps off
- **smoToggle** (only when setting): The current state is reversed.
- **smoUndefined** (only when reading): The selection is partly in small caps 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 scaling factor. The value 0 turns small caps off, all other values represent the percentual scaling factor of the small capitals.

Example:

```
' Format the selected text in small capitals at 75% size
tm.ActiveDocument.Selection.Font.PreferredSmallCaps = 75

' Deactivate small caps again
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 provide an arbitrary value or use one of the [pre-defined 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" are the 16 standard colors of TextMaker, numbered from 0 for black to 15 for light gray. You may use the values shown in the [Index colors](#) table.

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 provide an arbitrary value or use one of the [pre-defined 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" are the 16 standard colors of TextMaker, numbered from -1 for transparent to 15 for light gray. You may use the values shown in the [Index colors](#) table.

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 read 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 read 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**

### 1 Description

**Paragraphs** is a collection of all paragraphs in a document. The individual elements of this collection are of the type [Paragraph](#).

### 2 Access to the collection

Each open document has exactly one instance of the **Paragraphs** collection. It is accessed through **Document.Paragraphs**:

```
' 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.

An individual **Paragraph** object exists for each paragraph. 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 collection [Paragraphs](#). Each document has exactly one instance of this collection.

An example:

```
' Set alignment to "justified" for the first paragraph
tm.ActiveDocument.Paragraphs.Item(1).Alignment = tmAlignParagraphJustify

' The same using an auxiliary object
Dim paragr as Object
Set paragr = tm.ActiveDocument.Paragraphs.Item(1)
paragr.Alignment = tmAlignParagraphJustify
Set paragr = Nothing ' Delete the auxiliary object 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](#)

- **Application** → [Application](#)
- **Parent** → [Paragraphs](#)

Collections:

- **Borders** → [Borders](#)

### BorderBounds (property)

Data type: **Long** (TmBorderBounds)

Gets or sets the spacing between the paragraph borders and the paragraph itself. The possible values are:

```
tmBoundsPage      = 0 ' Borders extend to the page margins
tmBoundsIndents   = 1 ' Borders extend to the paragraph margins
tmBoundsText      = 2 ' Borders extend to the paragraph text
```

### FirstLineIndent (property)

Data type: **Single**

Gets or sets the first line indent of the paragraph in points (1 point corresponds to 1/72 inches).

### LeftIndent (property)

Data type: **Single**

Gets or sets the left indent of the paragraph in points (1 point corresponds to 1/72 inches).

### RightIndent (property)

Data type: **Single**

Gets or sets the right indent of the paragraph in points (1 point corresponds to 1/72 inches).

### LineSpacingRule (property)

Data type: **Long** (TmLineSpacing)

Gets or sets the way in which the line spacing of the paragraph is performed. The possible values are:

```
tmLineSpaceAuto    = 0 ' Automatically (in percent)
tmLineSpaceExactly = 1 ' Exactly (in points)
tmLineSpaceAtLeast = 2 ' At least (in points)
```

### LineSpacing (property)

Data type: **Single**

Gets or sets the line spacing of the paragraph.

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 represents 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 "Automatic 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-line hyphenation
tmHyphenationEvery3Lines = 3 ' 3-line 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 "Page break" property of the paragraph (**True** or **False**).

**ColumnBreakBefore (property)**

Data type: **Boolean**

Gets or sets the "Column break" property of the paragraph (**True** or **False**).

**KeepWithNext (property)**

Data type: **Boolean**

Gets or sets the "Keep with next" property of the paragraph (**True** or **False**).

**KeepTogether (property)**

Data type: **Boolean**

Gets or sets the "Keep together" property of the paragraph (**True** or **False**).

### WidowControl (property)

Data type: **Boolean**

Gets or sets the "Avoid widows/orphans" property of the paragraph (**True** or **False**).

### BorderClearance (property)

Gets or sets the spacing between the paragraph borders and the paragraph text. Each of the four sides can be accessed individually.

Syntax 1 (setting a value):

```
BorderClearance (Index) = n
```

Syntax 2 (reading a value):

```
n = BorderClearance (Index)
```

Parameters:

**Index** (type: **Long** or **TmBorderClearance**) indicates which side of the paragraph should be accessed:

```
tmBorderClearanceLeft      = 1  
tmBorderClearanceRight   = 2  
tmBorderClearanceTop     = 3  
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  
tm.ActiveDocument.Paragraphs(1).BorderClearance(tmBorderClearanceLeft) = 5  
  
' Get the spacing to the left border in the first paragraph  
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 characters from the top of the document.

### 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 the paragraph. You can use this collection to retrieve and 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 top 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:

```
' Display the end position of the first paragraph in the active document
MsgBox tm.ActiveDocument.Paragraphs.Item(1).Range.End
```

### 3 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 character from the top 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 top of the document.

An example for **Start** and **End**:

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").
- **tm.ActiveDocument.Paragraphs.Item(1).Range.End** returns 20.

You can use these values to select a paragraph or a part of it:

```
' Select the first two characters of the first paragraph
tm.ActiveDocument.Selection.SetRange 0, 1

' Select the whole paragraph
With tm.ActiveDocument
    .Selection.SetRange .Paragraphs(1).Range.Start, .Paragraphs(1).Range.End
End With
```

You can select the first four paragraphs of a document as follows:

```
With tm.ActiveDocument
    .Selection.SetRange .Paragraphs(1).Range.Start, .Paragraphs(4).Range.End
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 [Paragraphs](#).

---

## 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:

```
' Activate a drop cap for the first paragraph
tm.ActiveDocument.Paragraphs(1).DropCap.Position = tmDropNormal

' ... 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 caps
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 in points (1 point corresponds to 1/72 inches).

### RightMargin (property)

Data type: **Single**

Gets or sets the right margin of the drop cap in points (1 point corresponds to 1/72 inches).

### TopMargin (property)

Data type: **Single**

Gets or sets the top margin of the drop cap in points (1 point corresponds to 1/72 inches).

### BottomMargin (property)

Data type: **Single**

Gets or sets the bottom margin of the drop cap 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 [Paragraphs](#).

---

## Tables (collection)

Access paths:

- [Application](#) → [Documents](#) → [Item](#) → **Tables**
- [Application](#) → [ActiveDocument](#) → **Tables**

### 1 Description

**Tables** is a collection of all tables in a document. The individual elements of this collection are of the type [Table](#).

### 2 Access to the collection

Each open document has exactly one instance of the **Tables** collection. It is accessed through **Document.Tables**:

```
' Display the number of tables in the active document  
MsgBox tm.ActiveDocument.Tables.Count
```

### 3 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 type [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)

Examples:

```
' Add a 3*3 table to the document
tm.ActiveDocument.Tables.Add 3, 3

' The same, but working with the table as an object
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.

An individual **Table** object exists for each table. 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 collection [Tables](#).

An example:

```
' 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 belonging 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 identified 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 "vertically
centered"
With tm.ActiveDocument
  .Tables(1).Cell(2,3).VerticalAlignment = tmCellVerticalAlignmentCenter
End With

' The same, but with a detour through the Rows collection
With tm.ActiveDocument
  .Tables(1).Rows(2).Cells(3).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 the [Rows](#) collection belonging 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 representing the six border lines of the table. You can use this collection to retrieve and 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 tabs
tmSeparateBySemicolons = 3 ' Columns separated by semicolons
```

If you omit this parameter, the value **tmSeparateByTabs** will be assumed.

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**

### 1 Description

**Rows** is a collection of all table rows in a table. The individual elements of this collection are of the type [Row](#).

## 2 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:

```
' Display the number of rows in the first table of the document  
MsgBox tm.ActiveDocument.Tables(1).Rows.Count
```

## 3 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.

An individual **Row** object exists for each table row. 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 collection [Rows](#). Each table in this collection has exactly one instance.

An example:

```
' Display the height of the second row of the first 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 moved 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 belonging to **Row** 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 belonging to the table which contains all cells of the table row.

**Borders (pointer to collection)**

Data type: **Object**

Returns the [Borders](#) collection representing the five border lines of the table row. You can use this collection to retrieve and 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](#)

## 1 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](#).

## 2 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:

```
' Display the number of cells in the secondnd row of the first table  
MsgBox tm.ActiveDocument.Tables(1).Rows(2).Cells.Count
```

## 3 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, i.e. 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.

An individual **Cell** object exists for each cell. 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 collection [Cells](#). Each row in a table has exactly one instance of this collection.

An example:

```
' Set the width of the fifth cell in the second row of the first 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. Depending on the width type of the cell, the value is expressed either in points or in percent (see **PreferredWidthType** above).

Example:

```
' Set the width for the first cell to 25 percent
tm.ActiveDocument.Tables(1).Rows(1).Cells(1).PreferredWidthType =
tmPreferredWidthPercent
tm.ActiveDocument.Tables(1).Rows(1).Cells(1).PreferredWidth = 25

' 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(1).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, percentual 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. Possible values: 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 a [Borders](#) collection representing the four border lines of the table cell. You can use this collection to retrieve and 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**

**1 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 [Paragraph](#), [Table](#), [Row](#) or [Cell](#).

The individual elements of this collection are of the type [Border](#).

**2 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:

<b>tmBorderTop</b>	= -1	' Top border line
<b>tmBorderLeft</b>	= -2	' Left border line
<b>tmBorderBottom</b>	= -3	' Bottom border line
<b>tmBorderRight</b>	= -4	' Right border line
<b>tmBorderHorizontal</b>	= -5	' Horizontal grid line (only for tables)
<b>tmBorderVertical</b>	= -6	' Vertical grid line (only for tables and table rows)
<b>tmBorderBetween</b>	= -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
tm.ActiveDocument.Tables(1).Rows(2).Borders(tmBorderVertical).Color = smoColorRed

' 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
```

**3 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 the related object:

- When used as a child object of a **Paragraph** object, **Count** returns the value **5**, since paragraphs have five different types of border lines (left, right, top, bottom, between the paragraphs).
- When used as a child object of a **Table** object, **Count** returns **6**, since tables have six different types of border lines (left, right, top, bottom, horizontal gutter, vertical gutter).
- When used as a child object of a **Row** object, **Count** returns **5**, since table rows have five different types of border lines (left, right, top, bottom, vertical gutter).
- When used as a child object of a **Cell** object, **Count** returns **4**, since table cells 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 (such as color and thickness) 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:

<b>tmBorderTop</b>	= -1	' Top border line
<b>tmBorderLeft</b>	= -2	' Left border line
<b>tmBorderBottom</b>	= -3	' Bottom border line
<b>tmBorderRight</b>	= -4	' Right border line
<b>tmBorderHorizontal</b>	= -5	' Horizontal grid line (only for tables)
<b>tmBorderVertical</b>	= -6	' Vertical grid line (only for tables and table rows)
<b>tmBorderBetween</b>	= -7	' Border line between paragraphs (only for paragraphs)

### **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
  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 only be accessed via the [Borders](#) collection of paragraph, table, table row, or table cell. The parameter you pass to the **Borders** collection is the number of the border that you would like to access:

```

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)

```

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
tm.ActiveDocument.Tables(1).Rows(2).Borders(tmBorderVertical).Color = smoColorRed

' 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

```

### 3 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 provide an arbitrary value or use one of the [pre-defined 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, numbered from 0 for black to 15 for light gray. You may use the values shown in the [Index colors](#) 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](#) → [Cell\(x, y\)](#) → [Shading](#)
- [Application](#) → [ActiveDocument](#) → [Tables](#) → [Item](#) → [Cell\(x, y\)](#) → [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 paragraphs, tables, table rows and cells. It is a child object of [Paragraph](#), [Table](#), [Row](#) or [Cell](#).

### 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:

```
' Change the shading of the first paragraph
tm.ActiveDocument.Paragraphs(1).Shading.Texture = smoPatternHalftone

' 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
tm.ActiveDocument.Tables(1).Rows(2).Cells(3).Shading.Texture = smoPatternHalftone
```

### 3 Properties, objects, collections and methods

Properties:

- **Texture**
- **Intensity**
- **ForegroundColor**

- `ForegroundColorIndex`
- `BackgroundColor`
- `BackgroundColorIndex`

Objects:

- `Application` → [Application](#)
- `Parent` → [Paragraph](#), [Table](#), [Row](#) or [Cell](#)

### Texture (property)

Data type: **Long** (`SmoShadePatterns`)

Gets or sets the fill pattern for the shading. The possible values are:

<code>smoPatternNone</code>	= 0
<code>smoPatternHalftone</code>	= 1
<code>smoPatternRightDiagCoarse</code>	= 2
<code>smoPatternLeftDiagCoarse</code>	= 3
<code>smoPatternHashDiagCoarse</code>	= 4
<code>smoPatternVertCoarse</code>	= 5
<code>smoPatternHorzCoarse</code>	= 6
<code>smoPatternHashCoarse</code>	= 7
<code>smoPatternRightDiagFine</code>	= 8
<code>smoPatternLeftDiagFine</code>	= 9
<code>smoPatternHashDiagFine</code>	= 10
<code>smoPatternVertFine</code>	= 11
<code>smoPatternHorzFine</code>	= 12
<code>smoPatternHashFine</code>	= 13

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 from `smoPatternRightDiagCoarse` to `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.

### ForegroundColor (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 provide an arbitrary value or use one of the [pre-defined 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 16 standard colors of TextMaker, numbered from 0 for black to 15 for light gray. You may use the values shown in the [Index colors](#) 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 provide an arbitrary value or use one of the [pre-defined 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, numbered from 0 for black to 15 for light gray. You may use the values shown in the [Index colors](#) 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.

**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**

```
Sub Main
    Dim tm as Object

    Set tm = CreateObject("TextMaker.Application")
    tm.Visible = True

    With tm.ActiveDocument.Paragraphs.Item(1)
```

```

        .Shading.Texture = smoPatternHorzFine
        .Shading.BackgroundColor = smoColorAqua
    End With

    Set tm = Nothing
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 open document has exactly one instance of the **FormFields** collection. It is accessed through **Document.FormFields**:

```

' 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, i.e. 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:

```
' 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.

An individual **FormField** object exists for each form 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 collection [FormFields](#). Each document has exactly one instance of this collection.

An example:

```
' Show the name of the first form object in the document
MsgBox tm.ActiveDocument.FormFields(1).Name
```

Text fields, check boxes 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.
- Properties that are *type-specific* (for example, only selection lists possess a list of all their elements) can be found in the [TextInput](#), [CheckBox](#) and [DropDown](#) child objects. These properties are documented for each child object.

## 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 on the **Properties** tab of the dialog box with the properties of an object.

**Visible (property)**

Data type: **Boolean**

Gets or sets the "Visible" setting of the object (**True** or **False**). Corresponds to the "Visible" option on the **Properties** tab of the dialog box with the properties of an object.

**Printable (property)**

Data type: **Boolean**

Gets or sets the "Printable" setting of the object (**True** or **False**). Corresponds to the "Printable" option on the **Properties** tab of the dialog box with the properties of an object.

**Locked (property)**

Data type: **Boolean**

Gets or sets the "Locked" setting of the object (**True** or **False**). Corresponds to the "Locked" option on the **Properties** tab of the dialog box with the properties of an object.

**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 on the **Properties** tab of the dialog box with the properties of an object.

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

Data type: **Long** (TmFieldType)

Returns the type of the object as a numeric value. The possible values are:

```
tmFieldFormTextInput      = 1   ' Text field
tmFieldFormCheckBox       = 10  ' Check box
tmFieldFormDropDown       = 11  ' Drop-down list
```

**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 [FormField](#).

---

## 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 with the ribbon command **Insert | Objects group | Form object | Text field**;
- a text frame, created with the ribbon command **Insert | Objects group | Text frame**; or
- a drawing, to which text has been added using the **Add text** command.

**TextInput** is a child object of [FormField](#).

### 2 Access to the object

The **TextInput** object can be accessed solely through its parent object [FormField](#).

Only if the property **TextInput.Valid** returns the value **True**, the form object really represents a text field – and not a check box or a drop-down list.

An example:

```
' Check the type of the first form object.  
' If it is a TextInput object, output its text.  
  
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](#)

**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 "Locked" option on the **Properties** tab of the dialog box with the properties of an object.

Note that TextMaker locks the text field against 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**

**1 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 [FormField](#).

## 2 Access to the object

The **CheckBox** object can be accessed solely through its parent object [FormField](#).

Only if the property **CheckBox.Valid** returns the value **True**, the form object really represents a check box – and not a text field or a drop-down list.

An example:

```
' Check the type of the first form object.  
' If it is a CheckBox object,  
' output 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 check box is checked or not (**True** or **False**).

### **Text (property)**

Data type: **String**

Gets or sets the text of the check box.

### **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](#) → [FormFields](#) → [Item](#) → **DropDown**
- [Application](#) → [ActiveDocument](#) → [FormFields](#) → [Item](#) → **DropDown**

### 1 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 [FormField](#).

### 2 Access to the object

The **DropDown** object can be accessed solely through its 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 check box.

An example:

```
' Check the type of the first form object. If it is a  
' DropDown object, display the number of the selected item.
```

```
If tm.ActiveDocument.FormFields(1).DropDown.Valid Then  
  MsgBox tm.ActiveDocument.FormFields(1).DropDown.Value  
End If
```

### 3 Properties, objects, collections and methods

Properties:

- **Value** (default property)
- **Valid** R/O
- **ListEntries**

Objects:

- **Application** → [Application](#)

- Parent → [FormField](#)

### **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 with all entries from the selection list. You can use this collection to read and edit the entries in the selection list (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**

### **1 Description**

**ListEntries** is a collection of all list entries of a [DropDown](#) object. This allows you to view and edit the individual entries in a selection 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 **DropDown.ListEntries**:

```
' 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, i.e. 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:

```
' 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:

```
Add Name
```

Parameters:

**Name** (type: **String**) specifies the string to be added.

Return type:

**Object** (a [ListEntry](#) object that represents the new entry)

Example:

```
' 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:

```
Clear
```

Parameters:

none

Return type:

none

Example:

```
' Delete all entries from the first form field in the document
tm.ActiveDocument.FormFields(1).DropDown.ListEntries.Clear
```

## 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.

An individual **ListEntry** object exists for each entry in a drop-down list. 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 **ListEntry** objects can be accessed solely through enumerating the elements of the collection [ListEntries](#). Each selection 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"
```

Note: 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**

## 1 Description

The **Windows** collection contains all open document windows. The individual elements of this collection are of the type [Window](#).

## 2 Access to the collection

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

```
' 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
```

## 3 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, i.e. 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.tmdx" (if currently open)
MsgBox tm.Application.Windows.Item("Test.tmdx").FullName

' You can also use the full name with path
```

```
MsgBox tm.Application.Windows.Item("c:\Documents\Test.tmdx").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.

An individual **Window** object exists for each document window. 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 open document windows are managed in the **Application.Windows** collection (type: [Windows](#)):

```
' 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**:

```
' Show the name of the active document window
MsgBox tm.Application.ActiveWindow.Name
```

- **Window** is the **Parent** of the **View** object:

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

```
MsgBox tm.Application.ActiveWindow.View.Parent.Name
```

- 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
```

### 3 Properties, objects, collections and methods

Properties:

- **FullName** R/O
- *Name* R/O
- **Path** R/O
- **Left**
- **Top**
- **Width**
- **Height**
- **WindowState**
- **DisplayHorizontalRuler**
- **DisplayVerticalRuler**
- **DisplayRulers**
- **DisplayHorizontalScrollBar**
- **DisplayVerticalScrollBar**

Objects:

- **Document** → [Document](#)
- **View** → [View](#)
- **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:\Letters\Smith.tmdx").

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

Data type: **String**

Returns the file name of the document opened in the window (e.g., "Smith.tmdx").

#### **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 document window, measured in screen pixels.

#### **Height (property)**

Data type: **Long**

Gets or sets the height of the document 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. With this you can read and set numerous settings of your document.

**View (pointer to object)**

Data type: **Object**

Returns the [view](#) object from the document window. You can use this to read and set various settings for the screen display.

**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:

```
Activate
```

Parameters:

none

Return type:

none

Example:

```
' Activate the first document window  
tm.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 indicate it (if necessary). The possible values for **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 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 a range of settings for the presentation on screen. It is a child object of the **Window** object.

Note: The presentation settings provided by the **View** object are specific to the document window – i.e., each document window has its own settings. The global 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:

```
' 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:

- **Zoom** → [Zoom](#)
- **Application** → [Application](#)
- **Parent** → [Window](#)

**Type (property)**

Data type: **Long** (TmViewType)

Gets or sets the view type of the document window. The possible values are:

```
tmPrintView      = 0 ' Normal view
tmMasterView     = 1 ' Master page view
tmNormalView     = 2 ' Concept view
tmOutlineView    = 3 ' Outline view
```

**Mode (property)**

Data type: **Long** (TmViewMode)

Gets or sets the view mode of the document window. The possible values are:

```
tmViewModeText  = 0 ' Editing mode
tmViewModeObject = 1 ' Object mode
```

If you set this property to **tmViewModeObject** while the document window view (see above) is set to **tmNormalView** (ribbon command **View** group | **Views** | **Concept**) or **tmOutlineView** (ribbon command **View** | **Views** group | **Outline**), TextMaker automatically switches to **tmPrintView** because object mode is not available in these views.

**FieldShading (property)**

Data type: **Long** (TmFieldShading)

Gets or sets the setting "Shade fields" on the **View** tab in the dialog box of the ribbon command **File** | **Properties**. The possible values are:

```
tmFieldShadingNever = 0 ' Do not shade fields in gray
tmFieldShadingAlways = 1 ' Shade fields in gray
```

**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:

```
tmRightMargin = 0 ' right
```

```
tmLeftMargin    = 1 ' left
tmOuterMargin   = 2 ' outside
tmInnerMargin   = 3 ' inside
```

### 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 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**).

### ShowTabs (property)

Data type: **Boolean**

Gets or sets the setting of the document window whether tab stops should be displayed with an arrow (→) or not (**True** or **False**).

#### **ShowAll (property)**

Data type: **Boolean**

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**).

#### **ShowBookmarks (property)**

Data type: **Boolean**

Gets or sets the setting of the document window whether bookmarks should be shown or not (**True** or **False**).

#### **ShowTextBoundaries (property)**

Data type: **Boolean**

Gets or sets the setting of the document whether the page borders should be displayed as dotted lines or not (**True** or **False**).

#### **WrapToWindow (property)**

Data type: **Boolean**

Gets or sets the setting of the document window whether the text should be wrapped at the window border or not (**True** or **False**).

#### **Zoom (pointer to object)**

Data type: **Object**

Returns the [Zoom](#) object which contains the zoom level setting of the document window.

#### **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 [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 this has in turn exactly one instance of the **Zoom** object. The latter is accessed through the object pointer **Zoom** in the [View](#) object:

```
' Zoom the document window to 140%  
tm.ActiveWindow.View.Zoom.Percentage = 200
```

### 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%  
tm.ActiveWindow.View.Zoom.Percentage = 140
```

#### 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 [View](#).

---

## 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 TextMaker. It is accessed directly through the **Application.RecentFiles** object:

```
' 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
```

### 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 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: the number of recently opened files that 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, 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:

<b>tmFormatDocument</b>	= 0	' TextMaker document
<b>tmFormatTemplate</b>	= 1	' TextMaker document template
<b>tmFormatWinWord97</b>	= 2	' Microsoft Word 97 and 2000
<b>tmFormatOpenDocument</b>	= 3	' OpenDocument, OpenOffice.org, StarOffice
<b>tmFormatRTF</b>	= 4	' Rich Text Format
<b>tmFormatPocketWordPPC</b>	= 5	' Pocket Word for Pocket PCs
<b>tmFormatPocketWordHPC</b>	= 6	' Pocket Word for Handheld PCs (Windows CE)
<b>tmFormatPlainTextAnsi</b>	= 7	' Text file with Windows character set
<b>tmFormatPlainTextDOS</b>	= 8	' Text file with DOS character set
<b>tmFormatPlainTextUnicode</b>	= 9	' Text file with Unicode character set
<b>tmFormatPlainTextUTF8</b>	= 10	' Text file with UTF8 character set
<b>tmFormatHTML</b>	= 12	' HTML document
<b>tmFormatWinWord6</b>	= 13	' Microsoft Word 6.0
<b>tmFormatPlainTextUnix</b>	= 14	' Text file for UNIX, Linux, FreeBSD
<b>tmFormatWinWordXP</b>	= 15	' Microsoft Word XP and 2003
<b>tmFormatTM2006</b>	= 16	' TextMaker 2006 document
<b>tmFormatOpenXML</b>	= 17	' Microsoft Word 2007 and later
<b>tmFormatTM2008</b>	= 18	' TextMaker 2008 document
<b>tmFormatOpenXMLTemplate</b>	= 22	' Microsoft Word document template 2007 and later
<b>tmFormatWinWordXPTemplate</b>	= 23	' Microsoft Word document template XP and 2003
<b>tmFormatTM2012</b>	= 27	' TextMaker 2012 document
<b>tmFormatTM2016</b>	= 28	' TextMaker 2016 document
<b>tmFormatTM2016Template</b>	= 29	' TextMaker 2016 document template

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

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 added document)

Example:

```
' 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 parentheses!)
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.

An individual **RecentFile** object exists for each recently opened file. 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 collection [RecentFiles](#). You can access it through Applications.**RecentFiles**.

```
' 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.tmdx").

### Name (property, R/O)

Data type: **String**

Returns the name of the document (e.g. "Smith.tmdx").

### Path (property, R/O)

Data type: **String**

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 related document and returns it as a [Document](#) object.

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**

### 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 TextMaker. It is accessed through **Application.FontNames**:

```
' 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 TextMaker – in other words: the number of fonts installed in Windows.

### Item (pointer to object)

Data type: **Object**

Returns an individual [FontName](#) object, i.e. 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 font of the fonts installed in Windows. An individual **FontName** object exists for each installed font.

### 2 Access to the object

The individual **FontName** objects can be accessed solely through enumerating the elements of the collection [FontNames](#). You can access it through Applications.**FontNames**.

```
' 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:

```
smoAnsiCharset = 0 ' normal character set
smoSymbolCharset = 2 ' symbol font
```

**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](#).

---

## 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 contains the following sections:

- [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 program 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 (see below for details):

1. Declare a variable of type **Object**:

```
Dim pm as Object
```

2. Make a connection to PlanMaker via OLE Automation (PlanMaker will be launched automatically if it is not already running):

```
Set pm = CreateObject("PlanMaker.Application")
```

3. Set the property **Application.Visible** to **True** so that PlanMaker becomes visible:

```
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:

```
Set pm = Nothing
```

This 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.

```
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:

```
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:

```
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:

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

But you can also change the content of this property:

```
pm.Application.Left = 200
```

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

```
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, there are *methods*, 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:

```
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:

```
pm.Workbooks.Add ' Add a document to the collection of open documents
```

#### Call as function:

```
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:

```
pm.Application.RecentFiles.Add "Test.pmdx"
```

#### Call as function:

```
Dim x as Object  
Set x = pm.Application.RecentFiles.Add("Test.pmdx") ' 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, PlanMaker has an **Options** object that lets you retrieve and set many fundamental program settings:

```
pm.Application.Options.CreateBackup = True  
MsgBox "Overwrite mode activated? " & pm.Application.Options.Overtyp
```

---

## 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. The more simple way is through the **Item** property that is part of every collection:

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

' Close the (open) document "Test.pmdx":
pm.Application.Workbooks.Item("Test.pmdx").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 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 **Item**, 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 a matching object type for their individual entries. The collection **Windows**, for example, an individual entry that is returned by **Item** is of the type **Window** – note the use of the singular! One entry of the **Workbooks** collection is called **Workbook**, and an entry of the **RecentFiles** collection is called **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** statement:

```
' 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:

```
For i = 1 To pm.Application.Workbooks.Count
    MsgBox pm.Application.Workbooks.Item(i).Name
Next i
```

### Additional properties and methods of collections

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:

```
pm.Application.Workbooks.Add      ' create 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 the With statement

The first shortcut is to use the **With** statement when addressing *multiple* 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** statement:

```
With pm.Application
    .Left = 100
    .Top = 50
    .Width = 500
    .Height = 300
    MsgBox .Options.CreateBackup
End With
```

### Save time by 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      ' displays 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 statements 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 **Document**, 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:

- 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:

Name	Type	Description
<a href="#"><u>Application</u></a>	Object	"Root object" of PlanMaker
<a href="#"><u>Options</u></a>	Object	Global options
<a href="#"><u>UserProperties</u></a>	Collection	Collection of all components of the user's address
<a href="#"><u>UserProperty</u></a>	Object	An individual component of the user's address
<a href="#"><u>CommandBars</u></a>	Collection	Collection of all toolbars (toolbars work only in classic mode; they do not work with ribbons)
<a href="#"><u>CommandBar</u></a>	Object	A single toolbar (toolbars work only in classic mode; they do not work with ribbons)
<a href="#"><u>AutoCorrect</u></a>	Object	Automatic text correction and SmartText
<a href="#"><u>AutoCorrectEntries</u></a>	Collection	Collection of all SmartText entries
<a href="#"><u>AutoCorrectEntry</u></a>	Object	An individual SmartText entry
<a href="#"><u>Workbooks</u></a>	Collection	Collection of all open documents (workbooks)
<a href="#"><u>Workbook</u></a>	Object	An individual open document
<a href="#"><u>DocumentProperties</u></a>	Collection	Collection of all document properties of a document

<b>Name</b>	<b>Type</b>	<b>Description</b>
<a href="#"><u>DocumentProperty</u></a>	Object	An individual document property
<a href="#"><u>Sheets</u></a>	Collection	Collection of all worksheets of a document
<a href="#"><u>Sheet</u></a>	Object	An individual worksheet of a document
<a href="#"><u>PageSetup</u></a>	Object	The page settings of a worksheet
<a href="#"><u>Range</u></a>	Object	A range of cells in a worksheet
<a href="#"><u>Rows</u></a>	Collection	Collection of all rows in a worksheet or range
<a href="#"><u>Columns</u></a>	Collection	Collection of all columns in a worksheet or range
<a href="#"><u>NumberFormatting</u></a>	Object	The number formatting of a range
<a href="#"><u>Font</u></a>	Object	The character formatting of a range or conditional formatting
<a href="#"><u>Borders</u></a>	Collection	Collection of all border lines of a range or conditional formatting
<a href="#"><u>Border</u></a>	Object	An individual border line
<a href="#"><u>Shading</u></a>	Object	The shading of a range or conditional formatting
<a href="#"><u>Validation</u></a>	Object	The input validation settings of a range
<a href="#"><u>AutoFilter</u></a>	Object	The AutoFilter of a worksheet
<a href="#"><u>Filters</u></a>	Collection	Collection of all columns in an AutoFilter
<a href="#"><u>Filter</u></a>	Object	An individual column in an AutoFilter
<a href="#"><u>Windows</u></a>	Collection	Collection of all open document windows
<a href="#"><u>Window</u></a>	Object	An individual document window
<a href="#"><u>RecentFiles</u></a>	Collection	Collection of all recently opened files, as listed in the File menu
<a href="#"><u>RecentFile</u></a>	Object	An individual recently opened file
<a href="#"><u>FontNames</u></a>	Collection	Collection of all installed fonts
<a href="#"><u>FontName</u></a>	Object	An individual installed font

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. It is available during the whole time that PlanMaker is running and accessed directly through the object variable returned by the **CreateObject** function:

```
Set pm = CreateObject("PlanMaker.Application")
MsgBox pm.Application.Name
```

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

```
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, i.e. "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 "1000".

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

Data type: **String**

Returns a string corresponding to the bit version of the program: "32" for the 32-bit version, "64" for the 64-bit version of PlanMaker.

**Visible (property)**

Data type: **Boolean**

Gets or sets the visibility of the program window:

```
pm.Application.Visible = True ' PlanMaker becomes visible  
pm.Application.Visible = False ' PlanMaker becomes 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.pmdx").

**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 recalculated 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 it is a global setting in Excel. 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 recalculated when it is saved.

Notes:

- 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 kept up-to-date anyway.
- PlanMaker allows you to apply this setting *per document*, whereas it is a global setting in Excel. This property is supported by PlanMaker only for compatibility reasons. It is recommended to use the identically

named property **CalculateBeforeSave** 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.

### 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

```

Notes:

- PlanMaker allows you to apply this setting *per document*, whereas it is a global setting in Excel. This property is supported by PlanMaker only for compatibility reasons. It is recommended to use the identically named property **DisplayCommentIndicator** 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.

### EditDirectlyInCell (property)

Data type: **Boolean**

Gets or sets the setting whether cells can be edited directly in the spreadsheet or only in the Edit bar displayed above the spreadsheet.

### MoveAfterReturn (property)

Data type: **Boolean**

Gets or sets the setting whether the cell frame should advance to another cell when the user presses the Enter key.

If this property is set to **True**, the **MoveAfterReturnDirection** property (see there) will be automatically set to **pmDown**. However, you can later choose a different direction.

### MoveAfterReturnDirection (property)

Data type: **Long** (PmDirection)

Gets or sets the direction into which the cell frame should move when the user presses the Enter key. The possible values are:

```

pmDown           = 0 ' down

```

```
pmUp      = 1 ' up
pmToRight = 2 ' right
pmToLeft  = 3 ' left
```

### PromptForSummaryInfo (property)

Data type: **Boolean**

Gets or sets the setting "Ask for document info when saving", which can be found in PlanMaker on the **Files** tab in the dialog box of the ribbon command **File | Options**.

### WarningOnError (property)

Data type: **Boolean**

Gets or sets the setting "Warning if a formula contains errors", which can be found in PlanMaker on the **Edit** tab in the dialog box of the ribbon command **File | Options**.

### 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 name and address of the user.

### CommandBars (pointer to object)

Data type: **Object**

Returns the [CommandBars](#) object that you can use to access the toolbars of PlanMaker.

Note: Toolbars work only in classic mode. They do not work with ribbons.

### 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 current document window. You can use this object to read and edit the formatting and content 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 single cell, even if a range of cells is selected in the worksheet. After all, selected 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.ActiveWorkbook.ActiveSheet.Selection.Font.Size = 14
pm.Application.Selection.Font.Size = 14
```

**Range (pointer to object)**

Data type: **Object**

Based on the parameters passed, creates a [Range](#) object that refers to the active worksheet of the current document and returns it. You can use this object to access the cells in a range and, for example, get or set their values.

Syntax 1:

```
obj = Range(Cell1)
```

Syntax 2:

```
obj = Range(Cell1, Cell2)
```

Parameters:

**Cell1** (type: **String**) specifies either according to syntax 1 a cell range (then **Cell2** must be omitted) or according to syntax 2 the upper left corner of a range (then parameter **Cell2** specifies the lower right corner of the 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")         ' Column A as a whole
Range("3:3")         ' Row 3 as a whole
Range("Summer")     ' Named range "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.ActiveWorkbook.ActiveSheet.Range("A1:B5").Value = 42
pm.Application.Range("A1:B5").Value = 42
```

**Cells (pointer to object)**

Data type: **Object**

Returns a [Range](#) object that contains all cells of the current worksheet. This is useful for two applications:

- To apply an operation (e.g., formatting) to every cell of the worksheet:

```
' Make the whole active worksheet red
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:

```
pm.Application.ActiveSheet.Cells(1, 1).Font.Size = 14
pm.Application.Cells(1, 1).Font.Size = 14
```

### Application (pointer to 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 open 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.ActiveWorkbook.ActiveSheet.Columns.Count  
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.ActiveWorkbook.ActiveSheet.Rows.Count  
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 type:

**Single**

Example:

```
' Set the top margin of the active worksheet to 3cm  
pm.ActiveSheet.PageSetup.TopMargin = pm.Application.CentimetersToPoints (3)
```

### 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 type:

## Single

Example:

```
' Set the top margin of the active worksheet to 30mm  
pm.ActiveSheet.PageSetup.TopMargin = 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:

```
InchesToPoints (Inches)
```

Parameters:

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

Return type:

**Single**

Example:

```
' Set the bottom margin of the active worksheet to 1 inch  
pm.ActiveSheet.PageSetup.BottomMargin = 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:

```
PicasToPoints (Picas)
```

Parameters:

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

Return type:

**Single**

Example:

```
' Set the bottom margin of the active worksheet to 6 picas  
pm.ActiveSheet.PageSetup.BottomMargin = 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 type:

**Single**

Example:

```
' Set the bottom margin of the active worksheet to 6 picas  
pm.ActiveSheet.PageSetup.BottomMargin = pm.Application.LinesToPoints (6)
```

### **Activate (method)**

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

Syntax:

```
Activate
```

Parameters:

none

Return type:

none

Example:

```
' Bring PlanMaker to the foreground  
pm.Application.Activate
```

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

### **Calculate (method)**

Recalculates *all* currently open documents (similar to the ribbon command **Formula | Update** group | **Update data | Update calculations** in PlanMaker, except that the ribbon command only recalculates the active workbook).

Syntax:

```
Calculate
```

Parameters:

none

Return type:

none

Example:

```
' Recalculate all open workbooks (documents)
pm.Application.Calculate
```

## Quit (method)

Ends the program.

Syntax:

**Quit**

Parameters:

none

Return type:

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 ribbon command **File | Options** 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 **Application.Options**:

```
Set pm = CreateObject("PlanMaker.Application")
pm.Application.Options.EnableSound = True
```

### 3 Properties, objects, collections and methods

Properties:

- **CheckSpellingAsYouType**
- **CreateBackup**
- **DefaultFilePath**
- **DefaultTemplatePath**
- **EnableSound**
- **Overtyp**
- **SaveInterval**
- **SavePropertiesPrompt**
- **DefaultFileFormat**

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 ribbon commands **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 ribbon command **File | New** 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**).

**DefaultFileFormat (property)**

Data type: **Long** (PmDefaultFileFormat)

Gets or sets the standard file format in which PlanMaker saves newly created documents. Possible values:

<code>pmDefaultFileFormatPlanMaker</code>	<code>= 0</code>	<code>' PlanMaker (.pmdx)</code>
<code>pmDefaultFileFormatExcelXP</code>	<code>= 1</code>	<code>' Microsoft Excel XP/2003 (.xls)</code>
<code>pmDefaultFileFormatOpenXML</code>	<code>= 3</code>	<code>' Microsoft Office Open XML (.xlsx)</code>
<code>pmDefaultFileFormatPlanMaker2012</code>	<code>= 4</code>	<code>' PlanMaker 2012 (.pmd)</code>

**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

### 1 Description

The **UserProperties** collection contains all components of the user's address (as entered on the **General** tab in the dialog box of the ribbon command **File | Options**).

The individual elements of this collection are of the type [UserProperty](#).

### 2 Access to the collection

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

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

### 3 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 components in the user's address (name, street, etc.).

This value is constantly 18, since there are exactly 18 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 address (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:

<b>smoUserDataTitle</b>	= 1	' Title
<b>smoUserDataName</b>	= 2	' Name
<b>smoUserDataInitials</b>	= 3	' Initials
<b>smoUserDataCompany</b>	= 4	' Company
<b>smoUserDataDepartment</b>	= 5	' Department
<b>smoUserDataAddress1</b>	= 6	' Address field 1
<b>smoUserDataAddress2</b>	= 7	' Address field 2
<b>smoUserDataZip</b>	= 8	' Postal code
<b>smoUserDataCity</b>	= 9	' City
<b>smoUserDataCountry</b>	= 10	' Country
<b>smoUserDataPhone1</b>	= 11	' Phone 1
<b>smoUserDataPhone2</b>	= 12	' Phone 2
<b>smoUserDataPhone3</b>	= 13	' Phone 3
<b>smoUserDataFax</b>	= 14	' Fax
<b>smoUserDataEmail1</b>	= 15	' E-mail address 1
<b>smoUserDataEmail2</b>	= 16	' E-mail address 2
<b>smoUserDataEmail3</b>	= 17	' E-mail address 3
<b>smoUserDataWebsite</b>	= 18	' Website

Examples:

```
' Show the name of the user
MsgBox pm.Application.UserProperties.Item(1).Value

' Change e-mail address 2 to test@example.com
With pm.Application
    .UserProperties.Item(smoUserDataEmail2).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 address (for example, the street or the postal code).

An individual **UserProperty** object exists 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:

```
' Show the contents of the first address element (the name of the user)
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:

```
Sub Example()
    Set pm = CreateObject("PlanMaker.Application")
    pm.UserProperties(smoUserDataCompany).Value = "ACME Corporation"
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**

### 1 Description

The **CommandBars** collection contains all of PlanMaker's toolbars. The individual elements of this collection are of the type [CommandBar](#).

Note: Toolbars work only in classic mode. They do not work with ribbons.

### 2 Access to the collection

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

```
' 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:

- **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.

Note: Toolbars work only in classic mode. They do not work with ribbons.

**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 ribbon command **Files | Options**.

**Item (pointer to object)**

Data type: **Object**

Returns an individual [CommandBar](#) object that you can use to access an individual toolbar.

Note: Toolbars work only in classic mode. They do not work with ribbons.

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
pm.Application.CommandBars.Item(1).Visible = False

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

Note: It is not advisable to hard-code the names of toolbars in your program, since these names are different in each language that PlanMaker's user interface supports. For example, if you are using PlanMaker in English, the format bar is not called "Format", but "Formatting".

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 ' Picture 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 in PlanMaker.

An individual **CommandBar** object exists for each toolbar. If you create new toolbars or delete them, the respective **CommandBar** objects will be created or deleted dynamically.

Note: Toolbars work only in classic mode. They do not work with ribbons.

### 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:

```
' 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.

Note: Toolbars work only in classic mode. They do not work with ribbons.

Example:

```
' 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.

Note: Toolbars work only in classic mode. They do not work with ribbons.

The following example makes the "Formatting" toolbar invisible:

```
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 through **Application.AutoCorrect**:

```
' 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 of PlanMaker's SmartText entries.

---

## AutoCorrectEntries (collection)

Access path: [Application](#) → [AutoCorrect](#) → **Entries**

## 1 Description

The **AutoCorrectEntries** collection contains all SmartText entries defined in PlanMaker. 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 **Application.AutoCorrect.Entries**:

```
' 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** → [AutoCorrect](#)

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 requested 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 of 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:

```
' 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".

An individual **AutoCorrectEntry** object exists for each SmartText entry. 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:

```
' 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 from the [AutoCorrectEntries](#) collection.

Syntax:

```
Delete
```

Parameters:

```
none
```

Return type:

```
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 open 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 **Application.Workbooks**:

```
' Show the number of open documents
MsgBox pm.Application.Workbooks.Count

' Show the name of the first open 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 [Workbook](#) objects in the collection, i.e. the number of the currently open documents.

### Item (pointer to object)

Data type: **Object**

Returns an individual [Workbook](#) object, i.e. 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:

```
' Show the name of the first document
MsgBox pm.Application.Workbooks.Item(1).FullName

' Show the name of the document "Test.pmdx" (if currently open)
MsgBox pm.Application.Workbooks.Item("Test.pmdx").FullName

' You can also use the full name with path
MsgBox pm.Application.Workbooks.Item("c:\Documents\Test.pmdx").FullName
```

### Application (pointer to object)

Returns the [Application](#) object.

### Parent (pointer to object)

Returns the parent object, i.e. [Application](#).

### Add (method)

Creates a new empty document, based either on the standard document template **Normal.pmvx** 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.pmvx** 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 **.pmvx**, it will be automatically added.

Return type:

**Object** (a [Workbook](#) object that represents the new document)

Example:

```
Sub Example()
    Dim pm as Object
    Dim newDoc as Object

    Set pm = CreateObject("PlanMaker.Application")
    pm.Visible = True
    Set newDoc = pm.Workbooks.Add
    MsgBox newDoc.Name
End Sub
```

You can use the **Workbook** object returned by the **Add** method like any other document. You can also ignore the return value of **Add** and get the new document from **ActiveWorkbook**.

## 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:

<b>pmFormatDocument</b>	= 0	' PlanMaker document
<b>pmFormatTemplate</b>	= 1	' PlanMaker document template
<b>pmFormatExcel97</b>	= 2	' Excel 97/2000/XP
<b>pmFormatExcel5</b>	= 3	' Excel 5.0/7.0
<b>pmFormatExcelTemplate</b>	= 4	' Excel document template
<b>pmFormatSYLK</b>	= 5	' Sylk
<b>pmFormatRTF</b>	= 6	' Rich Text Format
<b>pmFormatTextMaker</b>	= 7	' TextMaker (= RTF)
<b>pmFormatHTML</b>	= 8	' HTML document
<b>pmFormatdBaseDOS</b>	= 9	' dBASE database with DOS character set
<b>pmFormatdBaseAnsi</b>	= 10	' dBASE database with Windows character set
<b>pmFormatDIF</b>	= 11	' Text file with Windows character set
<b>pmFormatPlainTextAnsi</b>	= 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 assumed.

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 type:

**Object** (a [Workbook](#) object which represents the opened document)

Examples:

```

' Open a document
pm.Workbooks.Open "c:\docs\test.pmdx"

' Open a document only for reading
pm.Documents.Open "c:\docs\Test.pmdx", True

```

## Close (method)

Closes all currently open 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 for **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 all open documents without saving them
pm.Workbooks.Close smoDoNotSaveChanges
```

---

## Workbook (object)

Access paths:

- [Application](#) → [Workbooks](#) → [Item](#)
- [Application](#) → [ActiveWorkbook](#)
- [Application](#) → [Windows](#) → [Item](#) → [Workbook](#)
- [Application](#) → [ActiveWindow](#) → [Workbook](#)

### 1 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.

### 2 Access to the object

The individual **Workbook** objects can be accessed in the following ways:

- All open documents are managed in the collection **Application.Workbooks** (type: [Workbooks](#)):

```
' Show the names of all open 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 **Application.ActiveWorkbook**:

```
' Show the name of the current document
MsgBox pm.Application.ActiveWorkbook.Name
```

- **Workbook** is the **Parent** of the **Sheets** object, a collection of all worksheets in a document:

```
' 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:

```
' Access the active document through the active document window  
MsgBox pm.Application.ActiveWindow.Workbook.Name
```

### 3 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.pmdx").

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

Data type: **String**

Returns the path and name of the document (e.g., "c:\Documents\Smith.pmdx").

**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.

**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 text 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 **EnableCaretMovement** is **True**, the text 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 Basic 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 formattings, you can set the **ManualApply** property to **True**. In this case, PlanMaker accumulates all formatting commands until you invoke 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 have 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 recalculated 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 recalculated when it is saved.

This property has an effect only if the document is set to be recalculated manually. If the **Calculation** property (see there) is set to **pmCalculationAutomatic**, all calculations will always be kept up-to-date anyway.

### CalculateBeforeCopying (property)

Data type: **Boolean**

Gets or sets the setting whether the document should be recalculated before copying or cutting cells.

This property has an effect only if the document is set to be recalculated manually. If the **Calculation** property (see there) is set to **pmCalculationAutomatic**, all calculations will always be kept up-to-date anyway.

### CalculateBeforePrinting (property)

Data type: **Boolean**

Gets or sets the setting whether the document should be recalculated before printing.

This property has an effect only if the document is set to be recalculated manually. If the **Calculation** property (see there) is set to **pmCalculationAutomatic**, all calculations will always be kept 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:

```
' 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" on the **Calculate** tab in the dialog box of the ribbon command **File | Properties**.

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 "Maximum iterations" on the **Calculate** tab in the dialog box of the ribbon command **File | Properties**. This only has an effect if the **Iteration** property (see there) is set to **True**.

**MaxChange (property)**

Data type: **Long**

Gets or sets the setting "Maximum change" (in iterations) on the **Calculate** tab in the dialog box of the ribbon command **File | Properties**. This only has an effect if the **Iteration** property (see there) is set to **True**.

**ShowGuideLinesForTextFrames (property)**

Data type: **Boolean**

Gets or sets the setting "Guidelines for text frames" on the **Options** tab in the dialog box of the ribbon command **File | Properties**.

**ShowHiddenObjects (property)**

Data type: **Boolean**

Gets or sets the setting "Show hidden objects" on the **Options** tab in the dialog box of the ribbon command **File | Properties**.

**RoundFinalResults (property)**

Data type: **Boolean**

Gets or sets the setting "Round final result" on the **Calculate** tab in the dialog box of the ribbon command **File | Properties**.

**RoundIntermediateResults (property)**

Data type: **Boolean**

Gets or sets the setting "Round intermediate results" on the **Calculate** tab in the dialog box of the ribbon command **File | Properties**.

### **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 **Visible** is True for the document) and sets the focus to the document window.

Syntax:

```
Activate
```

Parameters:

none

Return type:

none

Example:

```
' Bring the first document in the Workbooks collection to the front  
pm.Workbooks(1).Activate
```

### Calculate (method)

Recalculates the document (corresponds to the ribbon command **Formulas | Update** group | **Update data | Update calculations** in PlanMaker).

Syntax:

**Calculate**

Parameters:

none

Return type:

none

Example:

```
' Recalculate the first document in the Workbooks collection  
pm.Workbooks(1).Calculate
```

### 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 for **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 without saving
pm.ActiveWorkbook.Close smoDoNotSaveChanges
```

### Save (method)

Saves the document.

Syntax:

**Save**

Parameters:

none

Return type:

none

Example:

```
' Save the active document
pm.ActiveWorkbook.Save
```

### SaveAs (method)

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

Syntax:

**SaveAs** FileName, [FileFormat], [Delimiter], [TextMarker]

Parameters:

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

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

<b>pmFormatDocument</b>	= 0	' PlanMaker document
<b>pmFormatTemplate</b>	= 1	' PlanMaker document template
<b>pmFormatExcel97</b>	= 2	' Excel 97/2000/XP
<b>pmFormatExcel5</b>	= 3	' Excel 5.0/7.0
<b>pmFormatExcelTemplate</b>	= 4	' Excel document template
<b>pmFormatSYLK</b>	= 5	' Sylk
<b>pmFormatRTF</b>	= 6	' Rich Text Format
<b>pmFormatTextMaker</b>	= 7	' TextMaker (= RTF)
<b>pmFormatHTML</b>	= 8	' HTML document
<b>pmFormatdBaseDOS</b>	= 9	' dBASE database with DOS character set
<b>pmFormatdBaseAnsi</b>	= 10	' dBASE database with Windows character set
<b>pmFormatDIF</b>	= 11	' Text file with Windows character set
<b>pmFormatPlainTextAnsi</b>	= 12	' Text file with Windows character set
<b>pmFormatPlainTextDOS</b>	= 13	' Text file with DOS character set
<b>pmFormatPlainTextUnix</b>	= 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
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 assumed.

**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 type:

none

Example:

```

' Save the current document under a new name in Excel 97 format
pm.ActiveWorkbook.SaveAs "c:\docs\test.xls", pm.FormatExcel97

```

## PrintOut (method)

Prints the document.

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:

none

Example:

```

' Print 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. These include, for example, the title, author, number of cells filled with content, etc.

The individual elements of this collection are of the type [DocumentProperty](#).

### 2 Access to the collection

Each open document has exactly one **DocumentProperties** collection. It is accessed through **Workbook.BuiltInDocumentProperties**:

```
' Set the title of the active document to "My calculation"
pm.ActiveWorkbook.BuiltInDocumentProperties(smoPropertyTitle) = "My calculation"

' Show the number of charts in the active document
MsgBox pm.ActiveWorkbook.BuiltInDocumentProperties("Number of charts")
```

### 3 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 [DocumentProperty](#) objects in the collection, i.e. the number of the currently open documents. This value is immutable, because all PlanMaker documents have the same number of 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 parameter 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:

<code>smoPropertyTitle</code>	= 1	' "Title"
<code>smoPropertySubject</code>	= 2	' "Subject"
<code>smoPropertyAuthor</code>	= 3	' "Author"
<code>smoPropertyKeywords</code>	= 4	' "Keywords"
<code>smoPropertyComments</code>	= 5	' "Comments"
<code>smoPropertyAppName</code>	= 6	' "Application name"
<code>smoPropertyTimeLastPrinted</code>	= 7	' "Last print date"
<code>smoPropertyTimeCreated</code>	= 8	' "Creation date"
<code>smoPropertyTimeLastSaved</code>	= 9	' "Last save time"
<code>smoPropertyKeystrokes</code>	= 10	' n/a (not available in PlanMaker)
<code>smoPropertyCharacters</code>	= 11	' n/a (not available in PlanMaker)
<code>smoPropertyWords</code>	= 12	' n/a (not available in PlanMaker)
<code>smoPropertySentences</code>	= 13	' n/a (not available in PlanMaker)
<code>smoPropertyParas</code>	= 14	' n/a (not available in PlanMaker)
<code>smoPropertyChapters</code>	= 15	' n/a (not available in PlanMaker)
<code>smoPropertySections</code>	= 16	' n/a (not available in PlanMaker)
<code>smoPropertyLines</code>	= 17	' n/a (not available in PlanMaker)
<code>smoPropertyPages</code>	= 18	' "Number of pages"
<code>smoPropertyCells</code>	= 19	' "Number of cells"
<code>smoPropertyTextCells</code>	= 20	' "Number of cells with text"
<code>smoPropertyNumericCells</code>	= 21	' "Number of cells with numbers"
<code>smoPropertyFormulaCells</code>	= 22	' "Number of cells with formulas"
<code>smoPropertyNotes</code>	= 23	' "Number of comments"
<code>smoPropertySheets</code>	= 24	' "Number of worksheets"
<code>smoPropertyCharts</code>	= 25	' "Number of charts"
<code>smoPropertyPictures</code>	= 26	' "Number of pictures"
<code>smoPropertyOLEObjects</code>	= 27	' "Number of OLE objects"
<code>smoPropertyDrawings</code>	= 28	' "Number of drawings"
<code>smoPropertyTextFrames</code>	= 29	' "Number of text frames"
<code>smoPropertyTables</code>	= 30	' n/a (not available in PlanMaker)
<code>smoPropertyFootnotes</code>	= 31	' n/a (not available in PlanMaker)
<code>smoPropertyAvgWordLength</code>	= 32	' n/a (not available in PlanMaker)
<code>smoPropertyAvgCharactersSentence</code>	= 33	' n/a (not available in PlanMaker)
<code>smoPropertyAvgWordsSentence</code>	= 34	' n/a (not available in PlanMaker)

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 open 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"
pm.ActiveWorkbook.BuiltInDocumentProperties.Item(smoPropertyTitle) = "My
calculation"
```

### 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 content 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 Main()
    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.Item(smoPropertyTitle).Value = "New title"

        ' Get the exact same property again (using the string 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:

```
Sub Main()
    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 the exact same property again (using the string 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:

```
Sub Main()
  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, whereas **Creation Date** (smoPropertyTimeCreated) is a date. The possible values are:

```
smoPropertyTypeBoolean = 0 ' Boolean
smoPropertyTypeDate    = 1 ' Date
smoPropertyTypeFloat   = 2 ' Floating-point number
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](#).

---

## Sheets (collection)

Access paths:

- [Application](#) → [Workbooks](#) → [Item](#) → [Sheets](#)
- [Application](#) → [ActiveWorkbook](#) → [Sheets](#)

### 1 Description

The **Sheets** collection contains all worksheets of a document. The individual elements of this collection are of the type [Sheet](#).

### 2 Access to the collection

Each open document has exactly one instance of the **Sheets** collection. It is accessed through **Workbook.Sheets**:

```
' 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:

```
' 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:

```
Sub Main()
    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 **Add** and get the new worksheet via **ActiveSheet**.

## Sheet (object)

Access paths:

- [Application](#) → [Workbooks](#) → [Item](#) → [Sheets](#) → [Item](#)
- [Application](#) → [Workbooks](#) → [ActiveSheet](#)
- [Application](#) → [ActiveWorkbook](#) → [ActiveSheet](#)
- [Application](#) → [ActiveSheet](#)

### 1 Description

A **Sheet** object represents an individual worksheet of a document opened in PlanMaker.

An individual **Sheet** object exists for each worksheet. If you add worksheets to the document or delete them, the respective **Sheet** objects will be created or deleted dynamically.

### 2 Access to the object

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](#)):

```
' 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 retrieved from the **Workbook.ActiveSheet** object:

```
' Display the name of the active worksheet
MsgBox pm.Application.Workbooks(1).ActiveSheet.Name
```

- The active worksheet of the active document can be retrieved from the **Application.ActiveSheet** object:

```
' 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 to it, for example, **Range** or **AutoFilter**:

```
' Show the name of the current worksheet in an indirect way
MsgBox pm.Application.ActiveSheet.Range("A1:B20").Parent.Name
```

### 3 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**
- **Calculate**
- **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 ribbon commands **Insert | Tables** group | **Sheet | 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 setting **Page breaks** in the dialog box of the ribbon command **Insert | Tables group | Sheet | Properties** in PlanMaker.

### DisplayRowHeadings (property)

Data type: **Boolean**

Gets or sets the setting whether row headings should be shown in the worksheet. Corresponds to the setting **Row headers** in the dialog box of the ribbon command **Insert | Tables group | Sheet | Properties**.

### DisplayColumnHeadings (property)

Data type: **Boolean**

Gets or sets the setting whether column headings should be shown in the worksheet. Corresponds to the setting **Column headers** in the dialog box of the ribbon command **Insert | Tables group | Sheet | Properties**.

### DisplayGridlines (property)

Data type: **Boolean**

Gets or sets the setting whether grid lines should be shown in the worksheet. Corresponds to the setting **Gridlines** in the dialog box of the ribbon command **Insert | Tables group | Sheet | Properties**.

### GridlineColor (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](#).

### GridlineColorIndex (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 may use the values shown in the [Index colors](#) 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 the active AutoFilter.

Note: You can always *read* this setting. But if you want to *set* it, you should note that this property can only be used to *hide* the drop-down arrows. To *show* the drop-down arrows, you must invoke 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 format, margins, etc.).

**Selection (pointer to object)**

Data type: **Object**

Returns a [Range](#) object that represents the currently selected cells of the worksheet. Among other things, you can use it to read and change their contents and formatting.

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. You can therefore apply all properties and methods of ranges to them.

Example:

```
' 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. You can therefore apply all properties and methods of ranges to them.

Example:

```
' 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 current worksheet. This is useful for two applications:

- You can apply an operation (primarily formatting) to each cell in the worksheet:

```
' Make the whole worksheet red
pm.ActiveSheet.Cells.Shading.ForegroundPatternColor = smoColorRed
```

- 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:

```
' 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
    pm.ActiveSheet.Cells.Item(row, col).Value = 42
  Next col
Next row
```

## Range (pointer to object)

Data type: **Object**

Returns a [Range](#) object matching the specified parameters. You can use this object to access the cells in a range and, for example, get or set their values.

Syntax 1:

```
obj = Range(Cell1)
```

Syntax 2:

```
obj = Range(Cell1, Cell2)
```

Parameters:

**Cell1** (type: **String**) specifies either according to syntax 1 a cell range (then **Cell2** must be omitted) or according to syntax 2 the upper left corner of a range (then parameter **Cell2** specifies the lower right corner of the 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 lets you 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)**

Recalculates the worksheet (similar to the ribbon command **Formulas | Update group | Update data | Update calculations** in PlanMaker, except that the ribbon command recalculates *all* worksheets of a workbook).

Syntax:

**Calculate**

Parameters:

none

Return type:

none

Example:

```
' Recalculate 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 of the worksheet (corresponds to the ribbon command **Home** | **Selection** group | **Select all** in PlanMaker).

Syntax:

```
Select
```

Parameters:

none

Return type:

none

Example:

```
' Select all cells in the current worksheet  
pm.ActiveSheet.Select
```

### ShowAllData (method)

Makes all cells visible again that are currently hidden by an AutoFilter. 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](#)
- [Application](#) → [Workbooks](#) → [ActiveSheet](#) → [PageSetup](#)
- [Application](#) → [ActiveWorkbook](#) → [ActiveSheet](#) → [PageSetup](#)
- [Application](#) → [ActiveSheet](#) → [PageSetup](#)

### 1 Description

The **PageSetup** object contains the page settings of the [Sheet](#) object to which it belongs. You can use it to determine and change the paper size, page size and margins as well as the print direction of a single worksheet.

### 2 Access to the object

Each worksheet in a document has exactly one instance of the **PageSetup** object. It is accessed through [Sheet.PageSetup](#):

```
' Set the left margin of the active sheet to 2cm  
pm.ActiveSheet.PageSetup.LeftMargin = pm.CentimetersToPoints(2)
```

Note: You can define different page settings for each individual worksheet in a document.

### 3 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 suitable 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 **PaperSize** property (see below) will be automatically changed to a suitable paper format.

### Orientation (property)

Data type: **Long** (SmoOrientation)

Gets or sets the page orientation of the worksheet. The following constants are allowed:

```
smoOrientLandscape = 0 ' Landscape
smoOrientPortrait  = 1 ' Portrait
```

### PaperSize (property)

Data type: **Long** (SmoPaperSize)

Gets or sets the page size of the worksheet. The following constants are allowed:

```
smoPaperCustom      = -1
smoPaperLetter       = 1
smoPaperLetterSmall = 2
smoPaperTabloid      = 3
smoPaperLedger       = 4
smoPaperLegal        = 5
smoPaperStatement    = 6
smoPaperExecutive    = 7
```

<code>smoPaperA3</code>	= 8
<code>smoPaperA4</code>	= 9
<code>smoPaperA4Small</code>	= 10
<code>smoPaperA5</code>	= 11
<code>smoPaperB4</code>	= 12
<code>smoPaperB5</code>	= 13
<code>smoPaperFolio</code>	= 14
<code>smoPaperQuarto</code>	= 15
<code>smoPaper10x14</code>	= 16
<code>smoPaper11x17</code>	= 17
<code>smoPaperNote</code>	= 18
<code>smoPaperEnvelope9</code>	= 19
<code>smoPaperEnvelope10</code>	= 20
<code>smoPaperEnvelope11</code>	= 21
<code>smoPaperEnvelope12</code>	= 22
<code>smoPaperEnvelope14</code>	= 23
<code>smoPaperCSheet</code>	= 24
<code>smoPaperDSheet</code>	= 25
<code>smoPaperESheet</code>	= 26
<code>smoPaperEnvelopeDL</code>	= 27
<code>smoPaperEnvelopeC5</code>	= 28
<code>smoPaperEnvelopeC3</code>	= 29
<code>smoPaperEnvelopeC4</code>	= 30
<code>smoPaperEnvelopeC6</code>	= 31
<code>smoPaperEnvelopeC65</code>	= 32
<code>smoPaperEnvelopeB4</code>	= 33
<code>smoPaperEnvelopeB5</code>	= 34
<code>smoPaperEnvelopeB6</code>	= 35
<code>smoPaperEnvelopeItaly</code>	= 36
<code>smoPaperEnvelopeMonarch</code>	= 37
<code>smoPaperEnvelopePersonal</code>	= 38
<code>smoPaperFanfoldUS</code>	= 39
<code>smoPaperFanfoldStdGerman</code>	= 40
<code>smoPaperFanfoldLegalGerman</code>	= 41

## PrintComments

Data type: **Long** (PmPrintLocation)

Gets or sets the setting whether comments should be printed in the worksheet. Corresponds to the setting "Comments" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**. The following constants are allowed:

<code>pmPrintNoComments</code>	= 0	' Don't print comments
<code>pmPrintInPlace</code>	= 1	' Print comments

## CenterHorizontally

Data type: **Boolean**

Gets or sets the setting whether the worksheet should be centered horizontally when printing. Corresponds to the setting "Center horizontally" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

**CenterVertically**

Data type: **Boolean**

Gets or sets the setting whether the worksheet should be centered vertically when printing. Corresponds to the setting "Center vertically" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

**Zoom**

Data type: **Long**

Gets or sets the zoom level at which the worksheet should be printed. Corresponds to the setting "Scaling" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

**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" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

**PrintGridlines**

Data type: **Boolean**

Gets or sets the setting whether the grid lines of the worksheet should be printed. Corresponds to the setting "Grid" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

**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" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

**Order**

Data type: **Long** (PmOrder)

Gets or sets the printing order for multi-page worksheets. The possible values are:

```
pmOverThenDown = 0 ' From left to right  
pmDownThenOver = 1 ' From top to bottom
```

Corresponds to the setting "Print order" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

### PrintArea

Data type: **String**

Gets or sets the print range of the worksheet, analogous to the ribbon command **File | Print** group | **Define print range**.

If an empty string is returned, 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 repeated rows of the worksheet, analogous to the setting "Repeated rows" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

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 repeat rows of the worksheet, analogous to the setting "Repeated columns" on the **Options** tab in the dialog box of the ribbon command **File | Print** group | **Page setup**.

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**
- [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 specific cell range in a worksheet (**Sheet**). This range can contain 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:

```
' Add a comment to the cell C10
pm.ActiveSheet.Range("C10").Comment = "A comment"
```

2. The **Sheet.Selection** property returns a **Range** object that represents the active selection, i.e. the currently selected cells. Example:

```
' 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:

```
' Hide row 2 of 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:

```
' 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)
- **Row R/O**
- **Column R/O**
- **Name**
- **Formula**
- **Value**
- **Value2**
- **HorizontalAlignment**
- **VerticalAlignment**
- **WrapText**
- **LeftPadding**
- **RightPadding**
- **TopPadding**
- **BottomPadding**
- **MergeCells**
- **Orientation**
- **VerticalText**
- **PageBreakCol**
- **PageBreakRow**
- **Comment**
- **Locked**
- **FormulaHidden**
- **CellHidden**
- **Nonprintable**
- **Hidden**
- **RowHeight**
- **ColumnWidth**

Objects:

- **Cells** → **Range**
- **Range** → **Range**
- **Workbook** → [Workbook](#)

- **Sheet** → [Sheet](#)
- **NumberFormatting** → [NumberFormatting](#)
- **Font** → [Font](#)
- **Shading** → [Shading](#)
- **Validation** → [Validation](#)
- **Application** → [Application](#)
- **Parent** → [Sheet](#)

Collections:

- **Borders** → [Borders](#)

Methods:

- **AutoFit**
- **ApplyFormatting**
- **Select**
- **Copy**
- **Cut**
- **Paste**
- **Insert**
- **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 of the calling **Range** object. You can use it to address each cell of the calling **Range** object individually.

Syntax:

```
Item(RowIndex, ColumnIndex)
```

Parameters:

**RowIndex** (Type: **Long**) indicates the row number of the desired cell (as an offset from the top left cell in the range).

**ColumnIndex** (optional; Type: **Long**) indicates the column number of the desired cell (as an offset from 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, as Item is the default property of the Range object  
pm.ActiveSheet.Range("B5:B10")(1, 1).Value = 42
```

```
' Change the format of 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 range.

If multiple 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 range.

If multiple 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. Similar to the commands of the ribbon tab **Formula | Named areas** group, you can use it to set up and read named areas.

### 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 range. Dates will be interpreted as a *string* (see also the property **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 range. Dates will be interpreted as a *number*.

### The 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:

- 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 range. The possible values are:

```
pmHAlignGeneral      = 0 ' Default
pmHAlignLeft         = 1 ' Left
pmHAlignRight        = 2 ' Right
pmHAlignCenter       = 3 ' Centered
pmHAlignJustify      = 4 ' Justified
pmHAlignCenterAcrossSelection = 5 ' Centered across columns
```

### VerticalAlignment (property)

Data type: **Long** (PmVAlign)

Gets or sets the vertical alignment of the cells in the range. The possible values are:

```
pmVAlignTop         = 0 ' Top
pmVAlignCenter      = 1 ' Centered
pmVAlignBottom      = 2 ' Bottom
pmVAlignJustify     = 3 ' Vertically justified
```

### WrapText (property)

Data type: **Long**

Gets or sets the "Line break" setting for the cells in the range, analogous to the **Line break** option on the ribbon tab **Home** | **Alignment** group.

**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 "Merge cells", analogous to the option **Merge cells** on the ribbon tab **Home** | **Alignment** group. All cells in the range are connected to form a large cell (**True**), or the cell connection is removed again (**False**).

**Orientation (property)**

Data type: **Long**

Gets or sets the print orientation of the cells in the range. Possible values: 0, 90, 180 and -90 corresponding to the respective rotation angle.

Note: The value 270 will be automatically converted to -90.

**VerticalText (property)**

Data type: **Long**

Gets or sets the setting "Vertical text".

Corresponds to the option **Vertical text** on the **Alignment** tab of the dialog box for the cell properties.

**PageBreakCol (property)**

Data type: **Boolean**

Gets or sets the setting whether a page break should be performed to the left of the range.

If you set this property to **True**, a vertical page break will be performed between the range and the column to the left of it. If you set it to **False**, the break will be removed again.

Corresponds to the ribbon command **Layout | Page setup group | 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 range. If you set it to **False**, the break will be removed again.

Corresponds to the ribbon command **Layout | Page setup group | Page break | Insert before row**.

**Comment (property)**

Data type: **String**

Gets or sets the comment for the cells in the range. For getting the value, if the comments are different or no comments are present, an empty string will be returned.

Corresponds to the comments that can be created and edited in PlanMaker with the ribbon command **Insert | Comment**.

**Locked (property)**

Data type: **Long**

Gets or sets the "Cell protection" setting, corresponding to the option of the same name on the **Protection** tab of the dialog box for the cell properties.

**FormulaHidden (property)**

Data type: **Long**

Gets or sets the "Hide formula" setting, corresponding to the option of the same name on the **Protection** tab of the dialog box for the cell properties.

**CellHidden (property)**

Data type: **Long**

Gets or sets the "Hide cell" setting, corresponding to the option of the same name on the **Protection** tab of the dialog box for the cell properties.

### Nonprintable (property)

Data type: **Long**

Gets or sets the "Do not print cell" setting, corresponding to the option of the same name on the **Protection** tab of the dialog box for the cell properties.

### Hidden (property)

Data type: **Long**

Gets or sets the setting whether complete columns or rows are hidden, analogous to the ribbon commands **Home** | **Cells** group | **Visibility** | **Hide columns** and **Hide rows**.

The area must designate one or more *whole* rows or 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 or columns. For more information, see the notes on 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 more information, see the notes on the **Hidden** property.

### Cells (pointer to object)

Data type: **Object**

Returns a [Range](#) object whose elements correspond exactly to those of the source area. This allows you to address the individual cells of an area using loop variables. 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 matching 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 addressing 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 *range* (see example).

Syntax 1:

```
obj = Range(Cell11)
```

Syntax 2:

```
obj = Range(Cell11, Cell12)
```

Parameters:

**Cell1** (type: **String**) specifies either according to syntax 1 a cell range (then **Cell2** must be omitted) or according to syntax 2 the upper left corner of a range (then parameter **Cell2** specifies the lower right corner of the 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 range.

### Sheet (pointer to object)

Data type: **Object**

Returns the [Sheet](#) object that you can use to access the worksheet belonging to the 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 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 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 range.

#### Validation (pointer to object)

Data type: **Object**

Returns the [Validation](#) object that you can use to access the input validation in the 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 a [Borders](#) collection representing the four border lines of the cells in the range. You can use this collection to retrieve and change the line settings (thickness, color, etc.).

#### AutoFit (method)

Set the row(s) or column(s) to optimal height or width, respectively. Corresponds to the ribbon commands **Layout | Row group | Optimal height** and **Optimal width**.

The given range must cover *entire* rows or columns.

Syntax:

```
AutoFit
```

Parameters:

none

Return type:

none

Examples:

```
' 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 when you finish issuing 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:

```
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:

```

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 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 selection, 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**

Parameters:

none

Return type:

none

**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 range defined by **Range**.

PlanMaker behaves as if you had selected the range and then invoked the commands of the ribbon tab **Home** | **Cells** group | **Insert**.

Syntax:

**Insert** [Shift]

Parameters:

**Shift** (optional; type: **Long** or **PmInsertShiftDirection**): Indicates in 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 range defined by **Range**. The rest of the cells in the table are shifted accordingly to fill the gap.

PlanMaker behaves as if you had selected the range and then select the commands of the ribbon tab **Home** | group **Cells** | **Delete**.

Syntax:

```
Delete [Shift]
```

Parameters:

**Shift** (optional; type: **Long** or **PmDeleteShiftDirection**): Indicates in 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 all contents and formatting of all cells in the range defined by **Range**.

Syntax:

```
Clear
```

Parameters:

none

Return type:

none

### ClearContents (method)

Deletes the contents of all cells in the range defined by **Range**. Their formatting is retained.

Syntax:

```
ClearContents
```

Parameters:

none

Return type:

none

### ClearFormats (method)

Deletes the formatting of all cells in the range defined by **Range** (except for conditional formatting). Their cell contents are retained.

Syntax:

```
ClearFormats
```

Parameters:

none

Return type:

none

### ClearConditionalFormatting (method)

Deletes the conditional formatting of all cells in the range defined by **Range**. Their cell contents are retained.

Syntax:

```
ClearConditionalFormatting
```

Parameters:

none

Return type:

none

### ClearComments (method)

Deletes all comments in the range defined by **Range**.

Syntax:

```
ClearComments
```

Parameters:

none

Return type:

none

### ClearInputValidation (method)

Removes all input validation settings in the range defined by **Range**.

Syntax:

**ClearInputValidation**

Parameters:

none

Return type:

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* parameter, 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 assumed.

**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:

<b>pmAll</b>	= 0	' Show all rows (i.e., do not filter)
<b>pmAnd</b>	= 1	' <b>Criteria1</b> and <b>Criteria2</b> must be met.
<b>pmBottom10Items</b>	= 2	' Only the n cells with the lowest values*
<b>pmBottom10Percent</b>	= 3	' Show only the bottom n percent values*
<b>pmOr</b>	= 4	' <b>Criteria1</b> or <b>Criteria2</b> must be met.
<b>pmTop10Items</b>	= 5	' Show only the n highest values*
<b>pmTop10Percent</b>	= 6	' Show only the top n percent values*
<b>pmBlank</b>	= 7	' Only blank rows
<b>pmNonblank</b>	= 8	' Only non-blank rows

\* In these cases, **Criteria1** must contain the value for "n".

**Criteria2** (optional; type: **Variant**) allows you to specify a second filter term. This is only possible with the operators **pmAnd** and **pmOr**.

**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** instructs 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:

**pm.ActiveSheet.Range("A1:D10").AutoFilter** disables the above AutoFilter.

## 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 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](#)

## 1 Description

**Rows** is a collection of all rows in a worksheet or 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

**Rows** can be a child object of two different objects:

- As a child object of a [Sheet](#) object, it represents all rows of this worksheet.
- As a child object of a [Range](#) object, it represents all rows of this range.

Examples for **Rows** as a child object of a Sheet object:

```
' Display the number of rows in the current worksheet
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
pm.ActiveSheet.Range("A1:F50").Rows(1).Font.Bold = True
```

## 3 Properties, objects, collections and methods

Properties:

- **Count** R/O

Objects:

- **Item** → [Range](#) (default object)
- **Application** → [Application](#)
- **Parent** → [Sheet](#) or [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 range.

### Item (pointer to object)

Data type: **Object**

Returns an individual [Range](#) object, i.e. a range that contains 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](#)
- [Application](#) → [Columns](#)

Access paths for the columns of arbitrary 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 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:

- As a child object of a [Sheet](#) object, it represents all columns of this worksheet.
- As a child object of a [Range](#) object, it represents all columns of this range.

Examples for **Columns** as a child object of a Sheet object:

```
' 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:

```
' 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
pm.ActiveSheet.Range("A1:F50").Columns(1).Font.Bold = True
```

## 3 Properties, objects, collections and methods

Properties:

- **Count** R/O

Objects:

- **Item** → [Range](#) (default object)
- **Application** → [Application](#)
- **Parent** → [Sheet](#) or [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 columns in the worksheet or range.

### Item (pointer to object)

Data type: **Object**

Returns an individual [Range](#) object, i.e. A range that contains 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:

```
' Set the font for second column in the worksheet to Courier New  
pm.ActiveSheet.Columns.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](#).

---

## 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)**. You can find examples of these access paths in the [Range](#)-Object.

### 1 Description

You can use the **NumberFormatting** object to read and change the number format of a range (corresponding to the options on the **Number format** tab in the dialog box for the cell properties).

### 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**

- **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 range. The possible values are:

<b>pmNumberGeneral</b>	= 0	' Standard
<b>pmNumberDecimal</b>	= 1	' Number
<b>pmNumberScientific</b>	= 2	' Scientific
<b>pmNumberFraction</b>	= 3	' Fraction (see also Digits property)
<b>pmNumberDate</b>	= 4	' Date/Time (see note)
<b>pmNumberPercentage</b>	= 5	' Percentage
<b>pmNumberCurrency</b>	= 6	' Currency (see note)
<b>pmNumberBoolean</b>	= 7	' Boolean
<b>pmNumberCustom</b>	= 8	' Custom (see note)
<b>pmNumberText</b>	= 9	' Text
<b>pmNumberAccounting</b>	= 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 range.

Example:

```
' Format cell A1 as a date
pm.ActiveSheet.Range("A1").NumberFormatting.DateFormat = "YYYY-MM-DD"
```

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 its English user interface, e.g. DD/MM/YYYY is a valid date format. If the German user interface is used, TT.MM.JJJJ has to be used, with the 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 = pm.NumberDate 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 range.

Example:

```
' Format cell A1 with a used-defined format
pm.ActiveSheet.Range("A1").NumberFormatting.CustomFormat = "000000"
```

### Currency (property)

Data type: **String**

Gets or sets the currency format for the cells in the 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:

```
EUR    Euro
USD    US dollar
CAD    Canadian dollar
AUD    Australian dollar
JPY    Japanese yen
RUB    Russian ruble
CHF    Swiss franc
```

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:

```
' Format cell A1 as euro
pm.ActiveSheet.Range("A1").NumberFormatting.Currency = "EUR"
```

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 = pm.NumberCurrency 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 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"
```

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 range.

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:

```
' Format the cell A1 as a fraction with the denominator 8
With pm.ActiveSheet.Range("A1")
    .NumberFormatting.Type = pmNumberFraction
    .NumberFormatting.Digits = 8
End With
```

For the number format "fraction" **Digits** may be between 0 and 1000, for all other number formats between 0 and 15.

### NegativeRed (property)

Data type: **Boolean**

Gets or sets the setting "Negative numbers in red" for the cells of the range, corresponding to the option of the same name on the **Number format** tab in the dialog box for the cell properties.

### SuppressMinus (property)

Data type: **Boolean**

Gets or sets the setting "Suppress minus sign" for the cells of the range, corresponding to the option of the same name on the **Number format** tab in the dialog box for the cell properties.

### SuppressZeros (property)

Data type: **Boolean**

Gets or sets the setting "Don't show zero" for the cells of the range, corresponding to the option of the same name on the **Number format** tab in the dialog box for the cell properties.

### ThousandsSeparator (property)

Data type: **Boolean**

Gets or sets the setting "Thousands separator" for the cells of the range, corresponding to the option of the same name on the **Number format** tab in the dialog box for the cell properties.

### 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 range from A1 to C3 will be formatted as percentage values with two decimal places:

```
Sub Main
  Dim pm as Object

  Set pm = CreateObject("PlanMaker.Application")
  pm.Visible = True

  With pm.ActiveSheet.Range("A1:C3")
    .NumberFormatting.Type = pm.NumberPercentage
    .NumberFormatting.Digits = 2
  End With

  Set pm = Nothing
End Sub
```

---

## Font (object)

Access paths:

- [Application](#) → [Workbooks](#) → [Item](#) → [Sheets](#) → [Item](#) → [Range](#) → **Font**
- [Application](#) → [Workbooks](#) → [ActiveSheet](#) → [Range](#) → **Font**
- [Application](#) → [ActiveWorkbook](#) → [ActiveSheet](#) → [Range](#) → **Font**
- [Application](#) → [ActiveSheet](#) → [Range](#) → **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)**. You can find examples of these access paths in the [Range-Object](#).

### 1 Description

The **Font** object describes the character formatting (font, text color, underline, etc.) of cells.

### 2 Access to the object

The **Font** object is a child object of a [Range](#) object and represents the character formatting of cells in this range, corresponding to the Character formatting dialog box.

Example:

```
' Show the name of the font used in cell A1
MsgBox pm.ActiveSheet.Range("A1").Font.Name
```

### 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** → [Range](#)

### **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** (SmColor)

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** (SmColorIndex)

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 may use the values shown in the [Index colors](#) 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** (SmColor)

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** (SmColorIndex)

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 may use the values shown in the [Index colors](#) 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 of the type [Range](#).

### Example for the Font object

In the following example, cells A1 to C3 will be formatted in Times New Roman, bold, 24 points.

```
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:

- [Application](#) → [Workbooks](#) → [Item](#) → [Sheets](#) → [Item](#) → [Range](#) → **Borders**
- [Application](#) → [Workbooks](#) → [ActiveSheet](#) → [Range](#) → **Borders**
- [Application](#) → [ActiveWorkbook](#) → [ActiveSheet](#) → [Range](#) → **Borders**
- [Application](#) → [ActiveSheet](#) → [Range](#) → **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)**. You can find examples of these access paths in the [Range-Object](#).

### 1 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

As a child object of a [Range](#) object, **Borders** represents the border lines of the cells in the given range, corresponding to the ribbon command **Home | Format group | Borders**.

Example:

```

' Draw a bottom border for the cell A1
pm.ActiveSheet.Range("A1").Borders(pmBorderBottom).Type = pmLineStyleSingle

```

### 3 Properties, objects, collections and methods

Properties:

- **Count** R/O

Objects:

- *Item* → [Border](#) (default object)
- **Application** → [Application](#)
- **Parent** → [Range](#)

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

Data type: **Long**

Returns the number of [Border](#) objects in the collection, i.e. the number of possible border lines: This value is always 4 because there are four borders (left, right, top and bottom).

#### Item (pointer to object)

Data type: **Object**

Returns an individual [Border](#) object that you can use to get or set the properties (such as color and thickness) 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:

<code>pmBorderTop</code>	= -1	' Top border line
<code>pmBorderLeft</code>	= -2	' Left border line
<code>pmBorderBottom</code>	= -3	' Bottom border line
<code>pmBorderRight</code>	= -4	' Right border line
<code>pmBorderHorizontal</code>	= -5	' Horizontal grid lines
<code>pmBorderVertical</code>	= -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 of the type [Range](#).

### Example for the Borders object

In the following example, a 4 point thick blue line will be applied to the left border of the 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:

- [Application](#) → [Workbooks](#) → [Item](#) → [Sheets](#) → [Item](#) → [Range](#) → [Borders](#) → [Item](#)
- [Application](#) → [Workbooks](#) → [ActiveSheet](#) → [Range](#) → [Borders](#) → [Item](#)
- [Application](#) → [ActiveWorkbook](#) → [ActiveSheet](#) → [Range](#) → [Borders](#) → [Item](#)
- [Application](#) → [ActiveSheet](#) → [Range](#) → [Borders](#) → [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)**. You can find examples of these access paths in the [Range](#)-Object.

### 1 Description

A **Border** object represents one of the border lines of cells (e.g. the upper, lower, left or right 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 only be accessed via the **Borders** collection. As a child object of a **Range** object, **BordersItem(n)** represents a border line of the cells in this range, corresponding to the ribbon command **Home | Format group | Borders**.

To specify which of the lines in a **Borders** collection you want to edit (left, right, top, bottom, etc.), pass the number of that line (or the corresponding constant) as a parameter according to the following table:

```

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:

```

' Draw a bottom border for the cell A1
pm.ActiveSheet.Range("A1").Borders(pmBorderBottom).Type = pmLineStyleSingle

```

### 3 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**.

**Thick1**, **Thick2** and **Separator** taken together may not be greater than 12.

### 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**.

**Thick1**, **Thick2** and **Separator** taken together may not be greater than 12.

### Color (property)

Data type: **Long** (SmColor)

Gets or sets the color of the border line(s) 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](#).

### ColorIndex (property)

Data type: **Long** (SmColorIndex)

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 may use the values shown in the [Index colors](#) table.

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.

### 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:

- [Application](#) → [Workbooks](#) → [Item](#) → [Sheets](#) → [Item](#) → [Range](#) → **Shading**
- [Application](#) → [Workbooks](#) → [ActiveSheet](#) → [Range](#) → **Shading**
- [Application](#) → [ActiveWorkbook](#) → [ActiveSheet](#) → [Range](#) → **Shading**

- [Application](#) → [ActiveSheet](#) → [Range](#) → **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)**. You can find examples of these access paths in 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

The **Shading** object is a child object of a [Range](#) object and represents the shading of the cells in the given range, corresponding to the ribbon command **Home | Format group | Shading**.

Example:

```
' Show the pattern of cell A1
MsgBox pm.ActiveSheet.Range("A1").Shading.Texture
```

## 3 Properties, objects, collections and methods

Properties:

- **Texture**
- **Intensity**
- *ForegroundColor* (default property)
- **ForegroundColorIndex**
- **BackgroundColor**
- **BackgroundColorIndex**

Objects:

- **Application** → [Application](#)
- **Parent** → [Range](#)

### Texture (property)

Data type: **Long** (SmoShadePatterns)

Gets or sets the fill pattern for the shading. The possible values are:

<b>smoPatternNone</b>	= 0	(no shading)
<b>smoPatternHalftone</b>	= 1	(shading)
<b>smoPatternRightDiagCoarse</b>	= 2	
<b>smoPatternLeftDiagCoarse</b>	= 3	
<b>smoPatternHashDiagCoarse</b>	= 4	
<b>smoPatternVertCoarse</b>	= 5	
<b>smoPatternHorzCoarse</b>	= 6	
<b>smoPatternHashCoarse</b>	= 7	

<b>smoPatternRightDiagFine</b>	= 8	
<b>smoPatternLeftDiagFine</b>	= 9	
<b>smoPatternHashDiagFine</b>	= 10	
<b>smoPatternVertFine</b>	= 11	
<b>smoPatternHorzFine</b>	= 12	
<b>smoPatternHashFine</b>	= 13	

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 indicate an arbitrary value or use one of the [pre-defined 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 may use the values shown in the [Index colors](#) table.

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 indicate an arbitrary value or use one of the [pre-defined 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 may use the values shown in the [Index colors](#) table.

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 type [Range](#).

### Example for the Shading object

In the following example a 50% red shading will be applied to the range from A1 to C3.

```
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)**. You can find examples of these access paths in the [Range](#)-Object.

## 1 Description

The **Validation** object represents the validation check of a range (that is, a [Range](#) object). In PlanMaker, such validation checks can be set up with the ribbon command **Review | Input validation**.

## 2 Access to the object

Each [Range](#) object has exactly one instance of the **Validation** object. It is accessed through **Range.Validation**:

```
' Display the input message for cell A1
MsgBox pm.ActiveSheet.Range("A1").Validation.InputMessage
```

## 3 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:

<code>pmValidateInputOnly</code>	= 0	' Allow all types of values
<code>pmValidateWholeNumber</code>	= 1	' Allow only integer numbers
<code>pmValidateDecimal</code>	= 2	' Allow only decimal numbers
<code>pmValidateList</code>	= 3	' Allow only values from a pre-defined list
<code>pmValidateDate</code>	= 4	' Allow only date values
<code>pmValidateTime</code>	= 5	' Allow only time values
<code>pmValidateTextLength</code>	= 6	' Allow only values of a certain length
<code>pmValidateCustom</code>	= 7	' User-defined check

### AlertStyle (property)

Data type: **Long** (PmDVAlertStyle)

Gets or sets the style of the error message for invalid values.

<code>pmValidAlertStop</code>	= 0	' Error message
<code>pmValidAlertWarning</code>	= 1	' Warning message
<code>pmValidAlertInformation</code>	= 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 setting "Show input message when cell is selected" on the **Input message** tab in the dialog box of the ribbon command **Review | Input validation**.

### InputTitle (property)

Data type: **String**

Gets or sets the title of the input message that appears when the cell is activated. Corresponds to the entry field "Title" on the **Input message** tab in the dialog box of the ribbon command **Review | Input validation**.

### InputMessage (property)

Data type: **String**

Gets or sets the text of the input message that appears when the cell is activated. Corresponds to the entry field "Message" on the **Input message** tab in the dialog box of the ribbon command **Review | Input validation**.

**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 setting "Show error message after invalid data is entered" on the **Error message** tab in the dialog box of the ribbon command **Review | Input validation**.

**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 entry field "Title" on the **Error message** tab in the dialog box of the ribbon command **Review | Input validation**.

**ErrorMessage (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 entry field "Message" on the **Error message** tab in the dialog box of the ribbon command **Review | Input validation**.

**Operator (property, R/0)**

Data type: **Long** (PmDVOperator)

Gets or sets the comparison operator used by the input validation check.

<b>pmDVBetween</b>	= 0	' is between
<b>pmDVNotBetween</b>	= 1	' is not between
<b>pmDVEqual</b>	= 2	' is equal to
<b>pmDVNotEqual</b>	= 3	' is not equal to
<b>pmDVGreater</b>	= 4	' is greater than
<b>pmDVLess</b>	= 5	' is less than
<b>pmDVGreaterEqual</b>	= 6	' is greater than or equal to
<b>pmDVLessEqual</b>	= 7	' is less than or equal to

**Formula1 (property, R/0)**

Data type: **String**

Returns the minimum of the validation check for the operators **pmDVBetween** and **pmDVNotBetween**. For all other operators, it returns the value.

**Formula2 (property, R/0)**

Data type: **String**

Returns the maximum of the validity check for the operators **pmDVBetween** and **pmDVNotBetween**, for all other operators the return value is empty.

### 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 box of the ribbon command **Check | Validation**.

### IgnoreBlank (property)

Data type: **Long**

Gets or sets the setting whether empty cells should be ignored by the input validation check. Corresponds to the setting "Ignore empty cells" in the dialog box of the ribbon command **Check | Validation**.

### 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)

Sets up a new validity check in an area. Corresponds to the ribbon command **Check | Validation**.

Please note that each cell cannot have more than *one* input validation check.

Syntax:

```
Add Type, [AlertStyle], [Operator], [Formula1], [Formula2]
```

Parameters:

**Type** (type: **Long** or **PmDVType**) determines the type of input validation check. The possible values are:

<b>pmValidateInputOnly</b>	= 0 ' Allow all types of values *
<b>pmValidateWholeNumber</b>	= 1 ' Allow only integer numbers
<b>pmValidateDecimal</b>	= 2 ' Allow only decimal numbers
<b>pmValidateList</b>	= 3 ' Allow only values from a pre-defined list **
<b>pmValidateDate</b>	= 4 ' Allow only date values
<b>pmValidateTime</b>	= 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 affected cell(s).

\*\* With this setting, only the values specified in a list of allowed values are accepted. Use the parameter **Formula1** to specify the 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 comparison 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**) defines a string containing a number, a reference to a cell, or a formula. For **pmDVBetween** and **pmDVNotBetween** it specifies the minimum, for all other operators the value.

**Formula2** (optional; type: **String**) defines a string containing a number, a reference to a cell, or a formula. Must be specified only if **pmDVBetween** or **pmDVNotBetween** are used.

Return type:

none

#### Summary of all parameter combinations possible:

Type	Operator	Formula1	Formula2
<b>pmValidateInputOnly</b>	(not used)	(not used)	(not used)
<b>pmValidateWholeNumber</b> , <b>pmValidateDecimal</b> , <b>pmValidateDate</b> , <b>pmValidateTime</b> , <b>pmValidateTextLength</b>	All of the above	Contains the minimum for <b>pmDVBetween</b> and <b>pmDVNotBetween</b> and the value for all other operators.	May only be used with <b>pmDVBetween</b> and <b>pmDVNotBetween</b> and then contains the maximum.

pmValidateList	(not used)	A list of values, separated by the system list separator, or a cell reference	(not used)
pmValidateCustom	(not used)	An expression that returns <b>True</b> for inputs that are to be considered valid, otherwise returns <b>False</b>	(not used)

### Modify (method)

Modifies the input validation for a range.

Syntax:

```
Modify [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 affected cell(s).

\*\* With this setting, only the values specified in a list of allowed values are accepted. Use the parameter **Formula1** to specify the 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** ) defines a string containing a number, a reference to a cell, or a formula. For **pmDVBetween** and **pmDVNotBetween** it specifies the minimum, for all other operators the value.

**Formula2** (optional; type: **String** ) defines a string containing a number, a reference to a cell, or a formula. Must be specified only if **pmDVBetween** or **pmDVNotBetween** are used.

Return type:

none

### Delete (method)

Removes the input validation check from a range.

Syntax:

```
Delete
```

Parameters:

none

Return type:

none

Example:

```
' Remove the input validation check from cells A1 and A2
pm.Application.ActiveSheet.Range("A1:A2").Validation.Delete
```

---

## 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 with the ribbon command **Data | Filter** group | **AutoFilter**.

## 2 Access to the object

Each worksheet (**Sheet**) has exactly one **AutoFilter** object. It can be accessed through **Sheet.AutoFilter**:

```
' Display the number of columns in the AutoFilter  
MsgBox pm.ActiveSheet.AutoFilter.Filters.Count
```

## 3 Properties, objects, collections and methods

Objects:

- **Application** → [Application](#)
- **Parent** → [Sheet](#)

Collections:

- **Filters** → [Filters](#)

### 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 in 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**

## 1 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 query the selection criteria and operators of individual columns of the AutoFilter.

## 2 Access to the collection

Each AutoFilter has exactly one **Filters** collection. It is accessed through **AutoFilter.Filters**:

```
' 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 contained in the active AutoFilter.

### Item (pointer to object)

Data type: **Object**

Returns an individual [Filter](#) object, i.e. one individual column in 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 in the active AutoFilter. You can use it to retrieve the criteria and filter conditions for the respective 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 and it is called **AutoFilter.Filters**:

```
' Display the criterion for the first column of the AutoFilter  
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/0)**

Data type: **Long** (PmAutoFilterOperator)

Returns the type of the filter condition. The possible values are:

<b>pmAll</b>	= 0	' Show all rows (= do not filter)
<b>pmAnd</b>	= 1	' <b>Criteria1</b> and <b>Criteria2</b> must be met.
<b>pmBottom10Items</b>	= 2	' Only the n cells with the lowest values*
<b>pmBottom10Percent</b>	= 3	' Only the bottom n percent values*
<b>pmOr</b>	= 4	' <b>Criteria1</b> or <b>Criteria2</b> must be met.
<b>pmTop10Items</b>	= 5	' Only the n highest values*
<b>pmTop10Percent</b>	= 6	' Only the top n percent values*
<b>pmBlank</b>	= 7	' Show only blank rows
<b>pmNonblank</b>	= 8	' Show only non-blank rows
<b>pmCustom</b>	= 9	' User-defined filter

\* In these cases, **Criteria1** contains the value for "n".

**Criteria1 (property, R/0)**

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/0)**

Data type: **String**

Returns the second criterion of the filter – provided that **Operator** is set to **pmAnd** or **pmOr**, as two filter criteria are only possible with them.

**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**

### 1 Description

The **Windows** collection contains all open document windows. The individual elements of this collection are of the type [Window](#).

### 2 Access to the collection

There is exactly one instance of the **Windows** collection during the whole runtime of PlanMaker. It is accessed through **Application.Windows**:

```
' 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
```

### 3 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, i.e. 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 pm.Application.Windows.Item(1).FullName

' Show the name of the document window "Test.tmdx" (if currently open)
MsgBox pm.Application.Windows.Item("Test.pmdx").FullName

' You can also use the full name with path
MsgBox pm.Application.Windows.Item("c:\Documents\Test.pmdx").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.

An individual **Window** object exists for each document window. 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 open document windows are managed in the **Application.Windows** collection (type: [Windows](#)):

```
' 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**:

```
' 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:

```
' 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.pmdx").

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

Data type: **String**

Returns the file name of the document opened in the window (e.g., "Smith.pmdx").

**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.

**DisplayVerticalScrollBar (property)**

Data type: **Boolean**

Gets or sets the setting whether a vertical scroll bar should be shown on the righthand side of the document window. Corresponds to the setting "Vertical scrollbar" on the **Options** tab in the dialog box of the ribbon command **File | Properties**.

**DisplayHorizontalScrollBar (property)**

Data type: **Boolean**

Gets or sets the setting whether a horizontal scroll bar should be shown at the bottom of the document window. Corresponds to the setting "Horizontal scrollbar" on the **Options** tab in the dialog box of the ribbon command **File | Properties**.

**DisplayWorkbookTabs (property)**

Data type: **Boolean**

Gets or sets the setting whether worksheet tabs should be displayed at the bottom of the document window. Corresponds to the setting "Sheet tabs" on the **Options** tab in the dialog box of the ribbon command **File | Properties**.

**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 ribbon command **View | Row and 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. Allowed are values between 50 and 400. They represent the zoom level in percent.

Alternatively, you can use the constant **pmZoomFitToSelection** which 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 "Gridlines" setting in the **Insert | Tables** group | **Sheet | Properties** dialog box of the ribbon command - except that the gridlines of *all* worksheets in the document are affected.

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.

### GridlineColor (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.

### GridlineColorIndex (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 may use the values shown in the [Index colors](#) 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 **snoUndefined** will be returned.

### Workbook (pointer to object)

Data type: **Object**

Returns the [Workbook](#) object assigned to this document window. With this you can read and set numerous settings of your document.

### ActiveCell (pointer to object)

Data type: **Object**

Returns a [Range](#) object that represents the active cell in this document window. You can use this object to read and edit the formatting and content of the cell.

Please note that **ActiveCell** always returns just *one single cell*, even if a range of cells is selected in the worksheet. After all, selected 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.

### ActiveSheet (pointer to object)

Data type: **Object**

Returns a [Sheet](#) object that represents the worksheet active in this document window. With this object you can read and edit the settings of the 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:

```
Activate
```

Parameters:

```
none
```

Return type:

```
none
```

Example:

```
' 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 indicate it (if necessary). The possible values for **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 **Application.RecentFiles**:

```
' 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, 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 **PmSaveFormat**) specifies the file format of the document to be added. The possible values are:

<b>pmFormatDocument</b>	= 0	' PlanMaker document
<b>pmFormatTemplate</b>	= 1	' PlanMaker document template
<b>pmFormatExcel97</b>	= 2	' Excel 97/2000/XP
<b>pmFormatExcel5</b>	= 3	' Excel 5.0/7.0
<b>pmFormatExcelTemplate</b>	= 4	' Excel document template
<b>pmFormatSYLK</b>	= 5	' Sylk
<b>pmFormatRTF</b>	= 6	' Rich Text Format
<b>pmFormatTextMaker</b>	= 7	' TextMaker (= RTF)
<b>pmFormatHTML</b>	= 8	' HTML document
<b>pmFormatdBaseDOS</b>	= 9	' dBASE database with DOS character set
<b>pmFormatdBaseAnsi</b>	= 10	' dBASE database with Windows character set
<b>pmFormatDIF</b>	= 11	' Text file with Windows character set
<b>pmFormatPlainTextAnsi</b>	= 12	' Text file with Windows character set
<b>pmFormatPlainTextDOS</b>	= 13	' Text file with DOS character set
<b>pmFormatPlainTextUnix</b>	= 14	' Text file with ANSI character set for UNIX, Linux, FreeBSD
<b>pmFormatPlainTextUnicode</b>	= 15	' Text file with Unicode character set
<b>pmFormatdBaseUnicode</b>	= 18	' dBASE database with Unicode character set
<b>pmFormatPlainTextUTF8</b>	= 21	' Text file with UTF8 character set
<b>pmFormatMSXML</b>	= 23	' Excel 2007 and later
<b>pmFormatMSXMLTemplate</b>	= 24	' Excel document template 2007 and later
<b>pmFormatPM2008</b>	= 26	' PlanMaker 2008 document
<b>pmFormatPM2010</b>	= 27	' PlanMaker 2010 document
<b>pmFormatPM2012</b>	= 28	' PlanMaker 2012 document
<b>pmFormatPM2012Template</b>	= 29	' PlanMaker 2012 document template

If you omit this parameter, the value **pmFormatDocument** will be assumed.

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 added document)

Example:

```
' Add the file Test.pmdx to the File menu
pm.Application.RecentFiles.Add "Test.pmdx"

' Do the same, but evaluate the return value (mind the parentheses!)
Dim fileObj as Object
Set fileObj = pm.Application.RecentFiles.Add("Test.pmdx")
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.

An individual **RecentFile** object exists for each recently opened file. 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 collection [RecentFiles](#). You can access it through Applications.**RecentFiles**.

```
' Show the name of the first file in the File menu
MsgBox pm.Application.RecentFiles.Item(1).Name
```

### 3 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.pmdx").

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

Data type: **String**

Returns the name of the document (e.g. "Smith.pmdx").

### **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 **Application.FontNames**:

```
' 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:

- **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 PlanMaker – in other words: the number of fonts installed in Windows.

**Item (pointer to object)**

Data type: **Object**

Returns an individual [FontName](#) object, i.e. 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 font of the fonts installed in Windows. An individual **FontName** object exists for each installed font.

**2 Access to the object**

The individual **FontName** objects can be accessed solely through enumerating the elements of the collection [FontNames](#). You can access it through Applications.FontNames.

```
' 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](#).

---

# Statements and functions from A to Z

In this chapter you will find descriptions of all statements 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**

[AppActivate](#), [AppPlanMaker](#), [AppSoftMakerPresentations](#), [AppTextMaker](#), [CreateObject](#), [GetObject](#), [SendKeys](#), [Shell](#)

- **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 inserted 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.

Note: You can omit the file path if the file to embed resides in the same folder.

### Examples:

```
#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 Msg
End 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 string *Title* is the application name as it appears in the title bar.

**See also:** [AppPlanMaker](#), [AppTextMaker](#), [CreateObject](#), [GetObject](#), [Shell](#)

### Example:

```
Sub Main
    X = Shell("Calc.exe", 1)           ' Invoke the Calculator application
    For i = 1 To 5
        SendKeys i & "{+}", True      ' Send keystrokes
    Next i
    Msg = "The 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
```

---

## 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.pmdx"
```

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.

**Note:** This command simply starts the PlanMaker application without establishing an OLE Automation connection. In order to make an OLE Automation connection to PlanMaker, use the function [GetObject](#) after invoking **AppPlanMaker**. Alternatively, you can use the [CreateObject](#) function instead of the **AppPlanMaker** function from the outset. In this case, PlanMaker will be launched and an OLE Automation connection will be established at the same time.

See also: [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.prdx"
```

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: [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.tmdx"
```

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.

**Note:** This command simply starts the TextMaker application without establishing an OLE Automation connection. In order to make an OLE Automation connection to TextMaker, use the function [GetObject](#) after invoking **AppTextMaker**. Alternatively, you can use the [CreateObject](#) function instead of the **AppTextMaker** function from the outset. In this case, TextMaker will be launched and an OLE Automation connection will be established at the same time.

See also: [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:

```
Sub AtnExample
    Dim Msg, Pi           ' Declare variables
    Pi = 4 * Atn(1)      ' Calculate Pi
    Msg = "Pi = " & Str(Pi)
    MsgBox Msg           ' Result: "Pi = 3.1415..."
End Sub
```

---

## Beep (statement)

### Beep

Emits a short tone.

### Example:

```
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]
    Dialog definition...
End Dialog
```

Is used to define a custom dialog box. See the section [Dialog definition](#).

General 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 invoked using the **Call** statement; however their return value will be lost.

See also: [Declare](#), [Function](#), [Sub](#)

**Example:**

```
Sub Main
    Call Beep
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
        Print y
        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:**

```
Sub Main
    Dim Answer, Msg, NL
    NL = Chr(10)
    CurPath = CurDir()
    ' Chr(10)=New line
    ' Determine current path
```

```

ChDir "\"
Msg = "The folder was changed to " & CurDir() & "."
Msg = Msg & NL & NL & "Click on OK "
Msg = Msg & "to return to the previous folder."
Answer = MsgBox(Msg)
ChDir CurPath           ' Back to the old folder
Msg = "We are now back to the folder " & CurPath & "."
MsgBox Msg

```

End Sub

---

## ChDrive (statement)

**ChDrive** *Drive*

Changes the current drive.

*Drive* is a text string specifying the drive letter.

If *Drive* contains more than one character, only the first character will be used.

**See also:** [ChDir](#), [CurDir](#), [MkDir](#), [Rmdir](#)

### Example:

```

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() & ". "
  Msg = Msg & NL & NL & "Click on OK "
  Msg = Msg & "to return to the previous folder."
  Answer = MsgBox(Msg)
  ChDir CurPath         ' Back to the previous 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:

$-32768 \leq \textit{Expression} \leq 32768$

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:

$-2147483648 \leq \textit{Expression} \leq 2147483648$

See also: [CDBl](#), [CInt](#), [CSng](#), [CStr](#)

### Example:

```
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** statement. If you omit it, all currently open files will be closed.

**See also:** [Open](#)

### Example:

```
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 all files
    Close
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 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:** [CDBl](#), [CInt](#), [CLng](#), [CStr](#)

**Example:**

```
Sub Main
    Dim y As Integer
    y = 25

    If VarType(y) = 2 Then
        Print y
        x = CSng(y)
        Print x
    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](#), [TimeSerial](#), [TimeValue](#), [Weekday](#), [Year](#)

### Example:

```
Sub Main
    MsgBox "Today is " & Date & "."
End Sub
```

---

## DateSerial (function)

**DateSerial** (*Year*, *Month*, *Day*)

Returns a Variant variable (type: date) corresponding to the parameters *Year*, *Month* and *Day*.

**See also:** [DateValue](#), [Day](#), [Month](#), [Now](#), [Time](#), [TimeSerial](#), [TimeValue](#), [Weekday](#), [Year](#)

### Example:

```
Sub Main
    Print DateSerial(2020,09,25)    ' returns 2020-09-25
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:

```
Sub Main
    Print DateValue("25. September 2020")    ' returns 2020-09-25
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:

```
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
```

---

## Declare (statement)

**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** statement 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 by appending a type suffix (e.g. % for **Integer**) to the variable name (see the section [Data types](#)).

See also: [Call](#), section [Calling functions in DLLs](#)

---

## 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](#) statement.

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$, .MyList1
        ComboBox 42, 30, 108, 42, MyList$, .Combo1
        DropListBox 42, 76, 108, 36, MyList$, .DropList1$
        OptionGroup .grp1
            OptionButton 42, 100, 48, 12, "Option&1"
            OptionButton 42, 110, 48, 12, "Option&2"
        OptionGroup .grp2
            OptionButton 42, 136, 48, 12, "Option&3"
            OptionButton 42, 146, 48, 12, "Option&4"
        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.Combo1 = "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"
        Text 10, 10, 28, 12, "Name:"
        TextBox 42, 10, 108, 12, .fred
        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.Combol
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, variables are not acceptable. 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](#) statement), omit all limits:

**Dim** *a*()

*Type* specifies the data type (**Integer**, **Long**, **Single**, **Double**, **String**, **String\****n*, **Boolean**, **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](#)).

```
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)

```

```
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 statement can be invoked 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 ControlID$ = "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 statement can be invoked 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 statement can be invoked 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]
    [Statements]
    [Exit Do]
    [Statements]
```

Loop

Or:

Do

```
    [Statements]
    [Exit Do]
    [Statements]
```

Loop [{While|Until} Condition]

Executes a group of statements 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 block of statements.

See also: [Exit](#), [Function](#), [If Then Else](#), [Select Case](#), [Stop](#), [Sub](#)

### Example:

In this example, the **End** statement 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 statement"
    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** statement.

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
    Loop
End Sub

```

```
        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
    Erase a
    Print a(1), a(2), a(3)    ' Returns 0 0 0
End Sub
```

---

## 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
    Loop
End Sub
```

---

## Exp (function)

**Exp** (*Number*)

Calculates the exponential function ( $e ^ \text{Number}$ ).

The value of the constant  $e$  (Euler's number) 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 Msg
End 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
    [Statements]
    [Exit For]
    [Statements]
Next [Element]
```

Executes a group of statements 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]
    [Statements]
    [Exit For]
    [Statements]
Next [Counter]
```

Executes a group of statements 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:

```
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:

```
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:

Format name	Description
<b>General Number</b>	Output the unformatted number.
<b>Fixed</b>	Output with at least one digit to the left and exactly two digits to the right of the decimal separator.
<b>Standard</b>	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 $\geq 1000$ .
<b>Percent</b>	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.
<b>Scientific</b>	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).
<b>True/False</b>	"False" if the number is zero, otherwise "True"

### User-defined numeric formats

User-defined numeric formats can be composed of the following characters:

Character	Meaning
<b>0</b>	Placeholder for digits: Output a digit or zero.  If the number to be formatted has a digit in the position where <i>Format</i> 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 <i>Format</i> , 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 <i>Format</i> , 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 <i>Format</i> , 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 <i>Format</i> , 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 <i>Format</i> has at least one digit placeholder ( <b>0</b> or <b>#</b> ) to the right of <b>E-</b> , <b>E+</b> , <b>e-</b> , or <b>e+</b> , 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 <b>E+/e+</b> , the exponent is always output with its sign, in case of <b>E-/e-</b> 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 (\\).  Note: Quotation marks may not be used in format strings; even \" causes an error message.
"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:

Sections	Result
1 section	This format applies to all values.
2 sections	The format in the first section applies to positive values and zero, the one in the second section to negative values.
3 sections	The first format applies to positive values, the second one to negative values and the third one to zero.

4 sections                      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).

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 shows the format expression, the remaining columns show the results for the numbers 3, -3 and 0.3.

<b>Format</b>	<b>3</b>	<b>-3</b>	<b>0.3</b>
(empty)	3	-3	0.3
"0"	3	-3	0
"0.00"	3.00	-3.00	0.30
"#,##0"	3	-3	0
"\$#,##0;(\$#,##0)"	\$3	(\$3)	\$0
"\$#,##0.00;(\$#,##0.00)"	\$3.00	(\$3.00)	\$0.30
"0%"	300%	-300%	30%
"0.00%"	300.00%	-300.00%	30.00%
"0.00E+00"	3.00E+00	-3.00E+00	3.00E-01
"0.00E-00"	3.00E00	-3.00E00	3.00E-01

---

**Date/time formats of the Format function**

Date and time values are simply floating point numbers. The digits to the left of the decimal point define the date, the digits 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:

<b>Format name</b>	<b>Description</b>
<b>General Date</b>	Outputs the date and/or time without any formatting (i.e., typically in the short date format).
<b>Short Date</b>	Outputs the date in the short date format.

<b>Medium Date</b>	Outputs the date using month names abbreviated to three characters.
<b>Long Date</b>	Outputs the date in the long date format.
<b>Short Time</b>	Outputs the time in the short time format.
<b>Medium Time</b>	Outputs the time in a 12-hour format (hh:mm AM PM).
<b>Long Time</b>	Outputs the time in the long time format.

### User-defined date and time formats

User-defined formats can be composed of the following format codes.

**Important:** The format codes are case-sensitive.

<b>Character</b>	<b>Meaning</b>
<b>c</b>	Returns the complete date in the short date format and the complete time in hh:mm:ss format.
<b>d</b>	Returns the day as a number (1-31).
<b>dd</b>	Returns the day as a two-digit number (01-31).
<b>ddd</b>	Returns the weekday abbreviated to three letters (Sun-Sat).
<b>dddd</b>	Returns the weekday (Sunday-Saturday).
<b>dddddd</b>	Returns the full date in the short date format.
<b>ddddddd</b>	Returns the full date in the long date format.
<b>w</b>	Returns the weekday as a number (1-7), 1=Sunday, 2=Monday, ... 7=Saturday.
<b>m</b>	Returns the month as a number (1-12).
<b>mm</b>	Returns the month as a two-digit number (01-12).
<b>mmm</b>	Returns the month name abbreviated to three letters (Jan-Dec).
<b>mmmm</b>	Returns the month name (January-December).
<b>q</b>	Returns the quarter as a number (1-4).
<b>yy</b>	Returns the year as a two-digit number (00-99).
<b>yyyy</b>	Returns the year as a three- to four-digit number (100-9999).
<b>h</b>	Returns the hours as a number (0-23).
<b>hh</b>	Returns the hours as a two-digit number (00-23).

<b>n</b>	Returns the minutes as a number (0-59).
<b>nn</b>	Returns the minutes as a two-digit number (00-59).
<b>s</b>	Returns the seconds as a number (0-59).
<b>ss</b>	Returns the seconds as a two-digit number (00-59).
<b>AM/PM</b>	Use 12-hour format and display AM or PM
<b>am/pm</b>	Use 12-hour format and display am or pm
<b>A/P</b>	Use 12-hour format and display A or P
<b>a/p</b>	Use 12-hour format and display a or p

### Examples

Some examples are shown in the following table:

<b>Format</b>	<b>Result for February 26, 2020 at 18:45:15</b>
"m/d/yy"	2/26/20
"mmm d, yyyy"	Feb 26, 2020
"hh:nn AM/PM"	06:45 PM
"hh:nn:ss"	18:45:15

---

## String formats of the Format function

When formatting strings, user-defined formats of the **Format** function can be composed of the following codes:

<b>Character</b>	<b>Meaning</b>
@	Outputs a character or a space character. The output is usually right-aligned (see, however, also the ! sign).
&	Outputs a character or nothing.
<	Output all characters in lowercase.
>	Output all characters in uppercase.
!	The exclamation point switches the output to left-aligned.

---

## 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](#) statement).

See also: [Open](#)

### Example:

```
Sub Main
  A = FreeFile
  Open "TESTFILE" For Output As #A
  Write #A, "Test"
  Close #A
  Kill "TESTFILE"
End Sub
```

---

## Function (statement)

```
Function Name [(ArgumentList)] [As Type]
  [Statements]
  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 ends with [End Function](#). The [Exit Function](#) statement can be used to exit a function prematurely.

### 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 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:**

```
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:
  Statement(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.

Note: **Gosub ... Return** is provided only for compatibility with older Basic versions. It is recommended to use the statement **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:
Statements
```

Unconditional jump to the target *Label*.

The jump target *Label* must reside inside the same subroutine or function from which the command **Goto** is called.

Note: This statement is provided only for compatibility reasons. Use of **Goto** statements makes program code unnecessarily complicated. It is recommended to use structured control statements (**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 "
    Msg = Msg & Hex(x%) & " hexadecimal."
    MsgBox Msg
End Sub
```

---

## Hour (function)

**Hour** (*Expression*)

Returns the hour of 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
    [Statements]
ElseIf Condition Then
    [Statements]...
[Else
    [Statements]]
End If
```

*Or:*

```
If Condition Then Statements [Else Statements]
```

Executes a group of statements if *Condition* is true. Optionally executes a different group of statements 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** statement.

**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

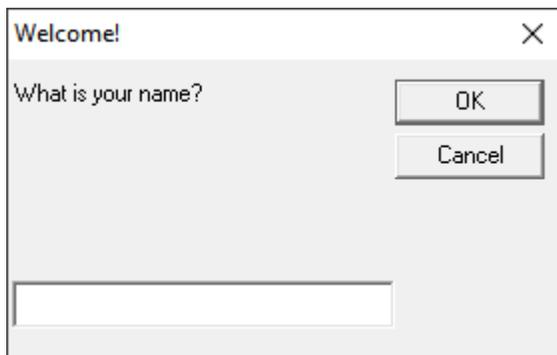
```

---

## 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](#)



```
Sub MakeFiles ()
    Dim i, FNum, FName                                ' Declare variables
    For i = 1 To NumberOfFiles
        FNum = FreeFile                               ' Next free file pointer
        FName = "TEST" & i
        Open FName For Output As FNum                ' Open file
        Print #FNum, "This is test #" & i           ' Write to file
        Print #FNum, "Here comes another "; "line"; i
    Next i
    Close                                             ' Close all files
End Sub
```

---

## LBound (function)

**LBound** (*Array* [, *Dimension*])

Returns the lowest index of 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)

**Len** (*String*)

Returns the length of a string.

See also: [InStr](#)

### Example:

```
Sub Main
    A$ = "BasicMaker"
    StrLen = Len(A$)      ' Result: 10
    MsgBox StrLen
End Sub
```



---

## Log (function)

**Log** (*Num*)

Returns the natural logarithm of a number.

The parameter *Num* must be greater than 0.

See also: [Exp](#)

### Example:

```
Sub Main
    For i = 1 to 3
        Print Log(i)
    Next i
End Sub
```

---

## Mid (function)

**Mid** (*String*, *Start* [, *Length*])

Returns a substring of the passed string *String*. It starts with the position *Start* and is *Length* characters long. If *Length* is omitted, the entire rest of the string is returned.

See also: [Len](#), [Left](#), [Right](#)

### Example:

```
Sub Main
    MidTest = Mid("Potato salad", 8, 4)
    MsgBox MidTest    ' Result: "sala"
End Sub
```

---

## Minute (function)

**Minute** (*Expression*)

Returns the minute of the given time as an integer number.

*Expression* is a numeric or a 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 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":

Symbolic constant	Value	Meaning
<b>MB_OK</b>	0	Display only the <b>OK</b> button.
<b>MB_OKCANCEL</b>	1	Display the buttons <b>OK</b> and <b>Cancel</b> .
<b>MB_ABORTRETRYIGNORE</b>	2	Display the buttons <b>Cancel</b> , <b>Retry</b> , <b>Ignore</b> .
<b>MB_YESNOCANCEL</b>	3	Display the buttons <b>Yes</b> , <b>No</b> , <b>Cancel</b> .
<b>MB_YESNO</b>	4	Display the buttons <b>Yes</b> and <b>No</b> .
<b>MB_RETRYCANCEL</b>	5	Display the buttons <b>Retry</b> and <b>Cancel</b> .
<b>MB_ICONSTOP</b>	16	Display the icon for critical messages.
<b>MB_ICONQUESTION</b>	32	Display the icon for questions.

<b>MB_ICONEXCLAMATION</b>	48	Display the icon for warning messages.
<b>MB_ICONINFORMATION</b>	64	Display the icon for informational messages.
<hr/>		
<b>MB_DEFBUTTON1</b>	0	Make the first button the default button.
<b>MB_DEFBUTTON2</b>	256	Make the second button the default button.
<b>MB_DEFBUTTON3</b>	512	Make the third button the default button.
<hr/>		
<b>MB_APPLMODAL</b>	0	The message box is application-modal. The <i>current task</i> does not accept input until the user closes the message box.
<b>MB_SYSTEMMODAL</b>	4096	The message box is system-modal. The <i>whole system</i> does not accept any input until the user closes the message box (use only for critical errors!).

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:

<b>Symbolic constant</b>	<b>Value</b>	<b>Meaning</b>
<b>IDOK</b>	1	Button <b>OK</b>
<b>IDCANCEL</b>	2	Button <b>Cancel</b>
<b>IDABORT</b>	3	Button <b>Abort</b>
<b>IDRETRY</b>	4	Button <b>Retry</b>
<b>IDIGNORE</b>	5	Button <b>Ignore</b>
<b>IDYES</b>	6	Button <b>Yes</b>
<b>IDNO</b>	7	Button <b>No</b>

### Example:

This example uses **MsgBox** to display a confirmation dialog.

```
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
        Msg = "You have chosen Yes."
    ElseIf Response = IDCANCEL Then
        Msg = "You have chosen Cancel."
    Else
```

```
    Msg = "You have chosen No."  
End If  
MsgBox Msg  
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:

```
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:

```
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:

```
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 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** statement is only valid inside the subroutine or function in which it resides.

If the script jumps to a label using the **On Error Goto** statement, you can resume execution at the calling place using the [Resume](#) statement. 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.

```
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 purposes, 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"  
480: "ByRef parameter has the wrong type"

---

## **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:

Mode	Description
<b>Input</b>	Sequential input. The file must already exist. <i>AccessMode</i> , if given, must be set to <b>Read</b> .
<b>Output</b>	Sequential output. The file is automatically created for output. If a file with the given name already exists, the file will be overwritten. <i>AccessMode</i> , if given, must be set to <b>Write</b> .
<b>Append</b>	Sequential output. Identical to <b>Output</b> , 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.

The optional parameter *AccessMode* restricts the type of access to the file:

AccessMode	Description
<b>Read</b>	Opens the file only for reading.
<b>Write</b>	Opens the file only for writing.
<b>Read Write</b>	Opens the file for reading and writing.

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 lile
    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 statement 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** statement, 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** statement.

*Expression* consists of the characters to be written.

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., 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 *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 # statement"
    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 ' Read lines
        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** statement 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 the section [Arrays](#)).

*Type* is the data type (see the section [Data types](#)).

### Dynamic arrays

To create a *dynamic* array, it must first be declared with the statements **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** statement.

Example: `ReDim A(42)`

In further invocations of the **ReDim** statement, 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.

**Note:** When executing the **ReDim** statement, the existing content of the array is deleted.

If you use the keyword **Preserve** together with this statement, 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:**

```
Dim B()  
ReDim B(10)  
.  
.  
ReDim Preserve B(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:**

```
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** statement and continues execution of the script.

See also: [On Error](#)

#### Example:

```
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
```

---

## 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 "
    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
```

---

## 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 given time as an integer number.

*Expression* is a numeric or a 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** [#] *FileNumber*, *Position*

Sets the file pointer to a new position in a file. This command works only on open files.

*FileNumber* is a number assigned to a file by **Open** statement.

*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

End Sub

```

---

## Select Case (statement)

**Select Case** *Expression*

```

[Case Value1
 [Statements]]

[Case Value2
 [Statements]]

.
.
.

```

```
[Case Else
  [Statements]]
```

**End Select**

Executes one of several statement blocks, depending on the value of the given expression (see also the section [Flow control](#)).

A **Select Case** structure must be closed with **End Select**.

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}. You can find a list of the special keys 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}"
```

Alt+F4:           "%{F4}"

Strg+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:

```
Sub Main
    X = Shell("Calc.exe", 1)           ' Invoke the Calculator application
    For i = 1 To 5
        SendKeys i & ".+)", True      ' Send keystrokes
    Next i
    Msg = "The 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
```

---

## Special keys supported by the SendKeys command

The following special keys can be used with the **SendKeys** statement:

Special key	String to pass
Escape	{Escape} or {Esc}
Enter	{Enter}
Shift key	Prepend the sign + (for example +{F9} for Shift+F9)
Alt key	Prepend the sign % (for example %{F9} for Alt+F9)
Ctrl key	Prepend the sign ^ (for example ^{F9} for Ctrl+F9)
Tab	{Tab}
Cursor left	{Left}
Cursor right	{Right}
Cursor down	{Down}

Cursor ip	{Up}
Home	{Home}
End	{End}
Page down	{PageDn}
Page up	{PageUp}
Backspace	{Backspace} or {BS}
Delete	{Delete} or {Del}
Insert	{Insert}
Print Screen	{PrtSc}
Ctrl+Break	{Break}
Caps lock	{CapsLock}
Num lock	{NumLock}
Numeric keypad 0	{NumPad0}
.	
.	
Numeric keypad 9	{NumPad9}
Numeric keypad /	{NumPad/}
Numeric keypad *	{NumPad*}
Numeric keypad -	{NumPad-}
Numeric keypad +	{NumPad+}
Numeric keypad .	{NumPad.}
F1	{F1}
.	
.	
F12	{F12}

---

## 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
- 1 if the number is > 0

See also: [Abs](#)

---

## 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:

<b>Value</b>	<b>Meaning</b>
--------------	----------------

---

- 1 Normal with focus (default value)
- 2 Minimized with focus
- 3 Maximized with focus
- 4 Normal without focus
- 6 Minimized without focus

See also: [AppActivate](#), [AppPlanMaker](#), [AppTextMaker](#), [CreateObject](#), [GetObject](#)

### Example:

```
Sub Main
    X = Shell("Calc.exe", 1)           ' Invoke 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 = "The 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)

**Sin** (*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)

**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)

**Sqr** (*Num*)

Returns the square root of a number.

*Num* may not be smaller than 0.

```
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 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 2
    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 a string.

If a positive number is passed, the resulting string starts with a space character. For negative numbers, a 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 casing of the letters 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)]  
    [Statements]  
    [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.

### 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 by appending a type suffix (e.g. % for **Integer**) to the variable name (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)
End Sub
```

---

## TimeSerial (function)

**TimeSerial** (*Hour*, *Minute*, *Second*)

Returns the time serial corresponding to the parameters *Hour*, *Minute* and *Second*.

See also: [DateSerial](#), [DateValue](#), [Hour](#), [Minute](#), [Now](#), [Second](#), [Time](#), [TimeValue](#)

### Example:

```
Sub Main
    Print TimeSerial(09, 30, 59)
End Sub
```

---

## TimeValue (function)

**TimeValue** (*TimeString*)

Returns a double precision serial number corresponding to the parameter *TimeString*. This parameter can be any string that represents a time.

See also: [DateSerial](#), [DateValue](#), [Hour](#), [Minute](#), [Now](#), [Second](#), [Time](#), [TimeSerial](#)

### Example:

```
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:

```
Sub Main
    MyString = "   <-Trim->   "
    TrimString = LTrim(MyString)           ' "<-Trim->   ".
End Sub
```

```

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 defined 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 dot notation: *Variable.Element*.

The **Type** statement may not be used inside **Sub** or **Function** statements.

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 highest index of the given dimension of an array.

If *Dimension* is not indicated, 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:

```
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 converted 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:

```
Sub Main
    Dim Msg
    Dim YourVal As Double
    YourVal = Val(InputBox$("Enter a number."))
    Msg = "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:

Type	Return value
Empty	0
Null	1
Integer	2
Long	3
Single	4
Double	5
Date	7
String	8
Object	9
Boolean	11

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
    [Statements]
Wend
```

Executes a group of statements 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
    [Statements]
End With
```

Executes a group of statements for the given object.

The **With** statement allows accessing the elements of an object without having to repeat the object name over and over again.

Note: **With** statements may 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
```

```

    .a = 65
    .d = 3.14
End With

With var2a
.a = "Hello"

    With .o
        .s = "Bye!"
    End With
End With

var1a.s = "TEST"
MsgBox var1a.a
MsgBox var1a.d
MsgBox var1a.s
MsgBox var2a.a
MsgBox var2a.o.s

```

```
End Sub
```

---

## Write # (statement)

**Write** #*FileNumber*, [*Expression*]

Writes data to a file.

The file must have been already opened with the **Open** statement in **Output** or **Append** mode.

*FileNumber* is the number assigned to the file by the **Open** statement.

*Expression* consists of one or more elements to output.

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 data
    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
```

---

## Year (function)

**Year** (*Expression*)

Returns the year of 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:

```
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:

- [Ribbon commands and their corresponding menu commands](#)

In this section you will find a table of all commands in the ribbon and the corresponding classic menu command.

- [Color constants](#)

This section contains a list of all pre-defined color constants.

---

## Ribbon commands and their corresponding menu commands

In this section you will find a table of all commands in the ribbon and the corresponding classic menu command.

**Tip 1:** You can switch the user interface between *ribbon* and *classic menus with toolbars* at any time. To do this, invoke the ribbon command **File | Options** (or, in the menus, the command **Tools > Options**). In the dialog, switch to the **Appearance** tab and click on the **User interface** button. An additional dialog box appears in which you can select the type of user interface you prefer.

**Tip 2:** Use the "hamburger menu" (the symbol  on the left in the Quick access toolbar) if you still want to access the classic main menu from the ribbon interface.

The table contains the following columns:

- **Left column: ribbon command**

The left column lists all ribbon commands in the program, sorted according to the order of the ribbon cards and in the following format: **Ribbon tab | Command**

- **Right column: corresponding command in the classic menu**

The right column lists all corresponding menu commands of the program in the following format: **Menu > Command**

Example: The ribbon command **Home | Paste** can be found under **Edit > Paste** in the classic menu interface.

Another entry >> is also added for some commands if the command can only be found in the submenu of an icon or in a dialog box.

Ribbon	Menu
 File   File   New	File > New
 File   File   Open	File > Open
 File   File   Close	File > Close
 File   Document   Save	File > Save
 File   Document   Save as	File > Save as
 File   Document   Save all	File > Save all
 File   Print   Page setup	File > Page setup
 File   Print   Print	File > Print
 File   File management   Versions	File > Revert to previous version
 File   File management   File manager	File > File manager
 File   Settings   Options	Tools > Options
 File   Settings   Customize >> Customize ribbon	Tools > Customize
 File   File   Exit (if no document open)	File > Exit
 <i>in the quick access toolbar</i>	Edit > Undo
 <i>in the quick access toolbar</i>	Edit > Redo
 <i>in the quick access toolbar</i>	View > Touch mode
 Home   Edit   Paste	Edit > Paste
 Home   Edit   Cut	Edit > Cut
 Home   Edit   Copy	Edit > Copy
 Home   Edit   Delete	Edit > Delete
 Home   Program   Start	Program > Start

Ribbon	Menu
 Home   Program   Step	Program > Step over
 Home   Program   Trace	Program > Trace into
 Home   Program   Reset	Program > Reset
 Home   Program   Insert/Delete breakpoint	Program > Insert/delete breakpoint
 Home   Program   Delete all breakpoints	Program > Delete all breakpoints
 Home   Insert   Dialog	Edit > Edit dialogs
 Home   Insert   Bookmark	Insert > Bookmark
 Home   Insert   SmartText	Insert > SmartText
 Home   Insert   Document	Insert > Document
 Home   Insert   Symbol	Insert > Symbol
 Home   Search   Search	Edit > Search
 Home   Search   Replace	Edit > Replace
 Home   Search   Search again	Edit > Search again
 Home   Search   Go to	Edit > Go to
 Home   Selection   Select all	Edit > Select all
 View   View   Bookmarks	View > Bookmarks
 View   View   Watch	View > Watch window
 View   Window   Windows >>	Window >
 View   Window   Windows >> Close all	Window > Close all

---

## 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 statements. 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:

<code>smoColorAutomatic</code>	= -1 ' Automatic (see below)
<code>smoColorTransparent</code>	= -1 ' Transparent (see below)
<code>smoColorBlack</code>	= &h0&
<code>smoColorBlue</code>	= &hFF0000&
<code>smoColorBrightGreen</code>	= &h00FF00&
<code>smoColorRed</code>	= &h0000&
<code>smoColorYellow</code>	= &h00FFFF&
<code>smoColorTurquoise</code>	= &hFFFF00&
<code>smoColorViolet</code>	= &h800080&
<code>smoColorWhite</code>	= &hFFFFFF&
<code>smoColorIndigo</code>	= &h993333&
<code>smoColorOliveGreen</code>	= &h003333&
<code>smoColorPaleBlue</code>	= &hFFCC99&
<code>smoColorPlum</code>	= &h663399&
<code>smoColorRose</code>	= &hCC99FF&
<code>smoColorSeaGreen</code>	= &h669933&
<code>smoColorSkyBlue</code>	= &hFFCC00&
<code>smoColorTan</code>	= &h99CCFF&
<code>smoColorTeal</code>	= &h808000&
<code>smoColorAqua</code>	= &hCCCC33&
<code>smoColorBlueGray</code>	= &h996666&
<code>smoColorBrown</code>	= &h003399&
<code>smoColorGold</code>	= &h00CCFF&
<code>smoColorGreen</code>	= &h008000&
<code>smoColorLavender</code>	= &hFF99CC&
<code>smoColorLime</code>	= &h00CC99&
<code>smoColorOrange</code>	= &h0066FF&

<code>smoColorPink</code>	=	<code>&amp;hFF00FF&amp;</code>
<code>smoColorLightBlue</code>	=	<code>&amp;hFF6633&amp;</code>
<code>smoColorLightOrange</code>	=	<code>&amp;h0099FF&amp;</code>
<code>smoColorLightYellow</code>	=	<code>&amp;h99FFFF&amp;</code>
<code>smoColorLightGreen</code>	=	<code>&amp;hCCFFCC&amp;</code>
<code>smoColorLightTurquoise</code>	=	<code>&amp;hFFFFCC&amp;</code>
<code>smoColorDarkBlue</code>	=	<code>&amp;h800000&amp;</code>
<code>smoColorDarkGreen</code>	=	<code>&amp;h003300&amp;</code>
<code>smoColorDarkRed</code>	=	<code>&amp;h000080&amp;</code>
<code>smoColorDarkTeal</code>	=	<code>&amp;h663300&amp;</code>
<code>smoColorDarkYellow</code>	=	<code>&amp;h008080&amp;</code>
<code>smoColorGray05</code>	=	<code>&amp;hF3F3F3&amp;</code>
<code>smoColorGray10</code>	=	<code>&amp;hE6E6E6&amp;</code>
<code>smoColorGray125</code>	=	<code>&amp;hE0E0E0&amp;</code>
<code>smoColorGray15</code>	=	<code>&amp;hD9D9D9&amp;</code>
<code>smoColorGray20</code>	=	<code>&amp;hCCCCCC&amp;</code>
<code>smoColorGray25</code>	=	<code>&amp;hC0C0C0&amp;</code>
<code>smoColorGray30</code>	=	<code>&amp;hB3B3B3&amp;</code>
<code>smoColorGray35</code>	=	<code>&amp;hA6A6A6&amp;</code>
<code>smoColorGray375</code>	=	<code>&amp;hA0A0A0&amp;</code>
<code>smoColorGray40</code>	=	<code>&amp;h999999&amp;</code>
<code>smoColorGray45</code>	=	<code>&amp;h8C8C8C&amp;</code>
<code>smoColorGray50</code>	=	<code>&amp;h808080&amp;</code>
<code>smoColorGray55</code>	=	<code>&amp;h737373&amp;</code>
<code>smoColorGray60</code>	=	<code>&amp;h666666&amp;</code>
<code>smoColorGray625</code>	=	<code>&amp;h606060&amp;</code>
<code>smoColorGray65</code>	=	<code>&amp;h595959&amp;</code>
<code>smoColorGray75</code>	=	<code>&amp;h404040&amp;</code>
<code>smoColorGray85</code>	=	<code>&amp;h262626&amp;</code>
<code>smoColorGray90</code>	=	<code>&amp;h191919&amp;</code>
<code>smoColorGray70</code>	=	<code>&amp;h4C4C4C&amp;</code>
<code>smoColorGray80</code>	=	<code>&amp;h333333&amp;</code>
<code>smoColorGray875</code>	=	<code>&amp;h202020&amp;</code>
<code>smoColorGray95</code>	=	<code>&amp;hC0C0C0&amp;</code>

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:

<code>smoColorIndexAutomatic</code>	=	-1	'	Automatic (see below)
<code>smoColorIndexTransparent</code>	=	-1	'	Transparent (see below)
<code>smoColorIndexBlack</code>	=	0	'	Black
<code>smoColorIndexBlue</code>	=	1	'	Blue
<code>smoColorIndexCyan</code>	=	2	'	Cyan
<code>smoColorIndexGreen</code>	=	3	'	Green
<code>smoColorIndexMagenta</code>	=	4	'	Magenta

<code>smoColorIndexRed</code>	=	5	'	Red
<code>smoColorIndexYellow</code>	=	6	'	Yellow
<code>smoColorIndexWhite</code>	=	7	'	White
<code>smoColorIndexDarkBlue</code>	=	8	'	Dark blue
<code>smoColorIndexDarkCyan</code>	=	9	'	Dark cyan
<code>smoColorIndexDarkGreen</code>	=	10	'	Dark green
<code>smoColorIndexDarkMagenta</code>	=	11	'	Dark magenta
<code>smoColorIndexDarkRed</code>	=	12	'	Dark red
<code>smoColorIndexBrown</code>	=	13	'	Brown
<code>smoColorIndexDarkGray</code>	=	14	'	Dark gray
<code>smoColorIndexLightGray</code>	=	15	'	Light gray

Tip: 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.

---

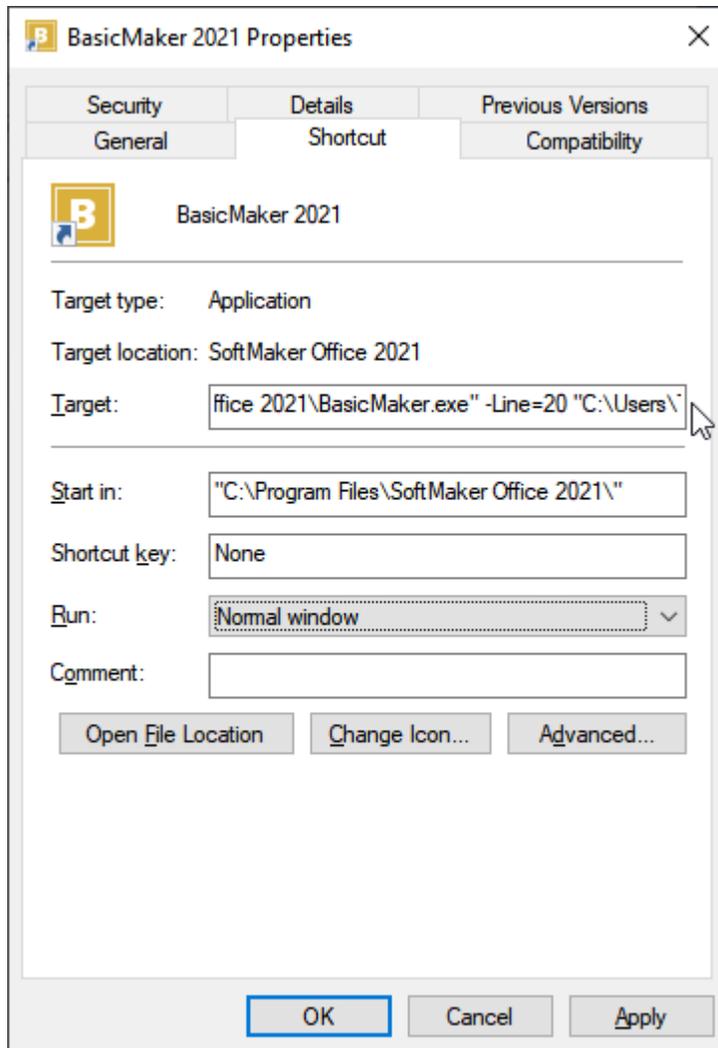
## Command-line parameters

*Note:* The *command-line parameters* described here only work on Windows.

Command-line parameters allow you to specify that BasicMaker is started immediately with a specific program option rather than with the usual default behavior. Example: You would like BasicMaker to jump to line 20 of the specified script directly upon startup.

To insert a command-line parameter, proceed as follows:

1. Create a new shortcut to BasicMaker on the desktop. Ideally, give the link a distinctive name in order to distinguish it more clearly.
2. Choose the properties of the shortcut: Right-click on the link for the context menu and select the entry **Properties**.
3. The following dialog box with the **Shortcut** tab will then appear:



4. In the input field **Target** after the file path "... \BasicMaker.exe", enter the desired parameter from the table below. In the figure, for example, this is the parameter **-Line**.

**Important:** There must be a **space** in front of the parameter and the parameter starts with a hyphen.

5. Confirm with **OK**.

When you open TextMaker via this newly created link (double-click the link), the program will start directly with the behavior of the parameter that was used.

### Command-line parameters

Parameter	Description
-N	BasicMaker starts without opening a new default script.
-FO	BasicMaker starts with an open dialog box for selecting a file.

**-P"Path\FileName"**

BasicMaker starts and prints the specified script directly on the *default printer*.

**-Q"PrinterName","Path\FileName"**

Note: *No* space is inserted within the parameter.

BasicMaker starts and prints the specified script directly on the *specified printer*.

**-Line=xxx "Path\FileName"**

Note: A space is required here before "Path\FileName".

BasicMaker starts with an open dialog box for selecting a document template.

**-S "Path\FileName"**

Note: A space is required here before "Path\FileName".

BasicMaker starts the specified script in silent mode (BasicMaker remains hidden in the background).



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