

User's Guide

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**MobiSystems®**  
**OfficeSuite**

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For Symbian S60 SmartPhones

 **MobiSystems®**

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# Getting Started

## System Requirements

Any Symbian S60 2<sup>nd</sup> or 3<sup>rd</sup> edition running device.

## Installation and Un-installation

### *Installing OfficeSuite*

1. Download OfficeSuite.zip (Windows) or .sit (Mac OS) file on your desktop PC.
2. Extract the zip or sit archive file to desired folder on your desktop PC. The archive file contains:
  - a. Installation SIS file for the OfficeSuite
  - b. User's guide in Acrobat PDF format
3. Bluetooth
  4. Enable the Bluetooth transfer on both the desktop PC and SmartPhone and use a Bluetooth connection to install the SIS files on your mobile device.
  5. The newly transferred SIS file will appear as new messages in the inbox of your phone. Open the Inbox and start it to install the program on your mobile phone.
  6. Follow the instructions on the screen to install the software. Once the installation is complete the OfficeSuite icon will appear in the default install directory on your phone.

#### USB Cable Connection

1. Connect your phone to your desktop PC and make sure that the Nokia PC Suite software is installed and enabled on your PC.

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The Nokia PC Suite is free of charge and comes with your mobile phone. You can also obtain the software from <http://www.nokia.com>.

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2. On the desktop PC start the File Manager that is part of the Nokia PC suite.
3. Use the file manager to copy the extracted SIS files to one of the following directories on your mobile phone:
  - a. Nokia Phone Browser\**<phone>**\Phone memory\Nokia\Installs
  - b. Nokia Phone Browser\**<phone>**\<memory card>\Nokia\Installs

Where **<phone>** is your mobile phone as it appears in the file explorer and respectively **<memory card>** is the memory card that is currently inserted in the phone.

4. On your mobile use the *applications button*, to go the **Menu form**.

5. Select **Settings > Tools > Manager** to start the applications manager.
6. Select Diets from the list of applications and select **Install** from the *Options menu*.
7. Follow the on-screen instructions to complete the installation.

## ***Un-installation***

To delete the OfficeSuite program from your mobile device:

1. Go to the Application Manager and select the OfficeSuite.
2. With the left soft key select **Options>Remove..**
3. A message notifying you of the deletion will appear. Press **Yes** to confirm.

## **Registration**

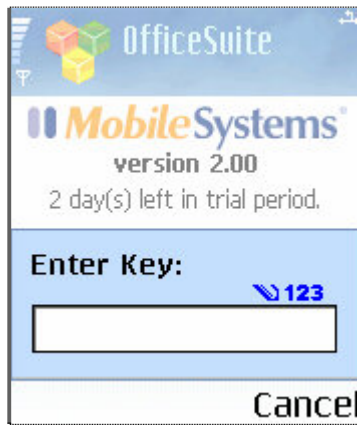
MobiSystems OfficeSuite is a downloadable shareware product available for limited free evaluation period or registration at our home site: [www.mobi-systems.com](http://www.mobi-systems.com). A license key for the software will be sent to the e-mail address specified during your order shortly. The *license key* is a numeric combination of 2x5 symbols (for example: **32454-11562**).

To switch to the full unlimited version of MobiSystems OfficeSuite:

1. Start the software from the applications launcher. The following form will appear.



2. Select **Options** and then **Register** from the popup menu that will appear.
3. Type in your *license key* in the provided space.



4. Tap on **OK** to confirm or **Cancel** to abort the entry.

# OfficeSuite File Explorer

To start OfficeSuite, just go to the *application menu* on your SmartPhone and select the icon below.



Whenever you start the program the *OfficeSuite File Explorer* will open. Through the file explorer you can browse all directories and folders available on your phone. The explorer also allows you to create new folders, documents and sheets, rename documents, change files locations, open, delete, find, send documents, and change file formats. You can access these options from the **Options menu** in the *File Explorer*.

## Browsing Directories and Files

The OfficeSuite *File Explorer* allows you to browse files and directories on both phone and memory card. You can open folders and subfolders and work with files stored anywhere on your phone. To open a directory or file select the item in the file explorer and use the file explorer menu or the 5-navigaiton center button to open it.



## Using the 5-way navigation button

The easiest way to browse through or open the available directories on your phone is by using the 5-way navigation key. You can use the 5-way navigation key in the following ways:

**Selection Key** – opens highlighted directory or file

**Arrow up** – moves highlight up by one file or directory

**Down arrow** - moves highlight down by one file or directory

**Left Arrow** – scrolls a level down in the directory tree and opens highlighted directory or file

**Right Arrow** – scrolls one level up in the directory tree

## File Explorer Menu

To create a new file, open existing ones, and send files to other mobile devices or to the PC you can use the *File Explorer Menu*. To access the *File Explorer Menu* select **Options** in the File Explorer screen. The following options are available in the File Explorer:

**New** - by choosing **Options>New** you can create new Folders, Documents or Sheets on the phone.

**File** - allows you to **Open, Delete, Find, and Rename** a file or worksheet. With this option you can also **Copy** and **Move** a file to a desired location on the phone.

**Send** - You can send files and worksheet from the File Explorer to other Smartphones through wireless connections such as Bluetooth and Infrared:

**Register**- allows you to enter the Registration screen and register the program

**About** – allows you to access general information on the product such as the product version and web address and the included Help Manual.

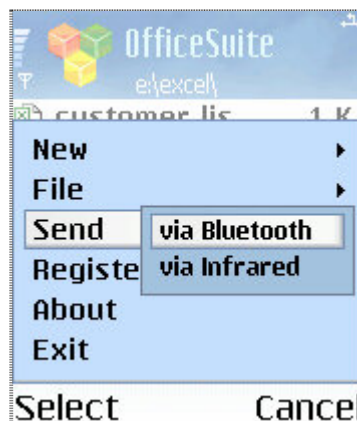
**Exit** – exits the program.

## Transferring Files

The OfficeSuite allows you to transfer files to the PC and to other devices through the following methods:

- **Infrared “Beaming”** – Select “Connect Infrared” on the phone to enable the phone’s IR. Line up the phone with the PC infrared port and Windows will detect the phone. Right click on the files which you wish to send and choose “Send to IR recipient”. The file will be transferred to the Inbox of the phone. To send a file from the phone to the PC enable the IR on the phone and select the file in the File Explorer. Choose **Options>Send via Infrared** and the file will be transferred. In the same way you can send/receive files to/from other Infrared enabled devices.

- **Bluetooth Connection** – On the phone turn on the Bluetooth from **Connect>Bluetooth>Bluetooth On**. Go to the second tab where you will be able to see all Bluetooth devices in the range. Search for the PC connection and when it is established right click on the file which you wish to send and select “Send to Bluetooth” and the name of your phone. The file will be transferred to the inbox on the phone. To send files from the phone to the PC establish a connection with the PC and when the phone and PC are paired select the file which you wish to send and choose **Options>Send>via Bluetooth**. Select the PC to send the file. To send files to other Bluetooth devices turn on the Bluetooth of your phone and locate the other Bluetooth device. Go to the File Explorer to select the file which you wish to transfer. Choose **Options>Send>via Bluetooth**.



- **USB Cable** – to send files through this method connects the phone to the PC via USB cable and use the Nokia PC Suite to transfer the files to and from the phone.

- **Attachment in Email message** – to be able to receive a document as an e-mail message you need to set-up e-mail on your phone. Please refer to the phone user manual for details on setting up email. After setting up the email you can access received messages from the **Messaging Application>Inbox** on the phone and open the files directly with the OfficeSuite. You can also move the files from the Inbox to any other folder in the OfficeSuite file explorer.

To view attachments go to the **Messaging Application> Inbox** and open the message which contains the attachment. Highlight attachment and press the 5 navigation key center. You will see the Attachment menu where you can choose to Retrieve, Open or Save the attachment. Save the file in any folder and open it with the OfficeSuite.





- **Memory Card Reader** – You can copy files from the PC to a memory card reader and insert the memory card to the phone. From the phone to the PC save the files to the memory card and open the files on the PC using the PC memory card reader.

## File Formats and Format Converting




In addition to the MobiSystems native document formats for text documents, the program allows you to work with some external native text and spreadsheet files without the need of any format conversion.

The file formats that MobiSystems OfficeSuite recognizes and the program is capable to open and modify are:

### Text formats:

-  MWD – this is the native file format of MobiSystems Docs. MWD documents can be kept on both memory card and the main memory of your PDA. In the *file explorer* the MWD documents appear with MWD extension.
-  DOC – Microsoft Word text documents. Can be kept in both the main memory and on memory card. You can directly access DOC files from memory cards.
-  TXT – the commonly used TXT format ensures the compatibility of OfficeSuite with third party desktop programs. TXT files can be saved in both the main memory and on memory cards.
-  RTF – the rich text format is supported by almost any desktop text editor. The OfficeSuite is the only OfficeSuite for Symbian to support RTF files.

### Spreadsheet formats:

-  XLS – this is the native file format of Microsoft Excel. XLS documents can be kept on both memory card and the main memory of your PDA. This format ensures the compatibility between MobiSystems Spreadsheet and the commonly used Microsoft Office software.
-  XML – The XML files are supported by Microsoft Excel 2003 and XP. XML files can be stored in both the main memory and on memory card.
-  CSV – the commonly used CSV (comma separated) format ensures the compatibility of OfficeSuite with third party desktop programs. The CSV format is not capable of saving and showing the cells formatting. Workbooks in this format can contain only one spreadsheet.

## Changing the Format of Existing Files

OfficeSuite allows you to change the format and/or the destination of an existing file for easier data processing and exchange. To change the file format of an existing file:

1. Open the file.
2. Choose **Options>File>Save As**.
3. Choose the new destination of the file and the new file format and press Ok  
You can choose among **Excel Workbook (XLS)**, **XML Spreadsheet (XML)**, and **Comma Delimited (CSV)** file formats for worksheets and among **MobiSystems Docs Format (MWD)**, **Text Documents (TXT)**, **Microsoft Word Documents (DOC)**, and **RTF** for text documents.
4. Press Ok to confirm.

# Working with Text Documents

The OfficeSuite has two main modes which you can use to view and edit your documents – *View Mode* and *Edit Mode*.

## View Mode

Whenever you open a document it is opened by default in *View Mode*. This mode facilitates your viewing of a document and allows you to easily scroll the information in files. To open an existing document, select it in the file list in the file explorer and then choose **Options>File>Open**. Alternatively, you can press the 5-way navigation center key and the file will open.

## View Mode Menu

If a document is not in *View Mode* you can access the *View Mode Menu* by choosing **Options>View Mode**. The *View Mode Menu* has the following menu items:

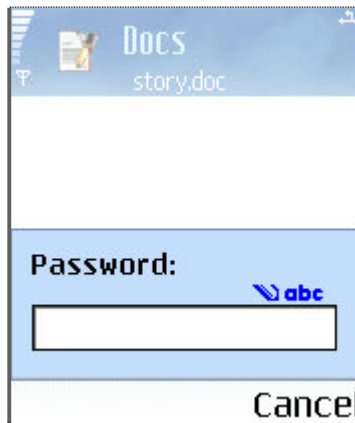
## *Edit Mode*

By choosing **Options>Edit Mode** you will enter the *Edit Mode* where you can edit the document you have opened. *Edit Mode* has its own edit menu which is explained further down this manual.

## *File*

With the File submenus you can manage the currently opened document in the following ways:

- **Save**- saves the document without changing its title, location or format
- **Save As** - saves the document and allows you to choose a new title, location and/or file format. You can choose among these file formats: native DOC, RTF, TXT and MWD and any desired location on the phone.
- **Protect** – The OfficeSuite allows you to protect your files from unauthorized viewing through assigning passwords. To assign a password to a file open it and choose **Options>File>Protect**. Enter a password in the space provided. Choose Ok to confirm. Upon closing the password protected file you need to save it so that the encryption is saved. Next time you open the file you will be requested to enter your Password. To remove the Password open the file and choose **Options>File>Unprotect** and Save the file again to keep the changes.



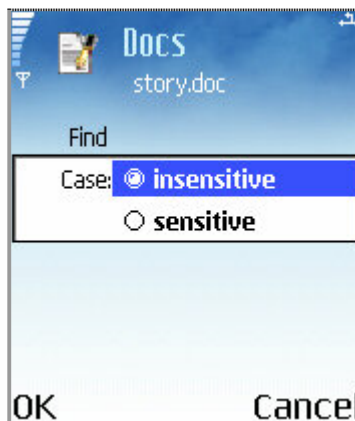
- *Close* – closes the currently opened file.

## ***Toggle Full Screen***

To use the whole screen of your phone as a text entry work area, use the **Toggle Full Screen** option that OfficeSuite provides. To switch to *Full Screen* choose **Options>Toggle Full Screen**. To exit full Screen choose **Options>Toggle Full Screen**.

## ***Search***

The OfficeSuite allows you to locate words or part of words in a document. To search for a word choose **Options>Search >Find** and enter the word that you want to be found in the text box provided. If you want small and capital letters to be considered during the search, enable the Case sensitive option. You can use **Options>Search >Find next** to locate the next entry for the search. Alternatively, you can use the shortcuts (3) and (6) keys from the keyboard for **Find** and **Find Next** respectively.



## ***Go to***

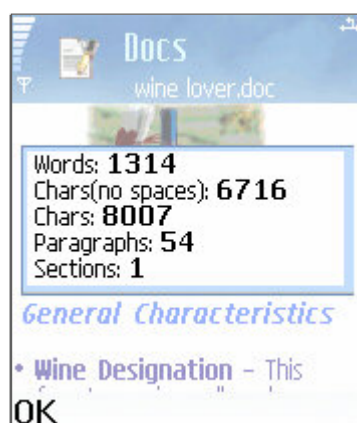
The ***Go to*** option redirects you to the top, bottom or available bookmarks in the document. Alternatively, you can use the keyboard shortcuts: (1) to go to Top, (0) to go to the Bottom and (2) to go to Bookmark.

## ***Zoom***

The Zoom feature allows you to zoom in and out of the text increasing or decreasing the text size. The supported zoom sizes are 25%, 50%, 75, 100%, and 200%. In addition, through the Custom option in the zoom pop-up menu, the program allows you to specify a custom zoom percent ranging from 100% up to 200%.

## ***Word Count***

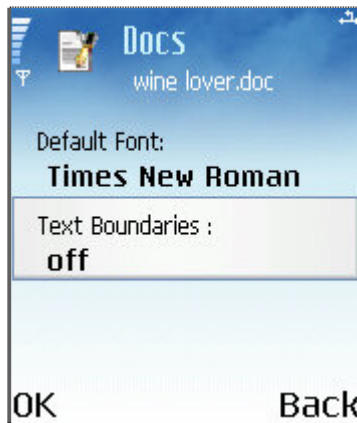
The **Word Count** option gives you the ability to count the Words, Characters with and without Spaces, Paragraphs and Sections in the currently opened document.



To close the Word Count form choose Ok .

## ***Options***

The OfficeSuite allows you to set a default Font to view all documents if you do not have the font which is used in the document installed to the phone. Depending on your smartphone model you can have different fonts installed. You can set the default font through **Options > Preferences** and browse through all available fonts on the phone to set the desired one. If on the other hand the font used in the document is available on the phone the document will be opened with it.



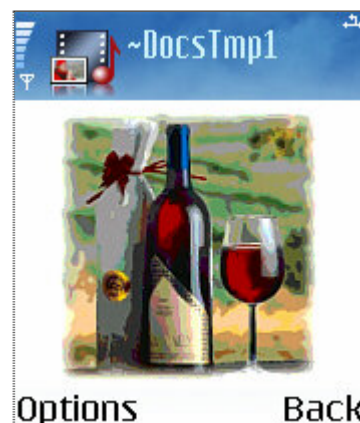
## *Help*

The Help option allows you to access the Help Manual for OfficeSuite and the general information of the program including version, web and mailing address

## *Scrolling*

View Mode allows you to scroll by lines and by full pages. Use the 5-way navigator up and down arrows to scroll one line at a time. Use the 5-way navigator left and right arrows to scroll full pages.

In View Mode you can preview pictures and images, scroll through tables and through any hyperlinks available in the document. To preview an image scroll to the image so that it is visible on the screen and press the 5-way navigation key. The image will be selected. Choose *Preview* with the left soft key and the image will be opened in a separate screen.



To scroll within a table, move to the table and press the 5-way navigation key. The table border will change into green and you will see a **Scroll option** in the low left corner of the screen. Press the left soft key under **Scroll** and then use the arrow left and arrow right keys to move through the table.



To follow a hyperlink scroll to the hyperlink so that it is visible on the screen and press the 5-way navigation center key. The hyperlink will be highlighted and you can press Go to Link to follow it.

## Editing Documents

To manage documents the OfficeSuite has a special *Edit Mode*. To enter into *Edit Mode* open a document and choose **Options>Edit Mode**.

### Edit Mode Menu

The *Edit Mode Menu* has the following menu items:

#### *View Mode*

By choosing **Options >View Mode** you will enter the *View Mode* for the document. The View mode functionality was described earlier in this document.

#### *File*

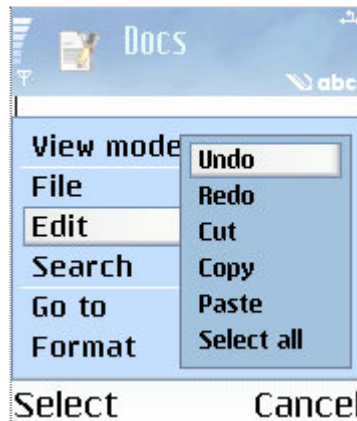
With the File submenus you can manage the currently opened document in the following ways:

- **Save** - saves the document without changing it's title, location or format
- **Save As** - saves the document and allows you to choose a new title, location or file format if you wish.
- **Check Spelling** - the OfficeSuite has a built in spell checker which works with the dictionaries which you have installed together with the program.

- **Protect** - you can use this option to and protect your private documents from unauthorized opening. Choose **Options>File>Protect** and enter a password in the space provided. Choose Ok to confirm. Upon closing the password protected file you need to save it so that the encryption is saved. Next time you open the file you will be requested to enter your Password. To remove the Password open the file and choose **Options>File>Unprotect** and Save the file again to keep the changes.

- **Close**- closes the file.

## *Edit*



With the Edit submenus you can manage the text inside a document in the following way:

- **Undo** - if you wish to undo the latest actions you have done to the document choose Undo and the file will return to its original state.
- **Redo** – if you wish to redo the action which you have undone choose Redo
- **Cut** saves the contents of the selection in the systems clipboard and the cut selection area is deleted. The operation is used altogether with Copy and Paste. To cut a cell value select the cell and choose **Edit>Cut**
- **Copy** – the contents of the clipboard is copied in the selected area. The copy selection area must be of the same type (rows or columns) as the data in the clipboard. The operation is usually used after Cut as well as in combination with Paste..
- **Paste** – Copies the contents of the clipboard usually selected with Copy or Cut, in the highlighted area of rows or columns. The size of the paste selection area should be the same as the contents of the clipboard.
- **Select All** – selects the entire contents of the document both text and images

## *Search*

With the Search submenus you can locate and replace a word or part of a word within the document. The Search menu has the following submenus:



- **Find** – to enter the words you wish to locate choose **Search>Find** and enter the text in the screen. Choose Find.
- **Find next** – to find the next entry in the text choose **Search>Find Next**  
You can also use the Left and Right Soft Keys from the keyboard as short cuts respectively as Find and Find next.
- **Replace** – to replace text in your document choose **Search>Replace** and enter the text which you wish to replace and the new text. Choose Replace. If you want small and capital letters to be considered during the search, enable the Case sensitive option



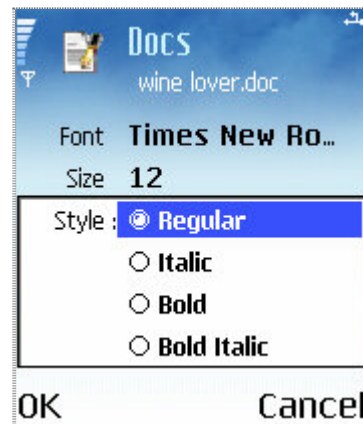
## ***Go to***

Redirects you to the top, bottom or available bookmarks in the document.

## ***Format***

With the Format submenus you can enter the Font and Paragraph screens to manage the Fonts and Paragraph alignment in the document.

- **Font** – to change your Font Preferences choose **Format>Font** and you will enter the Font Preview screen. By scrolling down the list with the 5-way navigation key you will be able to access the settings for the Font. Any changes made in the form will reflect in the text entered thereafter. If text has been selected before the opening of the Font Preferences form, it will be reformatted according to the changes.



- To choose a Font scroll to Font and press the 5-way navigation center key. You will access the list of all available fonts on the phone.
- To change the font size scroll to Size and enter the desired font size.
- To change the Font to Italic, Bold or Bold Italic choose Style and select the desired option with the 5-way navigation center key.
- To enable underline scroll to Underline and choose On.
- To change to Superscript or Subscript choose Script and scroll to the desired script
- To have the formatting changed to Strikethrough formatting choose Strike > Strikethrough or Double Strike. This way when you start to enter new text it will be formatted to Strikethrough or Double Strike. You can also select already written text and choose Strikethrough or Double Strike to reformat it. To remove Strikethrough or Double Strike formatting choose Strike>off.
- To change the Font color choose Color and browse through the different color with the left and right arrows from the 5 –navigation key
- To change the background color of the text select the text and choose Format>Font>Highlight. You can browse through the different colors with the left and right arrows from the 5 –navigation key. Alternatively, use the 5 – navigation center key to open the form of available colors and browse through it.

- **Paragraph** – to change the alignment of a paragraph select the paragraph and choose **Format>Paragraph**. Use the arrow left and arrow right keys to scroll through the four options – Left, Center, Right and Justify. Choose Ok to confirm the new alignment.

## ***Zoom***

Just like in View Mode you can change the Zoom of the document to 25%, 50%, 75%, 100%, 200% or customize zoom to your preference..

## ***Word Count***

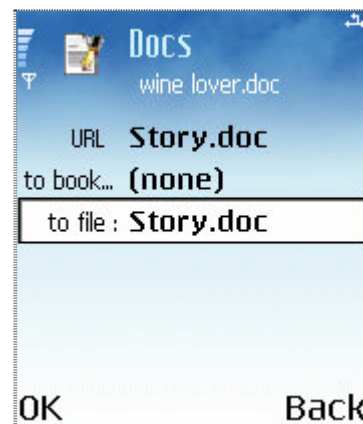
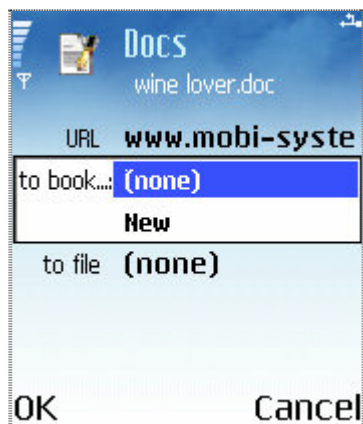
This option gives you a count of the Words, Characters with and without spaces, Paragraphs and Sections in the currently opened document.

## ***Hyperlink***

MobiSystems OfficeSuite allows you to create hyperlinks to URLs, local bookmarks in the current document and other files. In case the hyperlink points to a URL MobiSystems OfficeSuite will use the default web browser on your handled device, if any, to open the Internet site to which the link refers to.

To add a hyperlink:

1. Select the text to which you want to assign the link.
2. Choose **Options>Hyperlink >Add hyperlink**.
3. In the next form use the up and down arrows in the 5-navigation keys to select the type of the hyperlink- to **URL**, **Bookmark** or **file**.
4. To add a hyperlink to URL, type the URL in the text box provided.
5. To add a hyperlink to an existing bookmark in the current document select the particular bookmark from the list of available bookmarks.
6. To add a hyperlink to a file choose “**to file**”, browse the files on your phone and select the particular file.



To remove a hyperlink, simply select the hyperlink and choose **Options> Hyperlink> Remove**.

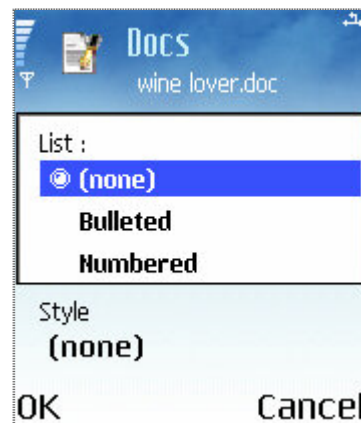
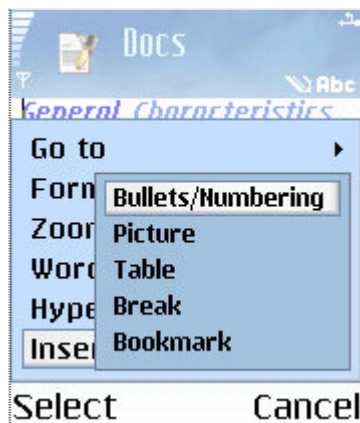
## ***Insert***

The OfficeSuite allows you to format your documents by inserting Bullets, Numbering, Pictures, Tables, Breaks and Bookmarks

## ***Bullets***

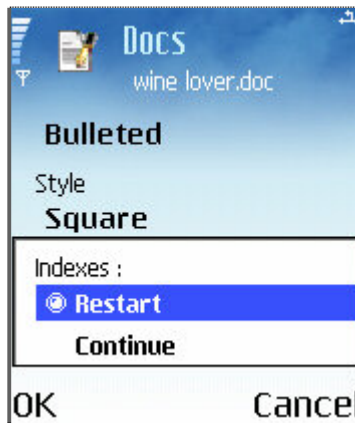
The OfficeSuite has three different styles of bullets – Bullet, Square and Empty bullet. .

To change the style of existing bullets and numbering or to insert ones with a new style, use the advanced bullets and numbering form. To open the bullets and numbering preferences, choose **Insert > Bullets/ Numbering**.



To insert bullets with selected style:

1. Choose **Insert > Bullets/ Numbering**.
2. In the next screen use the 5-way navigation key to scroll up and down the bullets settings. Choose the **List** section to choose Bulleted.
3. Scroll down to the **Style** section.
4. Select **Style** and choose the desired style for the Bullets. Choose Ok to confirm.
5. If you have already used bullets in your document and want to start over a new enumeration, and/or respectively change the bulleted style, choose **Indexes>Restart**.
6. To continue a bulleted text, choose **Indexes>Continue**.



To change the style of existing bullets:

1. Select the bulleted text in the document.
2. Open the bullets/numbering preference by selection **Insert Bullets/ Numbering**.
3. Choose **Style**.
4. Select a new style from the list and tap **OK**.
5. The changes will be automatically applied to the selected text.

## *Numbering*

OfficeSuite supports several numbering styles, including numeric, alpha-numeric, and Roman styles.

The numbering settings are accessible through the **Options>Insert Bullets / Numbering**

Numbered text can be inserted or modified in the similar way described in [Bullets](#).

If you have already used numbering in your document and want to start over a new enumeration, and/or respectively change the numbering style, choose **Indexes> Restart**.

To continue a numbered text, choose **Indexes> Continue**.

## *Picture*

MobiSystems OfficeSuite allows you to insert pictures and images from your phone or from the phone's memory card. You can insert native BMP, PNG, GIF and JPEG files. To insert a picture choose **Options>Insert >Picture** and browse the phone to locate the desired picture. Choose Ok to insert.

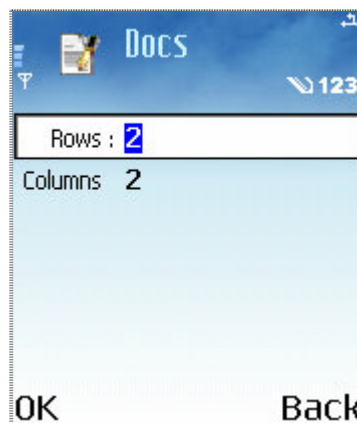
To take a closer look at an image, use the Image Preview feature by scrolling to the image in View Mode and pressing the 5-way navigation key. Choose Preview and the image will be displayed in a new screen.

## ***Table***

If you need to organize data for better comprehension, you can use the Table option.

To insert a table:

1. Choose **Insert >Table**.
2. A new form will appear where you can specify the number of rows and columns for the table.
3. Click **OK** to confirm and insert the table

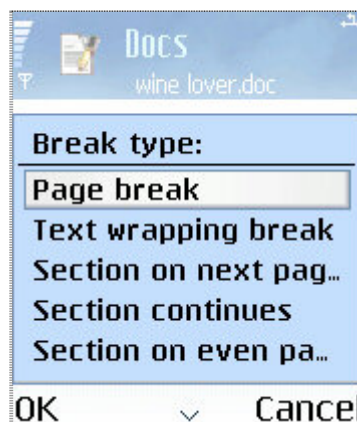


To insert text into a table's cell, simply tap in the cell and begin writing.

MobiSystems OfficeSuite has the unique feature of allowing images and even other tables to be embedded in an existing table.

## ***Page Breaks***

The OfficeSuite offers several different Page Breaks which you can insert to format your pages. To access the Page Break list from **Insert>Break**.



## ***Bookmarks***

The bookmark feature allows you to create virtual marks at desired places in your text document so you access these places easier later.

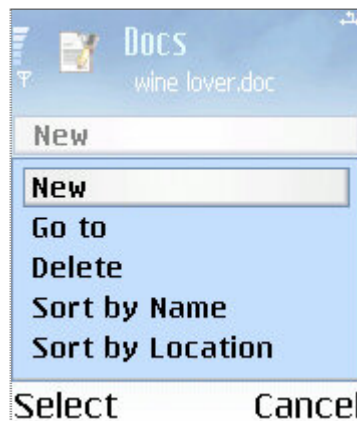
To add a bookmark:

1. Select the text to which you want to assign a book mark
2. Choose **Insert>Bookmark>Options >New** and type in a name for the bookmark in the box provided.
3. Choose **Done** and the bookmark will be set.
4. To go to a bookmarked place:
5. Choose **Options>Go to>Bookmark**.
6. Choose the desired Bookmark by scrolling with the 5-way navigation key and choose **Done**.
7. The program will return to the chosen bookmark in the document.

To delete a bookmark:

1. Choose **Insert> Bookmark>Options>Delete**.

You can sort the list of existing bookmarks by Name (alphabetically) and by Location. To do that choose **Insert>Bookmark>Options>Sort by Name** or **Insert> Bookmark>Options>Sort by Location**.



## ***Options***

MobiSystems OfficeSuite allows you to set a default Font which you wish to use in the documents and enable spell checker and quick text entry on the phone. To do that choose **Options>Preferences/Spelling Options**

## Preferences

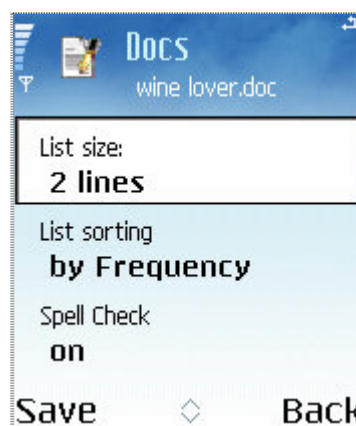
To enter the *Preference form* choose **Options>Preferences**. In the Preferences screen you can set the default font which you wish to use to view documents. The default font is used to display the text in your documents when there is no other font installed to the phone. To browse through the available fonts on the phone use the arrow left and arrow right keys from the 5-way navigation key.

You can also choose to display the text boundaries such as all available breaks in the document. To do that choose **Text Boundaries On/Off with the** arrow left and arrow right keys form the 5-way navigation key.

## Spelling Options

MobiSystems OfficeSuite comes with an integrated spell checker and a fast text-entry program with free spelling dictionaries in 6 languages - English, German, Spanish, French, Italian and Dutch. This allows the following spelling features:

- Suggestion of correct alternatives for misspelled words
- Suggestion popup lists on each entered character
- Underlining of misspelled words
- Spell checks for imported documents
- 4 spelling dictionaries for each of the supported languages



To customize the spelling features in OfficeSuite, choose **Options> Spelling Options** while you are in Edit Mode.

- **QuickWrite** - when this option is enabled MobiSystems OfficeSuite will suggest words by trying to predict the word you are typing on every character input. To disable the word prediction, set this field to **Off**.
- **Show after** – this option allows you to specify how many letters of the word should be entered before the pop-up suggestion list appears.

- **List Size** - to change the number of words shown in the pop-up suggestion list, open the list with available choices with the 5-way navigation center key and select a length between 2, 3, or 4 words.
- **List Sorting** - this field determines the sorting of the words in the pop-up suggestion list. You can choose between sorting by word usage frequency or alphabetical order. The sorting by frequency significantly increases the typing speed. The more you use MobiSystems OfficeSuite, the more accurate and relevant the suggestion lists gets.
- **Spell Check** - when this feature is enabled, MobiSystems® OfficeSuite will automatically check and underline all misspelled words. To disable the misspelled words underlining, set the field to *Off*.

## ***Dictionaries Management***

Mobile Systems' dictionary databases have been developed to meet the requirements of a wide range of users. Their entries have been selected and compiled after thorough analyses of various texts and speech patterns.

The OfficeSuite comes with dictionaries in 6 different languages – English, German, Italian, Spanish, French and Dutch. The dictionaries are included in the installation .sis file for the OfficeSuite program. When you install the program the installation allows you to choose the dictionaries which you wish to install from a list. To install a dictionary check the dictionary checkbox next to it. To remove a dictionary from the list of dictionaries to be installed uncheck the checkbox next to its name.

The dictionaries will be located by the program the first time you open a file in Edit Mode. Choose Ok with the left soft key to confirm adding the dictionaries to the program. After that again while you are in Edit Mode you can choose the dictionary which you wish to use. To set the dictionary choose **Options>Spelling Options**. In the Dictionary field use the arrow left and arrow right keys scroll through the dictionaries. After you choose the desired dictionary press **Save**.



## ***Help***

You can access the Help for the Office Suite from **Options>Help**.

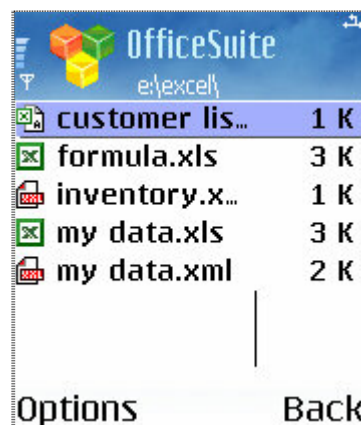
## ***Registration***

To Register the program choose **Options>Registration** and enter the unlock key which you have received after the purchase in the space box provided.

# Working with Worksheets and Workbooks

The primary document that you use in MobiSystems® Spreadsheet to store and work with data is called *worksheet* or *spreadsheet*. A worksheet consists of cells that are organized into columns and rows. A worksheet is always stored in a workbook.

A workbook is a file that contains one or more worksheets that you can use to organize various kinds of related information. You can enter, edit data and perform calculations based on data from more than one worksheet. Each Workbook appears as a separate file in the *file explorer* where you can manage it- create, delete, and rename workbooks.



In the *File Explorer* you can create new workbook through **Options>New>Sheet**.

You can switch between the different worksheets in the currently opened workbook through **Options>Worksheet>Change** and select a new sheet from the list of available sheets in the workbook.

In contrast to Docs, Spreadsheets does not have View Mode and when a document is opened you can directly begin to edit it.

## Edit Mode Menu

The Edit Mode Menu has the following menu items:

### *Edit Cell*

To enter information in a cell or to edit already existing values in a cell select the cell and choose **Options>Edit Cell**. The contents of the cell will be displayed in the edit filed in the lower left corner of the screen where you can change the information. Alternatively, you can

use the 5-way navigation center button to access the data in a cell and edit it. After you have entered the new data press the 5-way navigation center button or **Edit >Apply Edited Text** to enter the new text in the cell.

## *File*

With the File submenus you can manage the currently opened workbook in the following ways:

- **Save** - saves the workbook without changing it's title, location or format
- **Save As** - saves the workbook and allows you to choose a new title, location or file format if you wish.
- **Go to** - the Go to function allows you to directly move to a cell by specifying its number.
- **Recalculate** - the Recalculate function recalculates all cell values automatically.
- **Close** - closes the workbook.

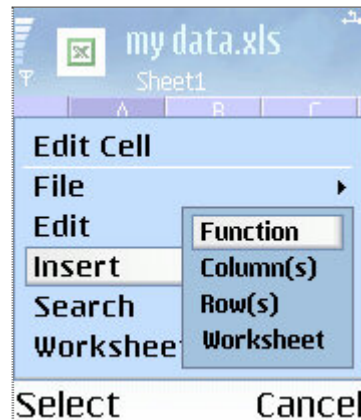
## *Edit*

With the Edit submenus you can manage the data inside a workbook in the following way:

- **Undo** – if you wish to undo the latest actions you have done to the document choose **Undo** and the file will return to its original state.
- **Redo** – if you wish to redo the action which you have undone choose **Redo**
- **Cut** - saves the contents of the selection in the systems clipboard and the cut selection area is deleted. The operation is used altogether with Copy and Paste. To cut a cell value select the cell and choose **Edit>Cut**.
- **Copy** – the contents of the clipboard is copied in the selected area. The copy selection area must be of the same type (rows or columns) as the data in the clipboard. The operation is usually used after Cut as well as in combination with Paste.
- **Paste** – Copies the contents of the clipboard usually selected with Copy or Cut, in the highlighted area of rows or columns. The size of the paste selection area should be the same as the contents of the clipboard.
- **Select All** – selects the entire contents of the document both text and images
- **Delete** – with Delete you can delete entire rows and columns. Select the row/column which you wish to delete and choose **Options>Delete>Entire Row** or **Entire Column**.

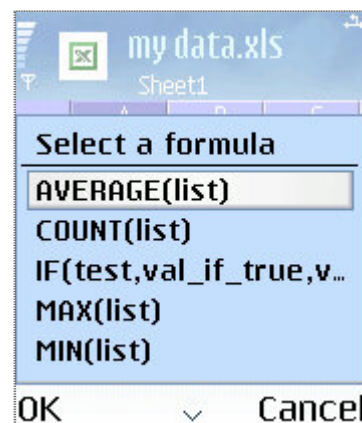
## ***Insert***

Spreadsheet allows you to insert functions, single rows or columns, and new worksheets to the currently opened workbook.



To insert a function:

1. Select the cell where you wish insert the function.
2. Choose **Options>Insert>Function**.
3. Choose the function you want from *Formula Type* screen and press Ok.

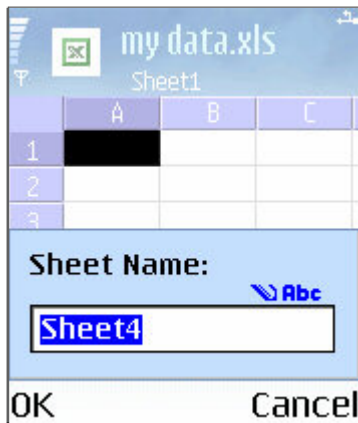


To insert rows or columns:

1. Select row or a column next to which you want to place the new item.
2. Choose **Options>Insert Column/Row** and the item will be inserted. .

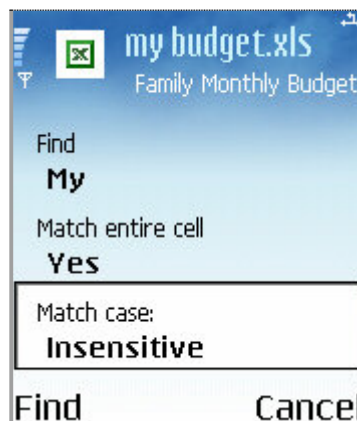
To insert a worksheet:

1. Choose **Options>Insert >Worksheet** and the item will be inserted.
2. Choose where you wish to insert the sheet - before or at the end of the currently opened sheet and choose Ok.



## Search

With the Search submenus you search for a word, part of a word or a number within a cell and replace it with new data:



- **Find** - choose **Options>Search>Find** and type in the string or numbers you want to locate in the space provided. Scroll to the Match entire cell and Yes if you would like to receive only whole cells matching the find criteria. Scroll down to Match Case and choose Sensitive if you want an exact case sensitive match after the find function. If the search returns any matches, the first cell that has the find criteria will be selected. To continue the search and move next cell that matches the search condition, select Find Next from the Edit menu.
  - **Find next** – to continue a search choose **Search>Find Next**
  - **Replace** – to replace text in your document choose **Search>Replace** and enter the text or numbers which you wish to replace and the new text. Choose **Replace**.

## *Managing Worksheets*

In MobiSystems® Spreadsheet you can add new worksheets, rename, delete and protect existing ones and switch between the different sheets in a currently opened workbook. These options are available through the submenus in **Options>Worksheet**.

- **Insert** - To insert a new worksheet in the currently opened workbook, just choose **Options>Worksheet>Insert** and enter the name for the new sheet in the provided text box.
- **Change** – if you wish to switch to another worksheet within the opened workbook choose **Options>Worksheet>Change**
- **Rename** – to Rename a worksheet make sure the sheet is active and choose **Options>Worksheet>Rename**. Enter the new name in the textbox provided and press Ok to confirm.
- **Delete** – to Delete a worksheet make sure the sheet is active and choose **Options>Worksheet>Delete**.
- **Protect** – you can protect a worksheet from unauthorized viewing by a password. To do that open the worksheet and choose **Options>Worksheet>Protect**. To remove the password choose **Options>Worksheet>Unprotect** .

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Please note that you can protect worksheets only and not an entire workbook.

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## *Toggle Full Screen*

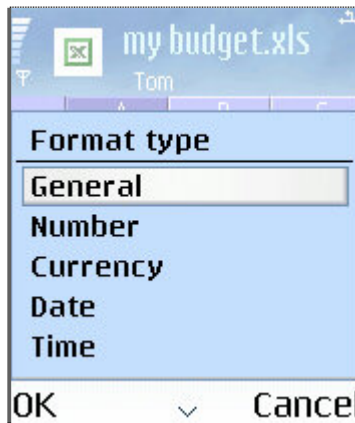
To use the whole screen of your phone as a text entry work area, use the **Toggle Full Screen** option that Spreadsheets provides. To switch to *Full Screen* choose **Options>Toggle Full Screen**. To exit Full Screen choose **Options>Toggle Full Screen**.

## **Cell Formatting**

The Spreadsheet program allows you to assign and modify a cell type, as well as specify a common format for the selected type. You can also manage the text aligning in cells and access advanced font types, styles and color settings. All these options are accessible through **Options>Format**

## *Cell Format Types and Settings*

The cell properties and settings vary for the different cell types. To assign a particular type to a cell or range of cells:



1. Select the cell or the range of cells in the worksheet.
2. Choose **Options>Format>Number**.
3. The Format Type screen will open where you can choose the desired format for the cell or range of cells.
4. The following cell formats are available
  - a. **Number** – for cells of type Number, you can specify the number of decimal places to be shown; whether 1000 separators should be used and the format in which negative numbers should be shown.
  - b. **General** – you can enter data in any formatting.
  - c. **Currency** – for the currency type you can specify the number of decimal places, the currency symbol, position of the currency symbol, and the format of the negative values.
  - d. **Date** – MobiSystems® Spreadsheet allows you to select date format among a list of 16 different formats
  - e. **Time** – you can select the desired time format among a list of five different formats.
  - f. **Percentage** – you can specify the number of decimal places to be shown for the percentage type.
  - g. **Text**

## ***Alignment***

The different Alignment options are accessible through **Options>Format>Alignment**. You can choose among four styles: **General, Left, Center** and **Right**. To align one cell or a range of cells select them and choose the desired alignment option.

## ***Fonts***

The font settings font type, size, style and color are directly accessible through **Options>Format>Font**. The font form also allows you to change the background color of a cell and use of the **strike through** font style.

To open the fonts settings form:

1. Select the cell or the range of cells in the worksheet.
2. Choose **Options>Format>Font** and enter the Font Preview form
3. Use the 5-way navigation key to scroll down the list of available options.
4. Use the arrow left and arrow right keys to scroll through the different Fonts, Styles and colors.
5. Choose the desired Font and font settings and choose **Ok**.

## ***Hide***

This operation can be applied only to whole columns or rows, or alternatively multiple columns or rows. To hide a column (or row), select the column, select it and choose **Options>Format>Hide**. To hide a range of columns or rows select them and choose **Options>Format>Hide**.

To unhide a column or row, select a column or row adjacent to it and choose **Options>Format>Unhide**.

## ***Freeze***

The freeze function allows you to “freeze” selected row or column so it is constantly visible while you scroll the other columns.

To freeze a column or row (or selection of columns or rows), select the object(s) and choose **Options>Format> Freeze**.

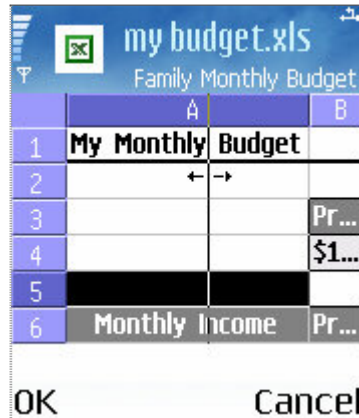
To unfreeze a row or column choose **Options>Format> Unfreeze**

## ***Zoom***

The **Zoom** option allows you to Zoom in and out of the text increasing or decreasing the text size. The supported zoom sizes are 25%, 50%, 75%, 100%, and 200%. In addition, through the Custom option in the zoom pop-up menu, the program allows you to specify a custom zoom percent ranging from 100% up to 200%.

## *Column Width*

With MobiSystems Spreadsheet you can change the size of width of column. To widen or narrow a column select one or more cells from the column and choose **Options>Adjust Column Width**. With the arrow left and arrow right keys widen or narrow the column and press the 5-way navigation center key to confirm the desired width.



## *Preferences*

MobiSystems Spreadsheet allows you to choose different CSV separators, enable Automatic calculation of formulas and show and hide Gridlines and Headers in a worksheet. To set your desired preferences choose **Options>Preferences** and enter the Preferences form. Use the 5-way navigation button to scroll down the available fields.

## *Register*

From Options>Register you can enter the Registration form and enter the Unlock key to register the program to your phone.

## *Help*

The program offers a Help Manual which you can access through Options>Help.

# Working with Functions

Functions are predefined formulas that perform calculations by using specific values, called arguments given in field order. Functions can be used to perform simple or complex calculations.

Functions can be embedded in worksheet cells. Each function begins with an equal sign (=), followed by the *function name*, an opening parenthesis, the *arguments* for the function separated by commas, and a closing parenthesis.

The arguments can be numbers, text, logical values such as TRUE or FALSE, arrays, or cell ranges. Arguments can also be constants, formulas, or other functions.

## Nested Functions

In certain cases, you may need to use a function as one of the arguments of another function. For example, the following formula uses a nested SUM function and compares the result with the value 30.

```
=IF(SUM(A1:A7)>30,SUM(B1:B7),C1)
```

When a nested function is used as an argument, it must return the same type of value that the argument uses.

## Inserting a function

To insert a function:

1. Select the cell where you want to place the function.
2. Choose **Options>Insert>Function**.
3. Scroll down through the function types until you locate the function that you need.
4. When you find the desired function, select it and tap the **OK** button.
5. The function will be inserted in the edit field and now you can provide its arguments.

Each next selected cell will be added as an argument separated with a comma from the previous one.

To give cells range as an argument of the function, just tap on the first cell from the range and drag it in the desired direction until the whole range is selected.

---

If you are sure about the syntax of a function and its arguments, you can skip steps 2-6 and type in the function directly in the *cell edit box* in the *cell toolbar*. For instance, you can directly type in =SUM(A1:A6).

---

6. When you have finished entering the function choose **Edit>Insert Function** to execute it.

## Formula Errors

Below is a table of the error messages that MobiSystems® SpreadSheet can display in case there is something wrong with a functions arguments.

FORMULA ERROR	DESCRIPTION
Error evaluating formula. Out of memory.	Insufficient memory for calculating the formula. Please check the available free space on your Palm device and try to free some space.
Error. Invalid formula.	Incorrect formula syntax. Check if the formula starts with =, +, or -.
Formula error. Missing operand.	Missing operator. For instance =5%10 will result in this error because there is not operator mathematical operator. The correct formula is '=5+%10' or '=5-%10'.
Formula error. Missing operator.	Missing argument. For example, '=5 2'. Correcy formulas are '=5+ 2', '=SUM(5,2)', etc.
Formula error. Illegal token.	Example: '= 5+4)' – missing left parenthesis Check the formula syntax and correct the error.
Formula error. Missing quote ( " ).	Missing quotations. Example: '="ala" + "bala ' Check the formula syntax and correct the error.
Formula error. Missing array closing bracket. " ] ".	Example: ( } ): '{5, 3' The array closing bracket is missing. Check the formula syntax.
Formula error. Illegal identifier.	Illegal formula argument. Example: '=SUM(ABCDEF) The provided argument is neither reference to existing cell, nor predefined name.
Formula error. Inconsistent array.	Arrays used as function arguments should have the following syntax: '{a1,a2,a3;b1,b2,b3;...}' The items in each array row are separated by comma and the different rows are separated by semi-column. This error message indicates incorrect array definition.

Formula error. Missing array element.	<p>Incorrect array definition. This error indicates that array item has been omitted.</p> <p>Example: <code>'={1,2, ,4}'</code> The third array item is omitted.</p>
Formula error. Illegal array element.	<p>Incorrect array definition. This error indicates that invalid array item has been provided.</p> <p>Arrays can consist of numbers, errors (e.g. #REF!), and logical values (true/false).</p> <p>References cannot be used as array items.</p> <p>Example: <code>'={1,2,A1}'</code> The last item in the array is a reference to cell A1.</p>
Formula error. Missing function closing bracket " ) ".	<p>Check the function syntax. A closing parenthesis is missing. Example: <code>'=SUM(A1:B2'</code></p>
Formula error. Too deep function nesting.	<p>The function nesting is on more than 7 levels.</p>
Formula error. Unknown function.	<p>Unknown function. Check the function syntax and name. Example: <code>'=ALABALA(5)'</code></p>
Formula error. Missing single quote ( ' ).	<p>This error message indicated that an opening or closing apostrophe is missing.</p> <p>Example: <code>'= 'Sheet 1!A1'</code> (the apostrophe between 1 and ! is omitted)</p>
Formula error. Circular reference.	<p>This error indicates a circular expression that cannot be calculated.</p> <p>Example: <code>A1 '=B1'</code> and <code>B1 '=A1'</code></p>
Unknown evaluation error.	<p>Evaluation error. Check the syntax of the formula and recalculate the formula.</p>
Formula error. Not enough arguments.	<p>Invalid formula syntax. Not enough arguments were provided for the given formula. Check the formula syntax and provide the necessary arguments.</p>
Unknown formula error.	
Formula error. Too much arguments.	<p>Invalid formula syntax. Too much function arguments are provided. Check the formula syntax and provide the necessary arguments.</p>

# Function Descriptions

## Math and Trigonometry

<b>ABS</b>	Returns the absolute value of a number. The absolute value of a number is the number without its sign.	<i>ABS(number)</i> Number is the real number of which you want the absolute value.	=ABS(2) Absolute value of 2 (2)
<b>ACOS</b>	Returns the arccosine, or inverse cosine, of a number. The arccosine is the angle whose cosine is <i>number</i> . The returned angle is given in radians in the range 0 (zero) to pi.	<i>ACOS(number)</i> Number is the cosine of the angle you want and must be from -1 to 1.	=ACOS(-0.5) Arccosine of -0.5 in radians, 2*pi/3 (2.094395)
<b>ACOSH</b>	Returns the inverse hyperbolic cosine of a number. Number must be greater than or equal to 1. The inverse hyperbolic cosine is the value whose hyperbolic cosine is <i>number</i> , so ACOSH(COSH(number)) equals <i>number</i> .	ACOSH(number) Number is any real number equal to or greater than 1.	=ACOSH(1) Inverse hyperbolic cosine of 1 (0)
<b>ASIN</b>	Returns the arcsine, or inverse sine, of a number. The arcsine is the angle whose sine is number. The returned angle is given in radians in the range -pi/2 to pi/2.	ASIN(number) Number is the sine of the angle you want and must be from -1 to 1.	=ASIN(-0.5) Arcsine of -0.5 in radians, -pi/6 (-0.5236)
<b>ASINH</b>	Returns the inverse hyperbolic sine of a number. The inverse hyperbolic sine is the value whose hyperbolic sine is <i>number</i> , so ASINH(SINH(number)) equals <i>number</i> .	<i>ASINH(number)</i> Number is any real number.	=ASINH(-2.5) Inverse hyperbolic sine of -2.5 (-1.64723)

<b>ATAN</b>	Returns the arctangent, or inverse tangent, of a number. The arctangent is the angle whose tangent is <i>number</i> . The returned angle is given in radians in the range -pi/2 to pi/2.	<i>ATAN(number)</i> Number is the tangent of the angle you want.	=ATAN(1) Arctangent of 1 in radians, pi/4 (0.785398)
<b>ATAN2</b>	Returns the arctangent, or inverse tangent, of the specified x- and y-coordinates. The arctangent is the angle from the x-axis to a line containing the origin (0, 0) and a point with coordinates (x_num, y_num). The angle is given in radians between -pi and pi, excluding -pi.	<i>ATAN2(X,Y)</i> X is the x-coordinate of the point and Y is the y-coordinate of the point.	=ATAN2(1, 1) Arctangent of the point 1,1 in radians, pi/4 (0.785398)
<b>ATANH</b>	Returns the inverse hyperbolic tangent of a number. Number must be between -1 and 1 (excluding -1 and 1). The inverse hyperbolic tangent is the value whose hyperbolic tangent is <i>number</i> , so ATANH(TANH(number)) equals <i>number</i> .	<i>ATANH(number)</i> Number is any real number between 1 and -1.	=ATANH(0.76159416) Inverse hyperbolic tangent of 0.76159416 (1, approximately)
<b>COS</b>	Returns the cosine of the given angle.	<i>COS(number)</i> Number is the angle in radians for which you want the cosine.	=COS(60*PI()/180) Cosine of 60 degrees (0.5)
<b>COSH</b>	Returns the hyperbolic cosine of a number.	<i>COSH(number)</i> Number is any real number for which you want to find the hyperbolic cosine.	=COSH(4) Hyperbolic cosine of 4 (27.30823)
<b>COUNTIF</b>	Counts the number of cells within a range that meet the given criteria.	<i>COUNTIF(range,criteria)</i> Range is the range of cells from which you want to count cells. Criteria is the criteria in the form of a number, expression, or text that defines which cells will be counted.	=COUNTIF(B2:B5, ">55") Number of cells with a value greater than 55 in the second column above (2)
<b>DEGREES</b>	Converts radians into degrees.	<i>DEGREES(angle)</i> Angle is the angle in radians that you want to convert.	=DEGREES(PI()) Degrees of pi radians (180)

<b>EVEN</b>	<p>Returns number rounded up to the nearest even integer. You can use this function for processing items that come in twos. For example, a packing crate accepts rows of one or two items. The crate is full when the number of items, rounded up to the nearest two, matches the crate's capacity.</p> <p>The function can be used only for numeric fields</p>	<p><i>EVEN(number)</i></p> <p>Number is the value to round.</p>	<p>=EVEN(1.5) Rounds 1.5 up to the nearest even integer (2)</p> <p>=EVEN(3) Rounds 3 up to the nearest even integer (4)</p>
<b>EXP</b>	<p>Returns <b>e constant</b> raised to the power of number. The constant e equals 2.71828182845904, the base of the natural logarithm. EXP is the inverse of LN, the natural logarithm of number.</p>	<p><i>EXP(number)</i></p> <p>Number is the exponent applied to the base e.</p>	
<b>FACT</b>	<p>Returns the factorial of a number. The factorial of a number is equal to 1*2*3*...* number.</p>	<p><i>FACT(number)</i></p> <p>Number is the nonnegative number you want the factorial of. If number is not an integer, it is truncated</p>	<p>=FACT(5) Factorial of 5, or 1*2*3*4*5 (120)</p>
<b>INT</b>	<p>Rounds a number down to the nearest integer.</p>	<p><i>INT(number)</i></p> <p>Number is the real number you want to round down to an integer.</p>	<p>=INT(8.9) Rounds 8.9 down (8)</p> <p>=INT(-8.9) Rounds -8.9 down (-9)</p>
<b>LN</b>	<p>Returns the natural logarithm of a number. Natural logarithms are based on the constant e (2.71828182845904). LN is the inverse of the EXP function.</p>	<p><i>LN(number)</i></p> <p>Number is the positive real number for which you want the natural logarithm.</p>	<p>=LN(86) Natural logarithm of 86 (4.454347)</p> <p>=LN(2.7182818) Natural logarithm of the value of the constant e (1)</p>
<b>LOG</b>	<p>Returns the logarithm of a number to the base you specify.</p>	<p><i>LOG(number,base)</i></p> <p>Number is the positive real number for which you want the logarithm.</p> <p>Base is the base of the logarithm. If base is omitted, it is assumed to be 10.</p>	<p>=LOG(10) Logarithm of 10 (1)</p> <p>=LOG(8, 2) Logarithm of 8 with base 2 (3)</p>

<b>LOG10</b>	Returns the base-10 logarithm of a number.	<i>LOG10(number)</i> Number is the positive real number for which you want the base-10 logarithm.	=LOG10(10) Base-10 logarithm of 10 (1) =LOG10(1E5) Base-10 logarithm of 1E5 (5)
<b>MOD</b>	Returns the remainder after number is divided by divisor. The result has the same sign as divisor. The MOD function can be expressed in terms of the INT function: MOD (n, d) = n - d*INT (n/d)	<i>MOD(number,divisor)</i> Number is the number for which you want to find the remainder. Divisor is the number by which you want to divide number.	=MOD(3, 2) Remainder of 3/2 (1) =MOD(-3, 2) Remainder of -3/2. The sign is the same as divisor (1)
<b>ODD</b>	Returns number rounded up to the nearest odd integer. The function can be used for numeric fields.	<i>ODD(number)</i> Number is the value to round.	=ODD(1.5) Rounds 1.5 up to the nearest odd integer (3)
<b>PI</b>	Returns the number 3.14159265358979, the mathematical constant pi.	<i>PI( )</i>	=PI()/2 Pi/2 (1.570796327)
<b>POWER</b>	Returns the result of a number raised to a power.	<i>POWER(number,power)</i> Number is the base number. It can be any real number. Power is the exponent to which the base number is raised.	=POWER(5,2) 5 squared (25)
<b>PRODUCT</b>	Multiplies all the numbers given as arguments and returns the product.	<i>PRODUCT(number1,number2,...)</i> Number1, number2, etc. are 1 to 30 numbers that you want to multiply.	PRODUCT(A2:A4) Multiplies the numbers contained in cells A2, A3 and A4.
<b>RADIANS</b>	Converts degrees to radians.	<i>RADIANS(angle)</i> Angle is an angle in degrees that you want to convert.	=RADIANS(270) 270 degrees as radians (4.712389 or $3\pi/2$ radians)
<b>RAND</b>	Returns an evenly distributed random number greater than or equal to 0 and less than 1. A new random number is returned every time the worksheet is calculated.	<i>RAND( )</i>	

<b>ROUND</b>	Rounds a number to a specified number of digits.	<p><i>ROUND(number,num_digits)</i></p> <p>Number is the number you want to round.</p> <p>Num_digits specifies the number of digits to which you want to round number.</p> <p>If num_digits is greater than 0 (zero), then number is rounded to the specified number of decimal places.</p> <p>If num_digits is 0, then number is rounded to the nearest integer.</p> <p>If num_digits is less than 0, then number is rounded to the left of the decimal point.</p>	<p>=ROUND(2.15, 1)</p> <p>Rounds 2.15 to one decimal place (2.2)</p>
<b>ROUNDDOWN</b>	Rounds a number down, toward zero. ROUNDDOWN behaves like ROUND, except that it always rounds a number down.	<p><i>ROUNDDOWN(number,num_digits)</i></p> <p>Number is any real number that you want rounded down.</p> <p>Num_digits is the number of digits to which you want to round number.</p>	<p>=ROUNDDOWN(3.2, 0)</p> <p>Rounds 3.2 down to zero decimal places (3)</p>
<b>ROUNDUP</b>	Rounds a number up, away from 0 (zero). ROUNDUP behaves like ROUND, except that it always rounds a number up.	<p><i>ROUNDUP(number,num_digits)</i></p> <p>Number is any real number that you want rounded up.</p> <p>Num_digits is the number of digits to which you want to round number.</p>	<p>=ROUNDUP(3.2,0)</p> <p>Rounds 3.2 up to zero decimal places (4)</p>
<b>SIN</b>	Returns the sine of the given angle. If your argument is in degrees, multiply it by PI()/180 or use the RADIANS function to convert it to radians.	<p><i>SIN(number)</i></p> <p>Number is the angle in radians for which you want the sine.</p>	<p>=SIN(30*PI()/180)</p> <p>Sine of 30 degrees (0.5)</p>
<b>SINH</b>	Returns the hyperbolic sine of a number.	<p><i>SINH(number)</i></p> <p>Number is any real number.</p>	<p>=SINH(1)</p> <p>Hyperbolic sine of 1 (1.175201194)</p>
<b>SQRT</b>	Returns a positive square root. If number is negative, SQRT returns an error value.	<p><i>SQRT(number)</i></p> <p>Number is the number for which you want the square root.</p>	<p>=SQRT(16)</p> <p>Square root of 16 (4)</p>
<b>SUM</b>	Adds all the numbers in a range of cells.	<p><i>SUM(number1,number2, ...)</i></p> <p>Number1, number2, etc. are 1 to 30 arguments for which you want the total value or sum.</p>	<p>=SUM(A2:A4)</p> <p>Adds the first three numbers in the column above.</p>

<b>SUMIF</b>	Adds the cells specified by a given criteria.	<p><i>SUMIF(range,criteria,sum_range)</i></p> <p>Range is the range of cells you want evaluated.</p> <p>Criteria is the criteria in the form of a number, expression, or text that defines which cells will be added. For example, criteria can be expressed as 32, "32", "&gt;32", "apples".</p> <p>Sum_range are the actual cells to sum.</p>	
<b>TAN</b>	Returns the tangent of the given angle.	<p><i>TAN(number)</i></p> <p>Number is the angle in radians for which you want the tangent.</p>	<p>=TAN(45*PI()/180)</p> <p>Tangent of 45 degrees (1)</p>
<b>TANH</b>	Returns the hyperbolic tangent of a number.	<p><i>TAN(number)</i></p> <p>Number is the angle in radians for which you want the tangent.</p>	<p>=TANH(-2)</p> <p>Hyperbolic tangent of -2 (-0.96403)</p>
<b>TRUNC</b>	Truncates a number to an integer by removing the fractional part of the number.	<p><i>TRUNC(number,num_digits)</i></p> <p>Number is the number you want to truncate.</p> <p>Num_digits is a number specifying the precision of the truncation. The default value for num_digits is 0 (zero).</p>	<p>=TRUNC(8.9)</p> <p>Integer part of 8.9 (8)</p>

## Database

The database functions have the following arguments:

- **Database** is the range of cells that makes up the list or database. A database is a list of related data in which rows of related information are records, and columns of data are fields. The first row of the list contains labels for each column.
- **Field** indicates which column is used in the function. Field can be given as text with the column label enclosed between double quotation marks, such as "Age" or "Yield," or as a number that represents the position of the column within the list: 1 for the first column, 2 for the second column, and so on.
- **Criteria** is the range of cells that contains the conditions you specify. You can use any range for the criteria argument, as long as it includes at least one column label and at least one cell below the column label for specifying a condition for the column.

<b>DAVERAGE</b>	Averages the values in a column of a list or database that match conditions you specify.	<i>DAVERAGE(database,field,criteria)</i>
<b>DCOUNT</b>	Counts the cells that contain numbers in a column of a list or database that match	<i>DCOUNT(database,field,criteria)</i>

	<p>conditions you specify.</p> <p>The field argument is optional. If field is omitted, DCOUNT counts all records in the database that match the criteria.</p>	
<b>DCOUNTA</b>	<p>Counts the nonblank cells in a column of a list or database that match conditions you specify.</p> <p>The field argument is optional. If field is omitted, DCOUNTA counts all records in the database that match the criteria.</p>	<i>DCOUNTA(database,field,criteria)</i>
<b>DGET</b>	<p>Extracts a single value from a column of a list or database that matches conditions you specify.</p>	<i>DGET(database,field,criteria)</i>
<b>DMAX</b>	<p>Returns the largest number in a column of a list or database that matches conditions you specify.</p>	<i>DMAX(database,field,criteria)</i>
<b>DMIN</b>	<p>Returns the smallest number in a column of a list or database that matches conditions you specify.</p>	<i>DMIN(database,field,criteria)</i>
<b>DPRODUCT</b>	<p>Multiplies the values in a column of a list or database that match conditions you specify.</p>	<i>DPRODUCT(database,field,criteria)</i>
<b>DSTDEV</b>	<p>Estimates the standard deviation of a population based on a sample by using the numbers in a column of a list or database that match conditions you specify.</p>	<i>DSTDEV(database,field,criteria)</i>
<b>DSTDEV</b> <b>VP</b>	<p>Calculates the standard deviation of a population based on the entire population, using the numbers in a column of a list or database that match conditions you specify.</p>	<i>DSTDEV(database,field,criteria)</i>

<b>DSUM</b>	Adds the numbers in a column of a list or database that match conditions you specify.	<i>DSUM(database,field,criteria)</i>
<b>DVAR</b>	Estimates the variance of a population based on a sample by using the numbers in a column of a list or database that match conditions you specify.	<i>DVAR(database,field,criteria)</i>
<b>DVARP</b>	Calculates the variance of a population based on the entire population by using the numbers in a column of a list or database that match conditions you specify.	<i>DVARP(database,field,criteria)</i>

## *Financial*

<b>DDB</b>	Returns the depreciation of an asset for a specified period using the double-declining balance method or some other method you specify.	<p><i>DDB(cost,salvage,life,period,factor)</i></p> <p>Cost is the initial cost of the asset.</p> <p>Salvage is the value at the end of the depreciation.</p> <p>Life is the number of periods over which the asset is being depreciated (the useful life of the asset).</p> <p>Period is the period for which you want to calculate the depreciation. Period must use the same units as life.</p> <p>Factor is the rate at which the balance declines. If factor is omitted, it is assumed to be 2 (the double-declining balance method).</p>
<b>EFFEC T</b>	Returns the effective annual interest rate, given the nominal annual interest rate and the number of compounding periods per year.	<p><i>EFFECT(nominal_rate,npery)</i></p> <p>Nominal_rate is the nominal interest rate.</p> <p>Npery is the number of compounding periods per year.</p> <p>EFFECT is calculated as follows:</p> <p><math>EFFECT = \text{POWER}((1 + \text{Nominal\_rate}/\text{Npery}), \text{Npery}) - 1</math></p>
<b>FV</b>	Returns the future value of an investment based on periodic, constant payments and a constant interest rate.	<p><i>FV(rate,nper,pmt,pv,type)</i></p> <p>Rate is the interest rate per period.</p> <p>Nper is the total number of payment periods in an annuity.</p> <p>Pmt is the payment made each period; it cannot change over the life of the annuity. Typically, pmt contains principal and interest but no other fees or taxes. If pmt is omitted, you</p>

		<p>must include the pv argument.</p> <p>Pv is the present value, or the lump-sum amount that a series of future payments is worth right now. If pv is omitted, it is assumed to be 0 (zero), and you must include the pmt argument.</p> <p>Type is the number 0 or 1 and indicates when payments are due. If type is omitted, it is assumed to be 0.</p>
<b>IPMT</b>	<p>Returns the interest payment for a given period for an investment based on periodic, constant payments and a constant interest rate. For a more complete description of the arguments in IPMT and for more information about annuity functions, see PV.</p>	<p><i>IPMT(rate,per,nper,pv,fv,type)</i></p> <p>Rate is the interest rate per period.</p> <p>Per is the period for which you want to find the interest and must be in the range 1 to nper.</p> <p>Nper is the total number of payment periods in an annuity.</p> <p>Pv is the present value, or the lump-sum amount that a series of future payments is worth right now.</p> <p>Fv is the future value, or a cash balance you want to attain after the last payment is made. If fv is omitted, it is assumed to be 0 (the future value of a loan, for example, is 0).</p> <p>Type is the number 0 or 1 and indicates when payments are due. If type is omitted, it is assumed to be 0.</p>
<b>NOMINAL</b>	<p>Returns the nominal annual interest rate, given the effective rate and the number of compounding periods per year.</p>	<p><i>NOMINAL(effect_rate,npery)</i></p> <p>Effect_rate is the effective interest rate.</p> <p>Npery is the number of compounding periods per year.</p>
<b>NPER</b>	<p>Returns the number of periods for an investment based on periodic, constant payments and a constant interest rate.</p>	<p><i>NPER(rate, pmt, pv, fv, type)</i></p> <p>For a more complete description of the arguments in NPER and for more information about annuity functions, see PV.</p> <p>Rate is the interest rate per period.</p> <p>Pmt is the payment made each period; it cannot change over the life of the annuity. Typically, pmt contains principal and interest but no other fees or taxes.</p> <p>Pv is the present value, or the lump-sum amount that a series of future payments is worth right now.</p> <p>Fv is the future value, or a cash balance you want to attain after the last payment is made. If fv is omitted, it is assumed to be 0 (the future value of a loan, for example, is 0).</p> <p>Type is the number 0 or 1 and indicates when payments are due.</p>
<b>NPV</b>	<p>Calculates the net present value of an</p>	<p><i>NPV(rate,value1,value2, ...)</i></p>

<p><b>*1 See the remarks below the table</b></p>	<p>investment by using a discount rate and a series of future payments (negative values) and income (positive values).</p>	<p>Rate is the rate of discount over the length of one period.</p> <p>Value1, value2, ... are 1 to 29 arguments representing the payments and income.</p>
<p><b>PPMT</b></p>	<p>Returns the payment on the principal for a given period for an investment based on periodic, constant payments and a constant interest rate.</p>	<p><i>PPMT(rate,per,nper,pv,fv,type)</i></p> <p>Rate is the interest rate per period.</p> <p>Per specifies the period and must be in the range 1 to nper.</p> <p>Nper is the total number of payment periods in an annuity.</p> <p>Pv is the present value — the total amount that a series of future payments is worth now.</p> <p>Fv is the future value, or a cash balance you want to attain after the last payment is made. If fv is omitted, it is assumed to be 0 (zero), that is, the future value of a loan is 0.</p> <p>Type is the number 0 or 1 and indicates when payments are due.</p>
<p><b>PMT</b></p>	<p>Calculates the payment for a loan based on constant payments and a constant interest rate.</p>	<p><i>PMT(rate,nper,pv,fv,type)</i></p> <p>For a more complete description of the arguments in PMT, see the PV function.</p> <p>Rate is the interest rate for the loan.</p> <p>Nper is the total number of payments for the loan.</p> <p>Pv is the present value, or the total amount that a series of future payments is worth now; also known as the principal.</p> <p>Fv is the future value, or a cash balance you want to attain after the last payment is made. If fv is omitted, it is assumed to be 0 (zero), that is, the future value of a loan is 0.</p> <p>Type is the number 0 (zero) or 1 and indicates when payments are due.</p>
<p><b>PV</b></p>	<p>Returns the present value of an investment. The present value is the total amount that a series of future payments is worth now. For example, when you borrow money, the loan amount is the present value to the</p>	<p><i>PV(rate,nper,pmt,fv,type)</i></p> <p>Rate is the interest rate per period. For example, if you obtain an automobile loan at a 10 percent annual interest rate and make monthly payments, your interest rate per month is 10%/12, or 0.83%. You would enter 10%/12, or 0.83%, or 0.0083, into the formula as the rate.</p> <p>Nper is the total number of payment periods in an annuity.</p>

	lender.	<p>For example, if you get a four-year car loan and make monthly payments, your loan has 4*12 (or 48) periods. You would enter 48 into the formula for nper.</p> <p>Pmt is the payment made each period and cannot change over the life of the annuity. Typically, pmt includes principal and interest but no other fees or taxes. For example, the monthly payments on a \$10,000, four-year car loan at 12 percent are \$263.33. You would enter -263.33 into the formula as the pmt. If pmt is omitted, you must include the fv argument.</p> <p>Fv is the future value, or a cash balance you want to attain after the last payment is made. If fv is omitted, it is assumed to be 0 (the future value of a loan, for example, is 0). For example, if you want to save \$50,000 to pay for a special project in 18 years, then \$50,000 is the future value. You could then make a conservative guess at an interest rate and determine how much you must save each month. If fv is omitted, you must include the pmt argument.</p> <p>Type is the number 0 or 1 and indicates when payments are due.</p>
<b>SLN</b>	Returns the straight-line depreciation of an asset for one period.	<p><i>SLN(cost,salvage,life)</i></p> <p>Cost is the initial cost of the asset.</p> <p>Salvage is the value at the end of the depreciation (sometimes called the salvage value of the asset).</p> <p>Life is the number of periods over which the asset is depreciated (sometimes called the useful life of the asset).</p>
<b>SYD</b>	<p>Returns the sum-of-years' digits depreciation of an asset for a specified period.</p> <p>SYD is calculated as follows:</p> $SYD = ((\text{cost} - \text{salvage}) * (\text{life} - \text{per} + 1) * 2) / (\text{life} * (\text{life} + 1))$	<p><i>SYD(cost,salvage,life,per)</i></p> <p>Cost is the initial cost of the asset.</p> <p>Salvage is the value at the end of the depreciation (sometimes called the salvage value of the asset).</p> <p>Life is the number of periods over which the asset is depreciated (sometimes called the useful life of the asset).</p> <p>Per is the period and must use the same units as life.</p>

**\*1 Remarks** for the NPV function:

- Value1, value2, ... must be equally spaced in time and occur at the end of each period.

- NPV uses the order of value1, value2, ... to interpret the order of cash flows. Be sure to enter your payment and income values in the correct sequence.
- Arguments that are numbers, empty cells, logical values, or text representations of numbers are counted; arguments that are error values or text that cannot be translated into numbers are ignored.
- If an argument is an array or reference, only numbers in that array or reference are counted. Empty cells, logical values, text, or error values in the array or reference are ignored.
- The NPV investment begins one period before the date of the value1 cash flow and ends with the last cash flow in the list. The NPV calculation is based on future cash flows. If your first cash flow occurs at the beginning of the first period, the first value must be added to the NPV result, not included in the values arguments. For more information, see the examples below.
- NPV is similar to the PV function (present value). The primary difference between PV and NPV is that PV allows cash flows to begin either at the end or at the beginning of the period. Unlike the variable NPV cash flow values, PV cash flows must be constant throughout the investment. For information about annuities and financial functions, see PV.
- NPV is also related to the IRR function (internal rate of return). IRR is the rate for which NPV equals zero:  $NPV(IRR(...), ...) = 0$ .

## Logical

<b>AND</b>	Returns TRUE if all its arguments are TRUE; returns FALSE if one or more argument is FALSE.	<p><i>AND(logical1,logical2, ...)</i></p> <p>Logical1, logical2, ... are 1 to 30 conditions you want to test that can be either TRUE or FALSE.</p> <p>The arguments must evaluate to logical values such as TRUE or FALSE, or the arguments must be arrays or references that contain logical values.</p>
<b>FALSE</b>	Returns the logical value FALSE.	<p><i>FALSE( )</i></p> <p>You can also type the word FALSE directly onto the worksheet or into the formula, and the program interprets it as the logical value FALSE.</p>
<b>IF</b>	<p>Returns one value if a condition you specify evaluates to TRUE and another value if it evaluates to FALSE.</p> <p>Use IF to conduct conditional tests on values and formulas.</p>	<p><i>IF(logical_test,value_if_true,value_if_false)</i></p> <p>Logical_test is any value or expression that can be evaluated to TRUE or FALSE. This argument can use any comparison calculation operator.</p> <p>Value_if_true is the value that is returned if logical_test is TRUE. Value_if_true can be another formula.</p> <p>Value_if_false is the value that is returned if logical_test is FALSE. Value_if_false can be another formula.</p>
<b>NOT</b>	Reverses the value of its argument. Use NOT when you want to make sure a value is not equal to one particular value.	<p><i>NOT(logical)</i></p> <p>Logical is a value or expression that can be evaluated to</p>

		TRUE or FALSE.
<b>OR</b>	<p>Returns TRUE if any argument is TRUE; returns FALSE if all arguments are FALSE.</p> <p>The arguments must evaluate to logical values such as TRUE or FALSE, or in arrays or references that contain logical values.</p> <p>If an array or reference argument contains text or empty cells, those values are ignored.</p>	<p><i>OR(logical1,logical2,...)</i></p> <p>Logical1,logical2,... are 1 to 30 conditions you want to test that can be either TRUE or FALSE.</p>
<b>TRUE</b>	Returns the logical value TRUE.	<p><i>TRUE( )</i></p> <p>You can enter the value TRUE directly into cells and formulas without using this function. The TRUE function is provided primarily for compatibility with other spreadsheet programs.</p>

## ***Date and Time***

Dates are stored as sequential serial numbers so they can be used in calculations. By default, January 1, 1900 is serial number 1, and January 1, 2008 is serial number 39448 because it is 39,448 days after January 1, 1900.

Time values are a portion of a date value and represented by a decimal number (for example, 12:00 PM is represented as 0.5 because it is half of a day).

<b>DATE</b>	Returns the sequential serial number that represents a particular date.	<p><i>DATE(year,month,day)</i></p> <p>Year- The year argument can be one to four digits.</p> <p>Month is a number representing the month of the year</p> <p>Day is a number representing the day of the month. If day is greater than the number of days in the month specified, day adds that number of days to the first day in the month. For example, <i>DATE( 2008 , 1 , 35 )</i> returns the serial number representing February 4, 2008.</p>
<b>DAY</b> <b>*1</b>	Returns the day of a date, represented by a serial number. The day is	<p><i>DAY(serial_number)</i></p> <p>Serial_number is the date of the day you are trying to find.</p>

	given as an integer ranging from 1 to 31.	Dates should be entered by using the DATE function, or as results of other formulas or functions. For example, use DATE(2008,5,23) for the 23rd day of May, 2008.
<b>HOUR</b>	Returns the hour of a time value. The hour is given as an integer, ranging from 0 (12:00 A.M.) to 23 (11:00 P.M.).	<i>HOUR(serial_number)</i>  Serial_number is the time that contains the hour you want to find. Times may be entered as text strings within quotation marks (for example, "6:45 PM"), as decimal numbers (for example, 0.78125, which represents 6:45 PM), or as results of other formulas or functions (for example, TIMEVALUE("6:45 PM")).
<b>MINUTE</b>	Returns the minutes of a time value. The minute is given as an integer, ranging from 0 to 59.	<i>MINUTE(serial_number)</i>  Serial_number is the time that contains the minute you want to find. Times may be entered as text strings within quotation marks (for example, "6:45 PM"), as decimal numbers (for example, 0.78125, which represents 6:45 PM), or as results of other formulas or functions (for example, TIMEVALUE("6:45 PM")).
<b>MONTH</b>	Returns the month of a date represented by a serial number. The month is given as an integer, ranging from 1 (January) to 12 (December).	<i>MONTH(serial_number)</i>  Serial_number is the date of the month you are trying to find. Dates should be entered by using the DATE function, or as results of other formulas or functions. For example, use DATE(2008,5,23) for the 23rd day of May, 2008. Problems can occur if dates are entered as text
<b>NOW</b>	Returns the serial number of the current date and time.	<i>NOW( )</i>  The NOW function changes only when the worksheet is calculated. It is not updated continuously.
<b>SECOND</b>	Returns the seconds of a time value. The second is given as an integer in the range 0 (zero) to 59.	<i>SECOND(serial_number)</i>  Serial_number is the time that contains the seconds you want to find. Times may be entered as text strings within quotation marks (for example, "6:45 PM"), as decimal numbers (for example, 0.78125, which represents 6:45 PM), or as results of other formulas or functions (for example, TIMEVALUE("6:45 PM")).  Time values are a portion of a date value and represented by a decimal number (for example, 12:00 PM is represented as 0.5 because it is half of a day).
<b>TIME</b>	Returns the decimal number for a particular time. The decimal number returned by TIME is a value ranging from 0 (zero) to 0.99999999, representing the times from 0:00:00 (12:00:00 AM) to 23:59:59 (11:59:59 P.M.).	<i>TIME(hour,minute,second)</i>  Hour is a number from 0 (zero) to 32767 representing the hour. Any value greater than 23 will be divided by 24 and the remainder will be treated as the hour value. For example, TIME(27,0,0) = TIME(3,0,0) = .125 or 3:00 AM.  Minute is a number from 0 to 32767 representing the minute. Any value greater than 59 will be converted to hours and minutes. For example, TIME(0,750,0) = TIME(12,30,0) = .520833 or 12:30 PM.  Second is a number from 0 to 32767 representing the second. Any value greater than 59 will be converted to hours, minutes, and seconds. For example, TIME(0,0,2000) =

		TIME(0,33,22) = .023148 or 12:33:20 AM
<b>TODAY</b>	Returns the serial number of the current date. The serial number is the date-time code used for date and time calculations.	<i>TODAY( )</i>
<b>WEEKDAY</b>	Returns the day of the week corresponding to a date. The day is given as an integer, ranging from 1 (Sunday) to 7 (Saturday), by default.	<i>WEEKDAY(serial_number,return_type)</i>  Serial_number is a sequential number that represents the date of the day you are trying to find. Dates should be entered by using the DATE function, or as results of other formulas or functions. For example, use DATE(2008,5,23) for the 23rd day of May, 2008.
<b>YEAR</b> *1	Returns the year corresponding to a date. The year is returned as an integer in the range 1900-9999.	<i>YEAR(serial_number)</i>  Serial_number is the date of the year you want to find. Dates should be entered by using the DATE function, or as results of other formulas or functions. For example, use DATE(2008,5,23) for the 23rd day of May, 2008.

\*1 - Values returned by the YEAR, MONTH and DAY functions will be Gregorian values regardless of the display format for the supplied date value. For example, if the display format of the supplied date was “Hijri,” the returned values for the YEAR, MONTH and DAY functions will be values associated with the equivalent Gregorian date.

## Information

<b>ERROR.TYPE</b> <i>(see index of the different errors and their codes in the end of Information functions)</i>	Returns a number corresponding to one of the error values in Microsoft Excel or returns the #N/A error if no error exists. You can use ERROR.TYPE in an IF function to test for an error value and return a text string, such as a message, instead of the error value.	<i>ERROR.TYPE(error_val)</i>  Error_val is the error value whose identifying number you want to find. Although error_val can be the actual error value, it will usually be a reference to a cell containing a formula that you want to test.
<b>ISBLANK</b> *(see IS Functions)	Checks the type of value and returns TRUE or FALSE depending on the outcome. Returns TRUE if the value is blank.	<i>ISBLANK(value)</i>  Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.
<b>ISERR</b> *(see IS Functions)	Checks the type of value and returns	<i>ISERR(value)</i>

<a href="#">Functions</a> )	TRUE or FALSE depending on the outcome. Returns TRUE if the value is any error value except #N/A.	Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.
<b>ISERR</b> <b>OR</b> <a href="#">*(see IS Functions)</a>	Checks the type of value and returns TRUE or FALSE depending on the outcome. Returns TRUE if the value is any an error value.	<i>ISERROR(value)</i>  Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.
<b>ISLOGICAL</b> <a href="#">*(see IS Functions)</a>	Checks the type of value and returns TRUE or FALSE depending on the outcome. Returns TRUE if the value is a logical value.	<i>ISLOGICAL(value)</i>  Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.
<b>ISNA</b> <a href="#">*(see IS Functions)</a>	Checks the type of value and returns TRUE or FALSE depending on the outcome. Returns TRUE if the value is the #N/A error value.	<i>ISNA(value)</i>  Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.
<b>ISNONTEXT</b> <a href="#">*(see IS Functions)</a>	Checks the type of value and returns TRUE or FALSE depending on the outcome. Returns TRUE if the value is not text.	<i>ISNONTEXT(value)</i>  Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.
<b>ISNUMBER</b> <a href="#">*(see IS Functions)</a>	Checks the type of value and returns TRUE or FALSE depending on the outcome. Returns TRUE if the value is a number	<i>ISNUMBER(value)</i>  Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.
<b>ISREF</b> <a href="#">*(see IS Functions)</a>	Checks the type of value and returns TRUE or FALSE depending on the outcome. Returns TRUE if the value is a reference.	<i>ISREF(value)</i>  Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.

<b>ISTEXT</b> T  *( <a href="#">see IS Functions</a> )	Checks the type of value and returns TRUE or FALSE depending on the outcome. Returns TRUE if the value is text.	<i>ISTEXT(value)</i>  Value is the value you want tested. Value can be a blank (empty cell), error, logical, text, number, or reference value, or a name referring to any of these, that you want to test.
<b>ISEVEN</b> N	Returns TRUE if number is even, or FALSE if number is odd. If this function is not available, and returns the #NAME? Error.	<i>ISEVEN(number)</i>  Number is the value to test. If number is not an integer, it is truncated.
<b>ISODD</b>	Returns TRUE if number is odd, or FALSE if number is even. If this function is not available, and returns the #NAME? Error.	<i>ISODD(number)</i>  Number is the value to test. If number is not an integer, it is truncated. If number is nonnumeric, ISODD returns the #VALUE! error value.
<b>N</b>  ( <a href="#">see N function values</a> )	Returns a value converted to a number.	<i>N(value)</i>  Value is the value you want converted. N converts values listed in the following table.
<b>NA</b>	Returns the error value #N/A. #N/A is the error value that means "no value is available." Use NA to mark empty cells. By entering #N/A in cells where you are missing information, you can avoid the problem of unintentionally including empty cells in your calculations.	<i>NA( )</i>

## ***Error Types***

<b>If error_val is</b>	<b>ERROR.TYPE returns</b>
#NULL!	1
#DIV/0!	2
#VALUE!	3
#REF!	4
#NAME?	5
#NUM!	6

#N/A	7
Anything else	#N/A

## ***IS Functions***

Each of these functions, referred to collectively as the IS functions, checks the type of value and returns TRUE or FALSE depending on the outcome. For example, the ISBLANK function returns the logical value TRUE if value is a reference to an empty cell; otherwise it returns FALSE.

**ISBLANK(value), ISERR(value), ISERROR(value), ISLOGICAL(value), ISNA(value), ISNONTTEXT(value), ISNUMBER(value), ISREF(value), ISTEXT(value)**

The IS functions are useful in formulas for testing the outcome of a calculation. When combined with the IF function, they provide a method for locating errors in formulas (see the following examples).

<b>Function</b>	<b>Returns TRUE if</b>
ISBLANK	Value refers to an empty cell.
ISERR	Value refers to any error value except #N/A.
ISERROR	Value refers to any error value (#N/A, #VALUE!, #REF!, #DIV/0!, #NUM!, #NAME?, or #NULL!).
ISLOGICAL	Value refers to a logical value.
ISNA	Value refers to the #N/A (value not available) error value.
ISNONTTEXT	Value refers to any item that is not text. (Note that this function returns TRUE if value refers to a blank cell.)
ISNUMBER	Value refers to a number.
ISREF	Value refers to a reference.
ISTEXT	Value refers to text.

## ***N function values***

<b>If value is or refers to</b>	<b>N returns</b>
A number	That number
A date, in one of the built-in date formats available in Microsoft Excel	The serial number of that date

TRUE	1
FALSE	0
An error value, such as #DIV/0!	The error value
Anything else	0

## Lookup and Reference

<b>CHOOSE</b>	<p>Uses <i>index_num</i> to return a value from the list of value arguments. Use CHOOSE to select one of up to 29 values based on the index number. For example, if <i>value1</i> through <i>value7</i> are the days of the week, CHOOSE returns one of the days when a number between 1 and 7 is used as <i>index_num</i>.</p>	<p><i>CHOOSE(index_num,value1,value2,...)</i></p> <p><i>Index_num</i> specifies which value argument is selected. <i>Index_num</i> must be a number between 1 and 29, or a formula or reference to a cell containing a number between 1 and 29.</p> <p><i>Value1,value2,...</i> are 1 to 29 value arguments from which CHOOSE selects a value or an action to perform based on <i>index_num</i>. The arguments can be numbers, cell references, defined names, formulas, functions, or text.</p>
<b>COLUMN</b>	<p>Returns the column number of the given reference.</p>	<p><i>COLUMN(reference)</i></p> <p>Reference is the cell or range of cells for which you want the column number.</p> <p>If reference is omitted, it is assumed to be the reference of the cell in which the COLUMN function appears.</p> <p>Reference cannot refer to multiple areas.</p>
<b>COLUMNS</b>	<p>Returns the number of columns in an array or reference.</p>	<p><i>COLUMNS(array)</i></p> <p>Array is an array or array formula, or a reference to a range of cells for which you want the number of columns.</p>
<b>HLOOKUP</b>	<p>Searches for a value in the top row of an array of values, and then returns a value in the same column from a row you specify in the table or array.</p>	<p><i>HLOOKUP(lookup_value,table_array,row_index_num,range_lookup)</i></p> <p><i>Lookup_value</i> is the value to be found in the first row of the array. <i>Lookup_value</i> can be a value, a reference, or a text string.</p> <p><i>Table_array</i> is a table of information in which data is looked up. Use a reference to a range or a range name.</p> <p><i>Row_index_num</i> is the row number in <i>table_array</i> from which the matching value will be returned. A <i>row_index_num</i> of 1 returns the first row value in <i>table_array</i>, a <i>row_index_num</i> of 2 returns the second row value in <i>table_array</i>, and so on. <i>Range_lookup</i> is a logical value that</p>

		<p>specifies whether you want HLOOKUP to find an exact match or an approximate match. If TRUE or omitted, an approximate match is returned. In other words, if an exact match is not found, the next largest value that is less than lookup_value is returned.</p>
<b>INDEX</b>	<p>Returns the value of an element in a table or an array, selected by the row and column number indexes.</p> <p>The INDEX function has two syntax forms: array and reference. The array form always returns a value or array of values; the reference form always returns a reference. Use the array form if the first argument to INDEX is an array constant.</p>	<p><i>INDEX(array,row_num,column_num)</i></p> <p>Array is a range of cells or an array constant.</p> <p>If array contains only one row or column, the corresponding row_num or column_num argument is optional.</p> <p>If array has more than one row and more than one column, and only row_num or column_num is used, INDEX returns an array of the entire row or column in array.</p> <p>Row_num selects the row in array from which to return a value. If row_num is omitted, column_num is required.</p> <p>Column_num selects the column in array from which to return a value. If column_num is omitted, row_num is required.</p> <p><i>INDEX(reference,row_num,column_num,area_num)</i></p> <p>Reference is a reference to one or more cell ranges.</p> <p>If you are entering a nonadjacent range for the reference, enclose reference in parentheses.</p> <p>If each area in reference contains only one row or column, the row_num or column_num argument, respectively, is optional. For example, for a single row reference, use INDEX(reference,,column_num).</p> <p>Row_num is the number of the row in reference from which to return a reference.</p> <p>Column_num is the number of the column in reference from which to return a reference.</p> <p>Area_num selects a range in reference from which to return the intersection of row_num and column_num. The first area selected or entered is numbered 1, the second is 2, and so on. If area_num is omitted, INDEX uses area 1.</p>
<b>LOOKUP</b>	<p>Returns a value either from a one-row or one-column range or from an array. The LOOKUP function has two syntax forms: vector and array. The vector form of LOOKUP looks in a one-row or one-column range (known as a vector) for a</p>	<p><i>LOOKUP(lookup_value,lookup_vector,result_vector)</i></p> <p>Lookup_value is a value that LOOKUP searches for in the first vector. Lookup_value can be a number, text, a logical value, or a name or reference that refers to a value.</p>

	<p>value and returns a value from the same position in a second one-row or one-column range. The array form of LOOKUP looks in the first row or column of an array for the specified value and returns a value from the same position in the last row or column of the array.</p>	<p>Lookup_vector is a range that contains only one row or one column. The values in lookup_vector can be text, numbers, or logical values.</p> <p>The values in lookup_vector must be placed in ascending order: ..., -2, -1, 0, 1, 2, ..., A-Z, FALSE, TRUE; otherwise, LOOKUP may not give the correct value. Uppercase and lowercase text are equivalent.</p> <p>Result_vector is a range that contains only one row or column. It must be the same size as lookup_vector.</p> <p><i>LOOKUP(lookup_value,array)</i></p> <p>Lookup_value is a value that LOOKUP searches for in an array. Lookup_value can be a number, text, a logical value, or a name or reference that refers to a value.</p> <p>If LOOKUP can't find the lookup_value, it uses the largest value in the array that is less than or equal to lookup_value.</p> <p>If lookup_value is smaller than the smallest value in the first row or column (depending on the array dimensions), LOOKUP returns the #N/A error value.</p> <p>Array is a range of cells that contains text, numbers, or logical values that you want to compare with lookup_value.</p> <p>The array form of LOOKUP is very similar to the HLOOKUP and VLOOKUP functions. The difference is that HLOOKUP searches for lookup_value in the first row, VLOOKUP searches in the first column, and LOOKUP searches according to the dimensions of array.</p> <p>If array covers an area that is wider than it is tall (more columns than rows), LOOKUP searches for lookup_value in the first row.</p> <p>If array is square or is taller than it is wide (more rows than columns), LOOKUP searches in the first column.</p> <p>With HLOOKUP and VLOOKUP, you can index down or across, but LOOKUP always selects the last value in the row or column.</p> <p>The values in array must be placed in ascending order: ..., -2, -1, 0, 1, 2, ..., A-Z, FALSE, TRUE; otherwise, LOOKUP may not give the correct value. Uppercase and lowercase text are equivalent.</p>
<p><b>MATCH</b> <b>H</b></p>	<p>Returns the relative position of an item in an array or a reference that</p>	<p><i>MATCH(lookup_value,lookup_array,match_type)</i></p> <p>Lookup_value is the value you use to find the value you</p>

	<p>matches a specified value in a specified order. Use MATCH instead of one of the LOOKUP functions when you need the position of an item in a range instead of the item itself.</p>	<p>want in a table.</p> <p>Lookup_value is the value you want to match in lookup_array. For example, when you look up someone's number in a telephone book, you are using the person's name as the lookup value, but the telephone number is the value you want.</p> <p>Lookup_value can be a value (number, text, or logical value) or a cell reference to a number, text, or logical value.</p> <p>Lookup_array is a contiguous range of cells containing possible lookup values. Lookup_array must be an array or an array reference.</p> <p>Match_type is the number -1, 0, or 1. Match_type specifies how Microsoft Excel matches lookup_value with values in lookup_array.</p> <p>If match_type is 1, MATCH finds the largest value that is less than or equal to lookup_value. Lookup_array must be placed in ascending order: ...-2, -1, 0, 1, 2, ..., A-Z, FALSE, TRUE.</p> <p>If match_type is 0, MATCH finds the first value that is exactly equal to lookup_value. Lookup_array can be in any order.</p> <p>If match_type is -1, MATCH finds the smallest value that is greater than or equal to lookup_value. Lookup_array must be placed in descending order: TRUE, FALSE, Z-A, ...2, 1, 0, -1, -2, ..., and so on.</p> <p>If match_type is omitted, it is assumed to be 1.</p>
<b>ROW</b>	<p>Returns the row number of a reference.</p>	<p><i>ROW(reference)</i></p> <p>Reference is the cell or range of cells for which you want the row number.</p> <p>If reference is omitted, it is assumed to be the reference of the cell in which the ROW function appears.</p> <p>Reference cannot refer to multiple areas.</p>
<b>ROWS</b>	<p>Returns the number of rows in a reference or array.</p>	<p><i>ROWS(array)</i></p> <p>Array is an array, an array formula, or a reference to a range of cells for which you want the number of rows.</p>
<b>TRANSPOSE</b>	<p>Returns a vertical range of cells as a horizontal range, or vice versa. TRANSPOSE must be entered as an array formula in a range that has the same number of rows and columns, respectively, as an array</p>	<p><i>TRANSPOSE(array)</i></p> <p>Array is an array or range of cells on a worksheet that you want to transpose. The transpose of an array is created by using the first row of the array as the first column of the new array, the second row of the array as the second column of the new array, and so on.</p>

	has columns and rows. Use TRANSPOSE to shift the vertical and horizontal orientation of an array on a worksheet.	
<b>VLOOKUP</b>	<p>Searches for a value in the leftmost column of a table, and then returns a value in the same row from a column you specify in the table. Use VLOOKUP instead of HLOOKUP when your comparison values are located in a column to the left of the data you want to find.</p> <p>The V in VLOOKUP stands for "Vertical."</p>	<p><i>VLOOKUP(lookup_value,table_array,col_index_num,range_lookup)</i></p> <p>Lookup_value is the value to be found in the first column of the array. Lookup_value can be a value, a reference, or a text string.</p> <p>Table_array is the table of information in which data is looked up. Use a reference to a range or a range name, such as Database or List.</p> <p>If range_lookup is TRUE, the values in the first column of table_array must be placed in ascending order: ..., -2, -1, 0, 1, 2, ..., A-Z, FALSE, TRUE; otherwise VLOOKUP may not give the correct value. If range_lookup is FALSE, table_array does not need to be sorted.</p> <p>You can put the values in ascending order by choosing the Sort command from the Data menu and selecting Ascending.</p> <p>The values in the first column of table_array can be text, numbers, or logical values.</p> <p>Col_index_num is the column number in table_array from which the matching value must be returned. A col_index_num of 1 returns the value in the first column in table_array; a col_index_num of 2 returns the value in the second column in table_array, and so on</p> <p>Range_lookup is a logical value that specifies whether you want VLOOKUP to find an exact match or an approximate match. If TRUE or omitted, an approximate match is returned. In other words, if an exact match is not found, the next largest value that is less than lookup_value is returned</p>

## *Text and Data*

<b>CHAR</b>	Returns the character specified by a number. Use CHAR to translate code page numbers you might get from files on other types of computers into characters.	<p><i>CHAR(number)</i></p> <p>Number is a number between 1 and 255 specifying which character you want. The character is from the character set used by your handheld.</p>
<b>CONCATENAT</b>	Joins several text strings into one text	<p><i>CONCATENATE (text1,text2,...)</i></p> <p>Text1, text2, ... are 1 to 30 text items to be joined into a</p>

<b>E</b>	string.	single text item. The text items can be text strings, numbers, or single-cell references.
<b>EXACT</b>	Compares two text strings and returns TRUE if they are exactly the same, FALSE otherwise. EXACT is case-sensitive but ignores formatting differences. Use EXACT to test text being entered into a document.	<i>EXACT(text1,text2)</i>  Text1 is the first text string. Text2 is the second text string.
<b>FIND</b>	FIND finds one text string (find_text) within another text string (within_text), and returns the number of the starting position of find_text, from the first character of within_text. You can also use SEARCH to find one text string within another, but unlike SEARCH, FIND is case sensitive and doesn't allow wildcard characters.	<i>FIND(find_text,within_text,start_num)</i>  Find_text is the text you want to find.  Within_text is the text containing the text you want to find.  Start_num specifies the character at which to start the search. The first character in within_text is character number 1. If you omit start_num, it is assumed to be 1.
<b>LEFT</b>	LEFT returns the first character or characters in a text string, based on the number of characters you specify.	<i>LEFT(text,num_chars)</i>  Text is the text string that contains the characters you want to extract.  Num_chars specifies the number of characters you want LEFT to extract.  Num_chars must be greater than or equal to zero. If num_chars is greater than the length of text, LEFT returns all of text. If num_chars is omitted, it is assumed to be 1.
<b>LEN</b>	LEN returns the number of characters in a text string.	<i>LEN(text)</i>  Text is the text whose length you want to find. Spaces count as characters.
<b>LOWER</b>	Converts all uppercase letters in a text string to lowercase.	<i>LOWER(text)</i>  Text is the text you want to convert to lowercase. LOWER does not change characters in text that are not letters.
<b>MID</b>	MID returns a specific number of characters from a text string, starting at the position you specify, based on the number of characters you specify.	<i>MID(text,start_num,num_chars)</i>  Text is the text string containing the characters you want to extract.  Start_num is the position of the first character you want to extract in text. The first character in text has start_num 1, and so on.  Num_chars specifies the number of characters you want MID to return from text.

<p><b>PROPER</b></p>	<p>Capitalizes the first letter in a text string and any other letters in text that follow any character other than a letter. Converts all other letters to lowercase letters.</p>	<p><i>PROPER(text)</i></p> <p>Text is text enclosed in quotation marks, a formula that returns text, or a reference to a cell containing the text you want to partially capitalize.</p>
<p><b>REPLACE</b></p>	<p>REPLACE replaces part of a text string, based on the number of characters you specify, with a different text string.</p>	<p><i>REPLACE(old_text,start_num,num_chars,new_text)</i></p> <p>Old_text is text in which you want to replace some characters.</p> <p>Start_num is the position of the character in old_text that you want to replace with new_text.</p> <p>Num_chars is the number of characters in old_text that you want REPLACE to replace with new_text.</p> <p>New_text is the text that will replace characters in old_text.</p>
<p><b>REPT</b></p>	<p>Repeats text a given number of times. Use REPT to fill a cell with a number of instances of a text string.</p> <p>If number_times is 0 (zero), REPT returns "" (empty text). If number_times is not an integer, it is truncated.</p>	<p><i>REPT(text,number_times)</i></p> <p>Text is the text you want to repeat.</p> <p>Number_times is a positive number specifying the number of times to repeat text.</p>
<p><b>RIGHT</b></p>	<p>RIGHT returns the last character or characters in a text string, based on the number of characters you specify.</p> <p>Num_chars must be greater than or equal to zero. If num_chars is greater than the length of text, RIGHT returns all of text. If num_chars is omitted, it is assumed to be 1.</p>	<p><i>RIGHT(text,num_chars)</i></p> <p>Text is the text string containing the characters you want to extract.</p> <p>Num_chars specifies the number of characters you want RIGHT to extract.</p> <p>Num_bytes specifies the number of characters you want RIGHTB to extract, based on bytes.</p>
<p><b>SUBSTITUTE</b></p>	<p>Substitutes new_text for old_text in a text string. Use SUBSTITUTE when you want to replace specific text in a text string; use REPLACE when you want to replace</p>	<p><i>SUBSTITUTE(text,old_text,new_text,instance_num)</i></p> <p>Text is the text or the reference to a cell containing text for which you want to substitute characters.</p> <p>Old_text is the text you want to replace.</p>

	any text that occurs in a specific location in a text string.	<p>New_text is the text you want to replace old_text with.</p> <p>Instance_num specifies which occurrence of old_text you want to replace with new_text. If you specify instance_num, only that instance of old_text is replaced. Otherwise, every occurrence of old_text in text is changed to new_text.</p>
<b>T</b>	<p>Returns the text referred to by value.</p> <p>If value is or refers to text, T returns value. If value does not refer to text, T returns "" (empty text).</p> <p>You do not generally need to use the T function in a formula because Microsoft Excel automatically converts values as necessary. This function is provided for compatibility with other spreadsheet programs.</p>	<p><i>T(value)</i></p> <p>Value is the value you want to test.</p>
<b>TRIM</b>	<p>Removes all spaces from text except for single spaces between words. Use TRIM on text that you have received from another application that may have irregular spacing.</p>	<p><i>TRIM(text)</i></p> <p>Text is the text from which you want spaces removed.</p>
<b>UPPER</b>	<p>Converts text to uppercase.</p>	<p><i>UPPER(text)</i></p> <p>Text is the text you want converted to uppercase. Text can be a reference or text string.</p>