MS-EXCEL 2007

Participant Guide

Aptech Corporate Training

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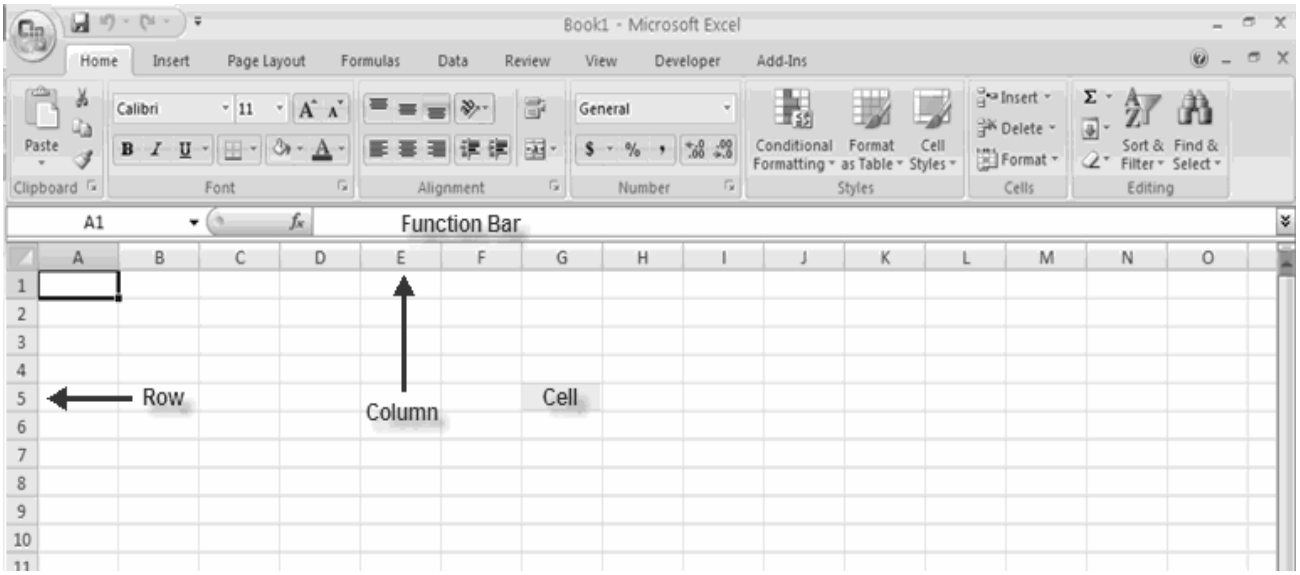
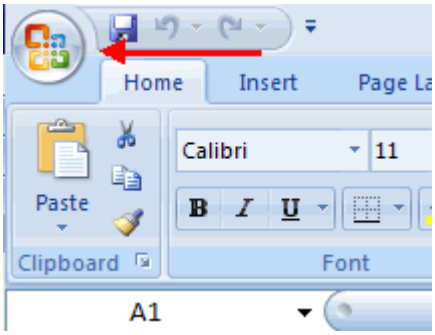
1 GETTING STARTED

Getting started with Excel 2007 you will notice that there are many similar features to previous versions. You will also notice that there are many new features that you'll be able to utilize. There are three features that you should remember as you work within Excel 2007: the Microsoft Office Button, the Quick Access Toolbar, and the Ribbon. The function of these features will be more fully explored below.



Spreadsheets

A spreadsheet is an electronic document that stores various types of data. There are vertical columns and horizontal rows. A cell is where the column and row intersect. A cell can contain data and can be used in calculations of data within the spreadsheet. An Excel spreadsheet can contain workbooks and worksheets. The workbook is the holder for related worksheets.

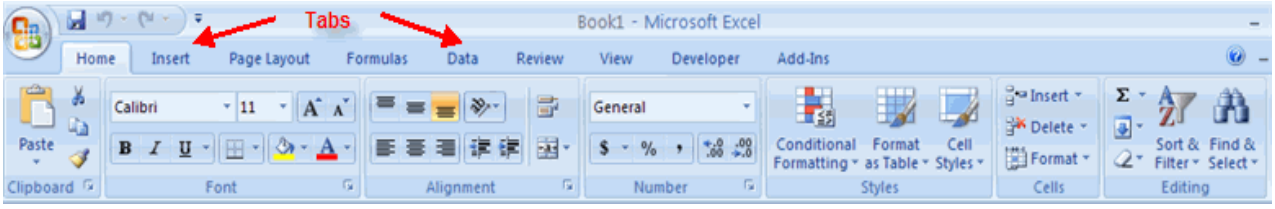


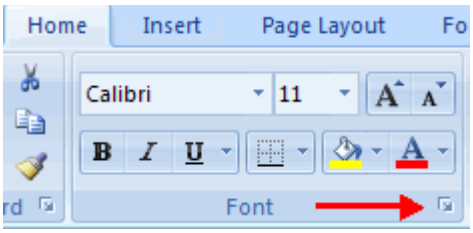
Microsoft Office Button

The Microsoft Office Button performs many of the functions that were located in the File menu of older versions of Excel. This button allows you to create a new workbook, Open an existing workbook, save and save as, print, send, or close.

Ribbon

The ribbon is the panel at the top portion of the document It has seven tabs: Home, Insert, Page Layouts, Formulas, Data, Review, and View. Each tab is divided into groups. The groups are logical collections of features designed to perform function that you will utilize in developing or editing your Excel spreadsheets.



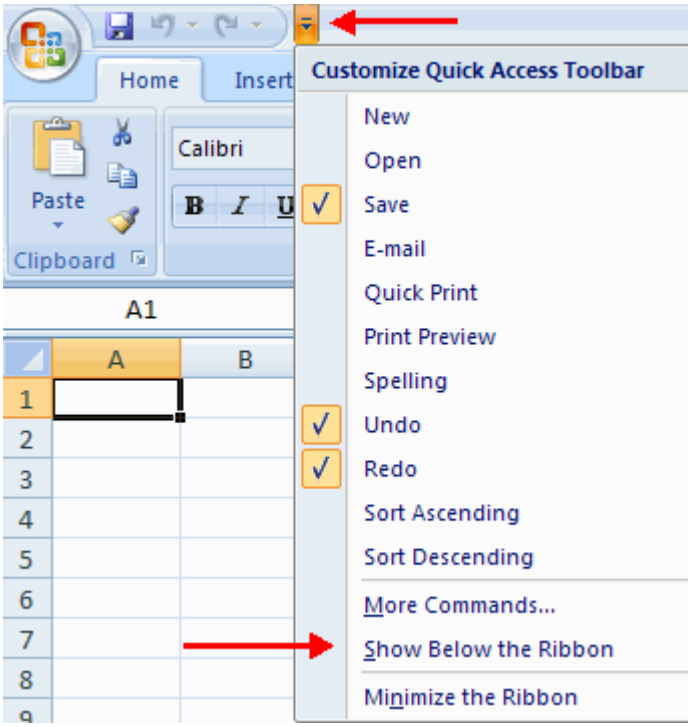


Commonly utilized features are displayed on the Ribbon. To view additional features within each group, click the arrow at the bottom right corner of each group.

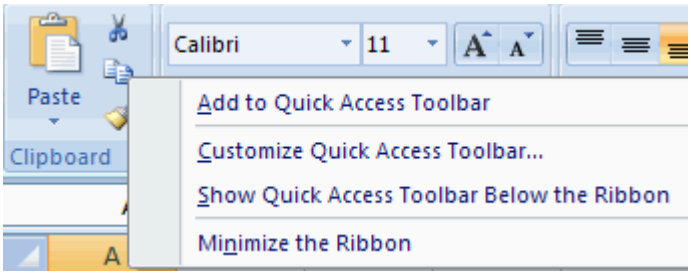
Home : Clipboard, Fonts, Alignment, Number, Styles, Cells, Editing
Insert : Tables, Illustrations, Charts, Links, Text
Page Layouts : Themes, Page Setup, Scale to Fit, Sheet Options, Arrange
Formulas : Function Library, Defined Names, Formula Auditing, Calculation
Data : Get External Data, Connections, Sort & Filter, Data Tools, Outline
Review : Proofing, Comments, Changes
View : Workbook Views, Show/Hide, Zoom, Window, Macros

Quick Access Toolbar

The **quick access toolbar** is a customizable toolbar that contains commands that you may want to use. You can place the quick access toolbar above or below the ribbon. To change the location of the quick access toolbar, click on the arrow at the end of the toolbar and click **Show Below the Ribbon**.

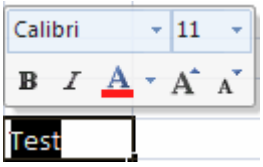


You can also add items to the quick access toolbar. Right click on any item in the Office Button or the Ribbon and click Add to Quick Access Toolbar and a shortcut will be added.



Mini Toolbar

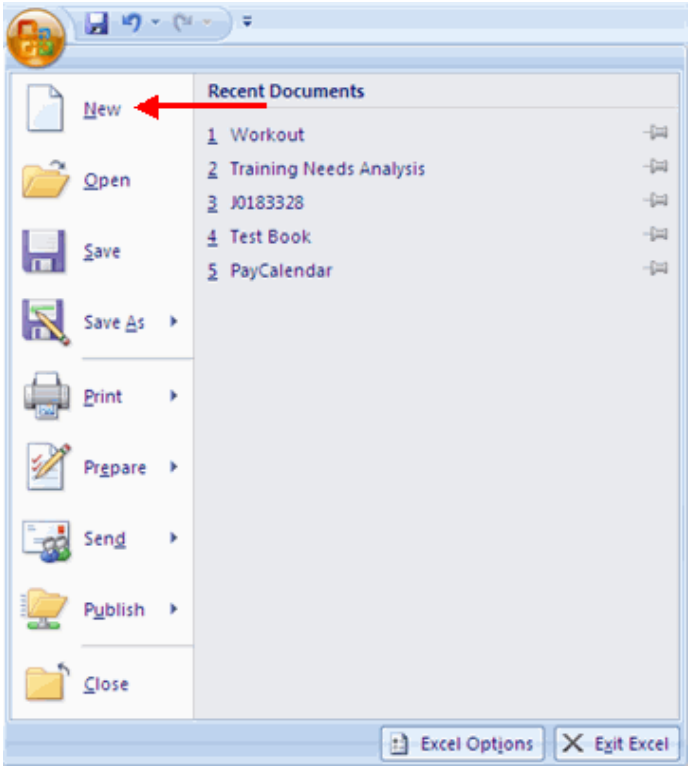
A new feature in Office 2007 is the Mini Toolbar. This is a floating toolbar that is displayed when you select text or right-click text. It displays common formatting tools, such as Bold, Italics, Fonts, Font Size and Font Color.



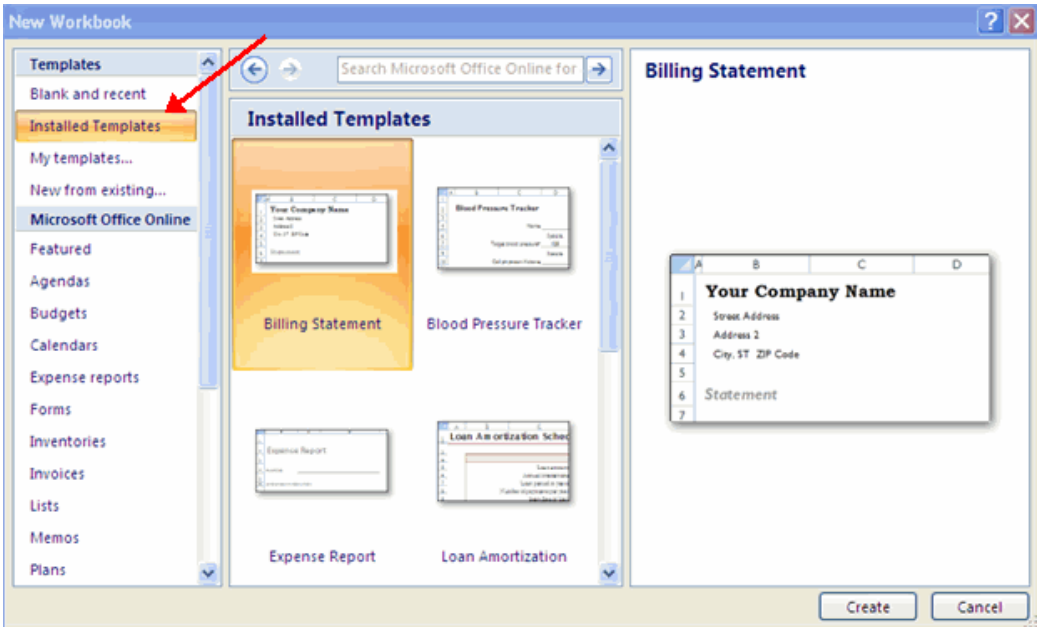
Create a Workbook

To create a new Workbook:

- Click the **Microsoft Office Toolbar**
- Click **New**
- Choose **Blank Document**



If you want to create a new document from a template, explore the templates and choose one that fits your needs.



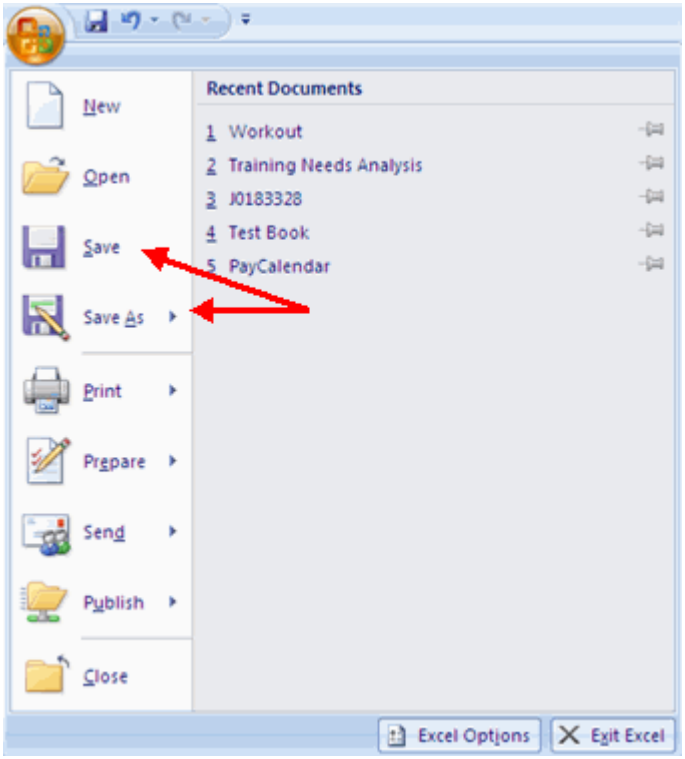
Save a Workbook

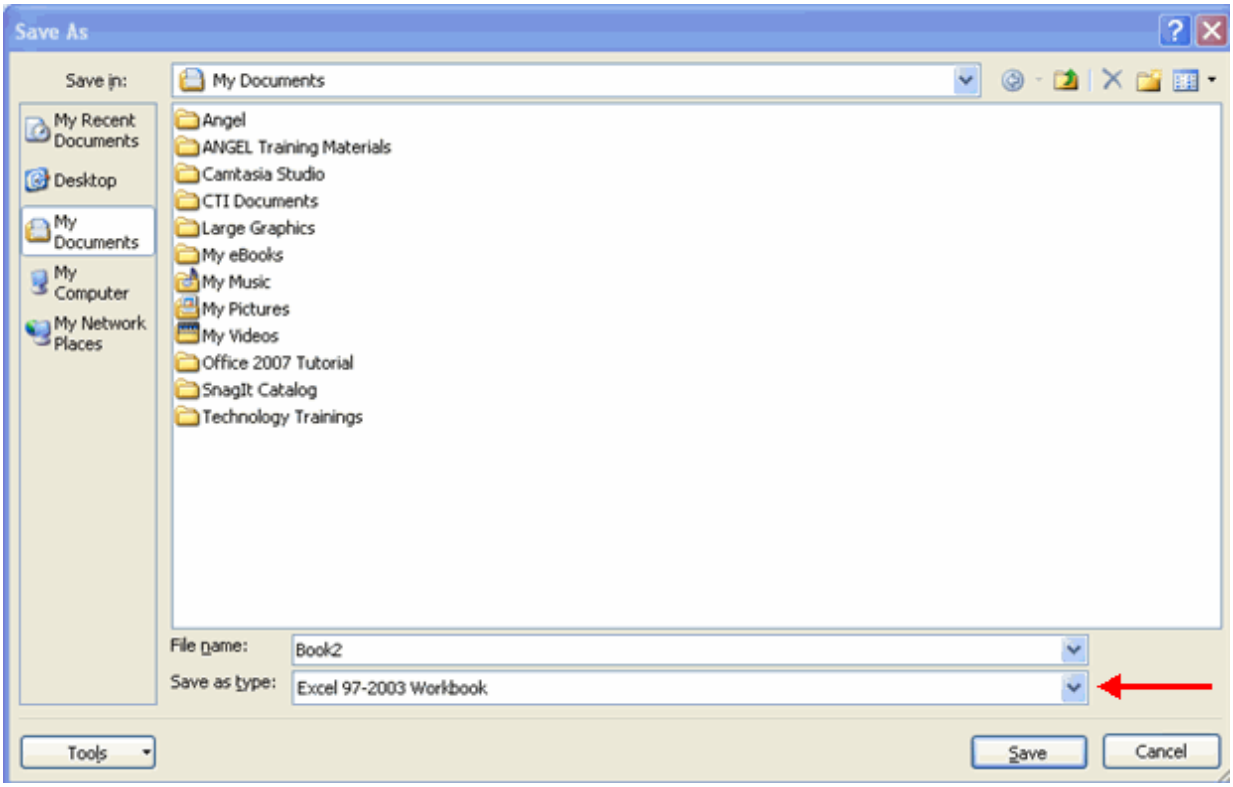
When you save a workbook, you have two choices: **Save** or **Save As**.
To save a document:

- Click the **Microsoft Office Button**
- Click **Save**

You may need to use the **Save As** feature when you need to save a workbook under a different name or to save it for earlier versions of Excel. Remember that older versions of Excel will not be able to open an Excel 2007 worksheet unless you save it as an Excel 97-2003 Format. To use the **Save As** feature:

- Click the **Microsoft Office Button**
- Click **Save As**
- Type in the name for the Workbook
- In the **Save as Type** box, choose **Excel 97-2003 Workbook**

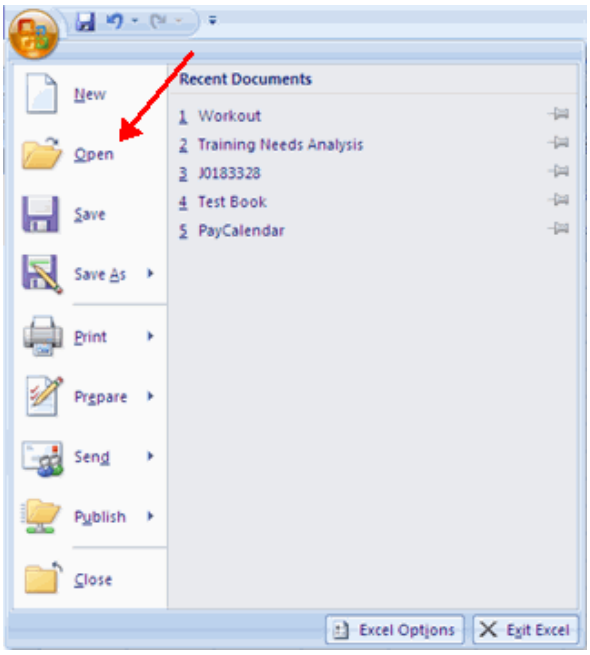




Open a Workbook

To open an existing workbook:

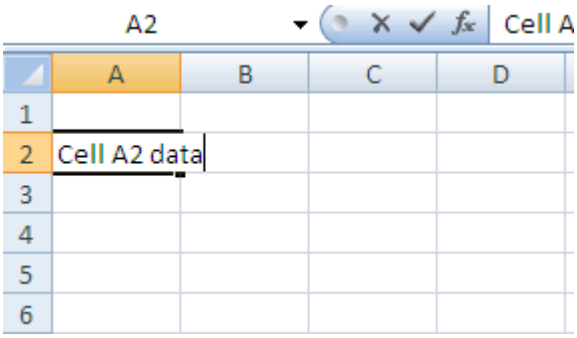
- Click the **Microsoft Office Button**
- Click **Open**
- Browse to the workbook
- Click the title of the workbook
- Click **Open**



Entering Data

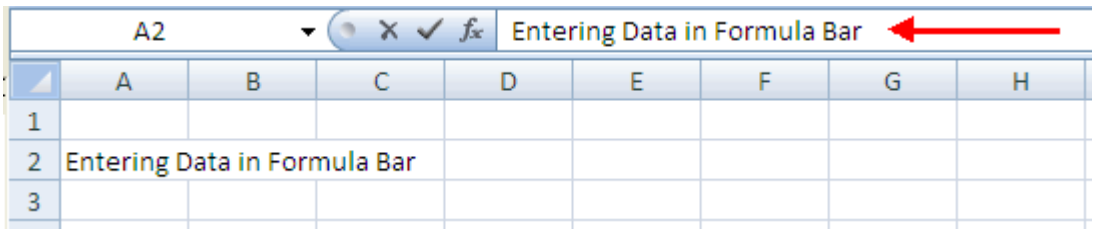
There are different ways to enter data in Excel: in an active cell or in the formula bar. To enter data in an active cell:

- Click in the **cell** where you want the data
- Begin typing



To enter data into the **formula bar**

- Click the cell where you would like the data
- Place the cursor in the **Formula Bar**
- Type in the data



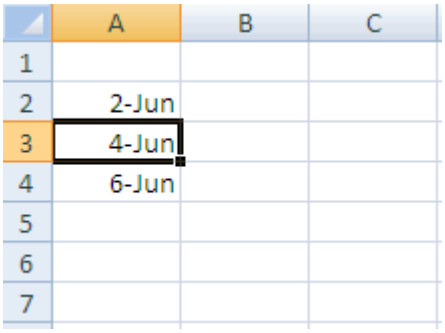
❸ MANIPULATING DATA

Excel allows you to move, copy, and paste cells and cell content through cutting and pasting and copying and pasting.

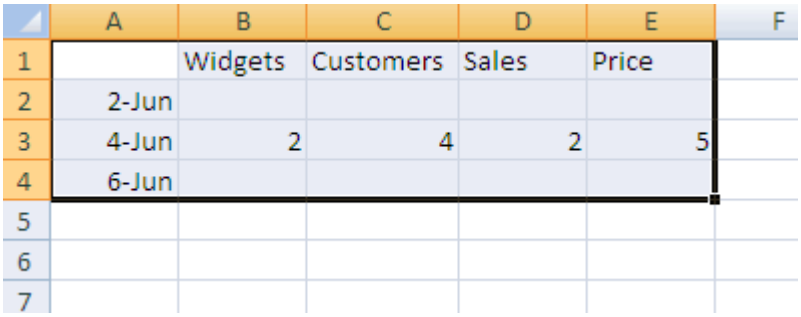
Select Data

To select a cell or data to be copied or cut:

- Click the **cell**

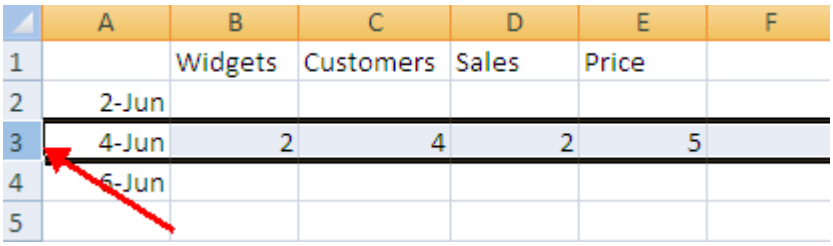


- Click and drag the cursor to select many cells in a range

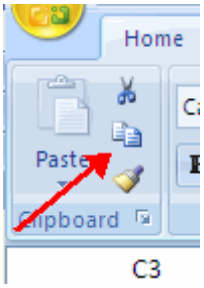


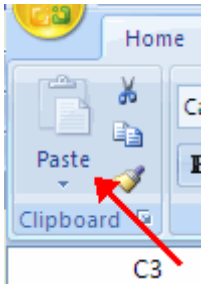
Select a Row or Column

To select a row or column click on the **row** or **column header**.



Copy and Paste

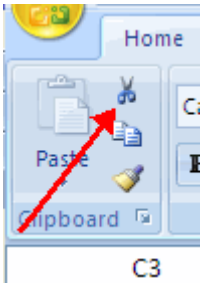


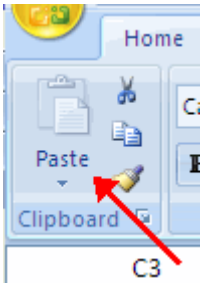


To copy and paste data:

- Select the cell(s) that you wish to copy
- On the **Clipboard** group of the **Home** tab, click **Copy**
- Select the cell(s) where you would like to copy the data
- On the **Clipboard** group of the **Home** tab, click **Paste**

Cut and Paste





To cut and paste data:

- Select the cell(s) that you wish to copy
- On the **Clipboard** group of the **Home** tab, click **Cut**
- Select the cell(s) where you would like to copy the data
- On the **Clipboard** group of the **Home** tab, click **Paste**

Undo and Redo

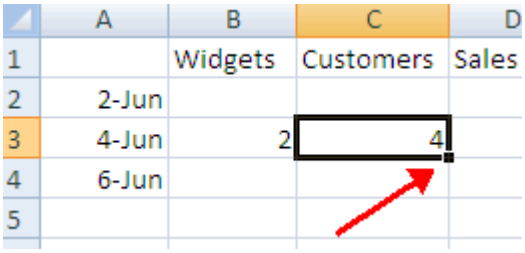
To undo or redo your most recent actions:

- On the **Quick Access Toolbar**
- Click **Undo** or **Redo**

Auto Fill

The Auto Fill feature fills cell data or series of data in a worksheet into a selected range of cells. If you want the same data copied into the other cells, you only need to complete one cell. If you want to have a series of data (for example, days of the week) fill in the first two cells in the series and then use the auto fill feature. To use the Auto Fill feature:

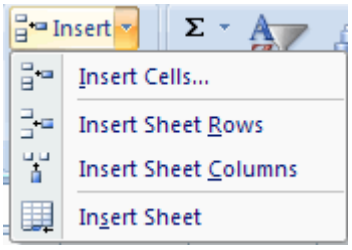
- **Click** the **Fill Handle**
- **Drag** the **Fill Handle** to complete the cells



Insert Cells, Rows, and Columns

To insert cells, rows, and columns in Excel:

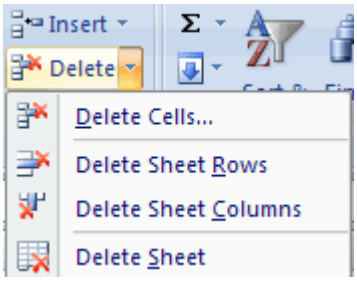
- Place the cursor in the row below where you want the new row, or in the column to the left of where you want the new column
- Click the **Insert** button on the **Cells** group of the **Home** tab
- Click the appropriate choice: **Cell, Row, or Column**



Delete Cells, Rows and Columns

To delete cells, rows, and columns:

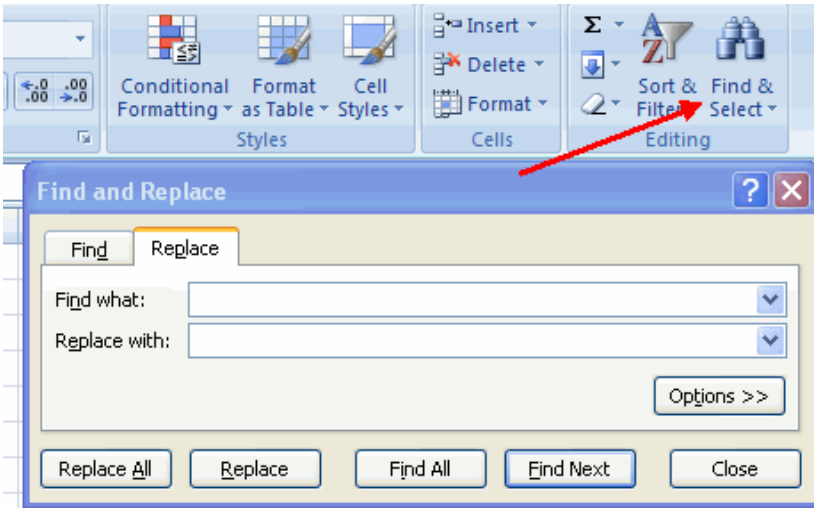
- Place the cursor in the cell, row, or column that you want to delete
- Click the **Delete** button on the **Cells** group of the **Home** tab
- Click the appropriate choice: **Cell, Row, or Column**



Find and Replace

To find data or find and replace data:

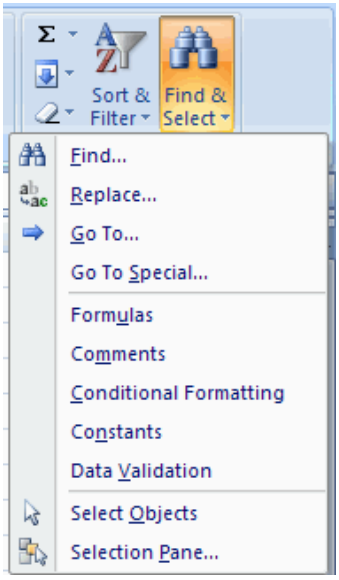
- Click the **Find & Select** button on the **Editing** group of the **Home** tab
- Choose **Find** or **Replace**
- Complete the **Find What** text box
- Click on **Options** for more search options



Go To Command

The Go To command takes you to a specific cell either by cell reference (the Column Letter and the Row Number) or cell name.

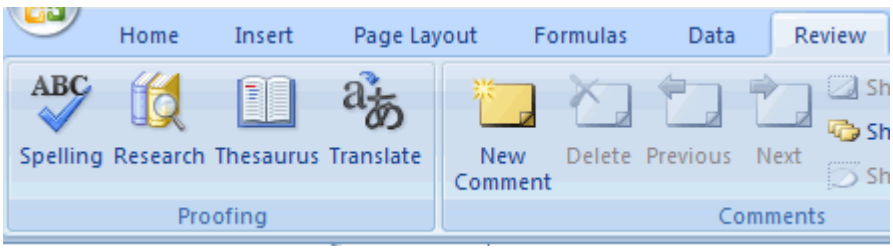
- Click the **Find & Select** button on the **Editing** group of the **Home** tab
- Click **Go To**



Spell Check

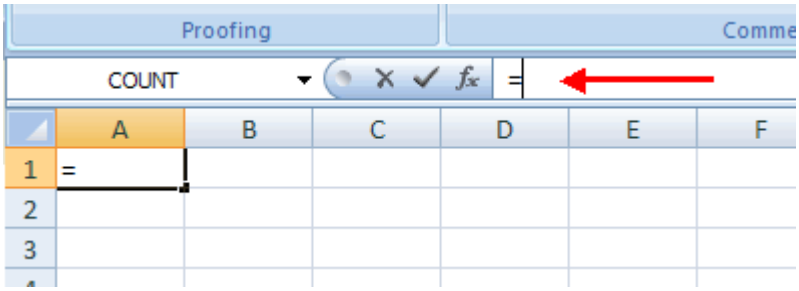
To check the spelling:

- On the **Review** tab click the **Spelling** button



5 PERFORMING CALCULATIONS

A formula is a set of mathematical instructions that can be used in Excel to perform calculations. Formals are started in the formula box with an = sign.



There are many elements to and excel formula.

References : The cell or range of cells that you want to use in your calculation

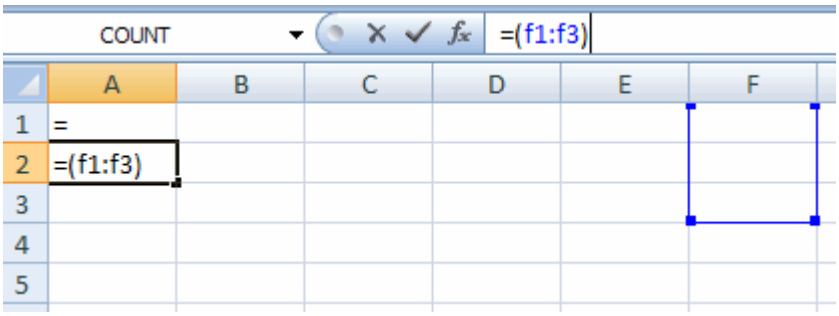
Operators : Symbols (+, -, *, /, etc.) that specify the calculation to be performed

Constants : Numbers or text values that do not change

Functions : Predefined formulas in Excel

To create a basic formula in Excel:

- Select the **cell** for the formula
- Type **=** (the equal sign) and the **formula**
- Click **Enter**



Calculate with Functions

A function is a built in formula in Excel. A function has a name and arguments (the mathematical function) in parentheses. Common functions in Excel:

Sum: Adds all cells in the argument

Average: Calculates the average of the cells in the argument

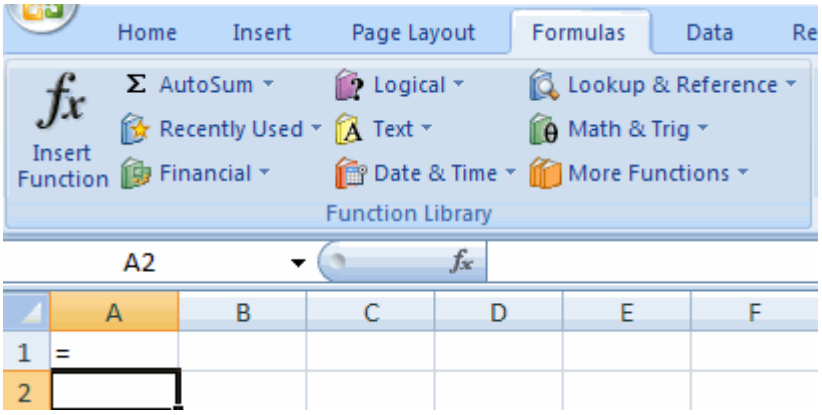
Min: Finds the minimum value

Max: Finds the maximum value

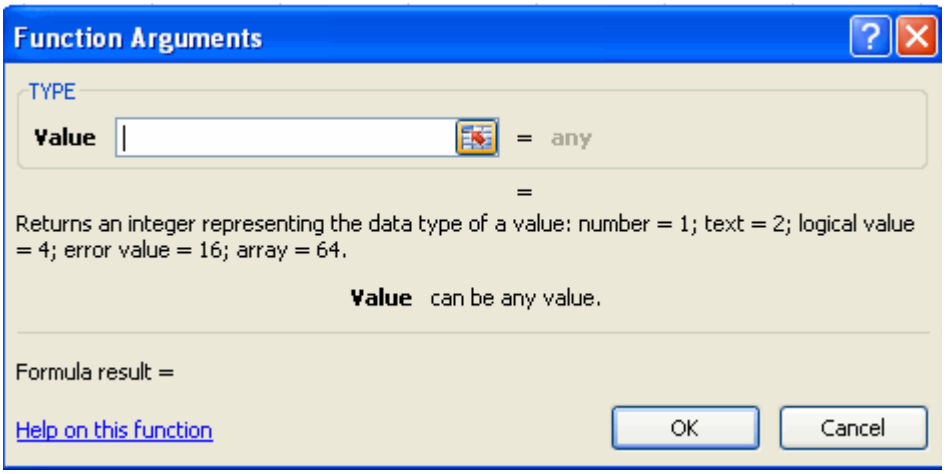
Count: Finds the number of cells that contain a numerical value within a range of the argument

To calculate a function:

- Click the **cell** where you want the function applied
- Click the **Insert Function** button
- Choose the function
- Click **OK**



- Complete the Number 1 box with the first cell in the range that you want calculated
- Complete the Number 2 box with the last cell in the range that you want calculated



Function Library

The function library is a large group of functions on the Formula Tab of the Ribbon. These functions include:

AutoSum : Easily calculates the sum of a range

Recently Used : All recently used functions

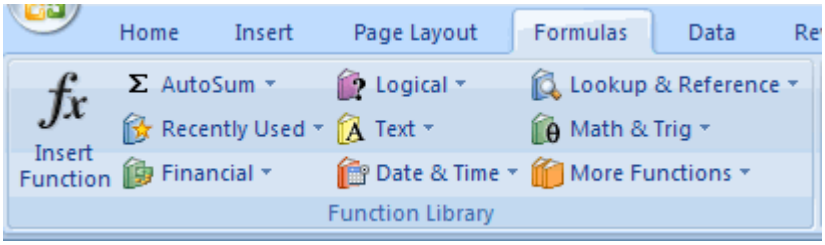
Financial : Accrued interest, cash flow return rates and additional financial functions

Logical : And, If, True, False, etc.

Text : Text based functions

Date & Time : Functions calculated on date and time

Math & Trig : Mathematical Functions



Relative, Absolute and Mixed References

Calling cells by just their column and row labels (such as "A1") is called **relative referencing**. When a formula contains relative referencing and it is copied from one cell to another, Excel does not create an exact copy of the formula. It will change cell addresses relative to the row and column they are moved to. For example, if a simple addition formula in cell C1 "=(A1+B1)" is copied to cell C2, the formula would change to "=(A2+B2)" to reflect the new row. To prevent this change, cells must be called by **absolute referencing** and this is accomplished by placing dollar signs "$" within the cell addresses in the formula. Continuing the previous example, the formula in cell C1 would read "=(A1+B1)" if the value of cell C2 should be the sum of cells A1 and B1. Both the column and row of both cells are absolute and will not change when copied. **Mixed referencing** can also be used where only the row OR column fixed. For example, in the formula "=(A$1+$B2)", the row of cell A1 is fixed and the column of cell B2 is fixed.

Linking Worksheets

You may want to use the value from a cell in another worksheet within the same workbook in a formula. For example, the value of cell A1 in the current worksheet and cell A2 in the second worksheet can be added using the format "sheetname!celladdress". The formula for this example would be "=A1+Sheet2!A2" where the value of cell A1 in the current worksheet is added to the value of cell A2 in the worksheet named "Sheet2".

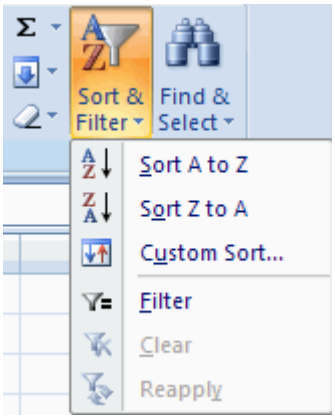
6 SORT AND FILTER

Sorting and Filtering allow you to manipulate data in a worksheet based on given set of criteria.

Basic Sorts

To execute a basic descending or ascending sort based on one column:

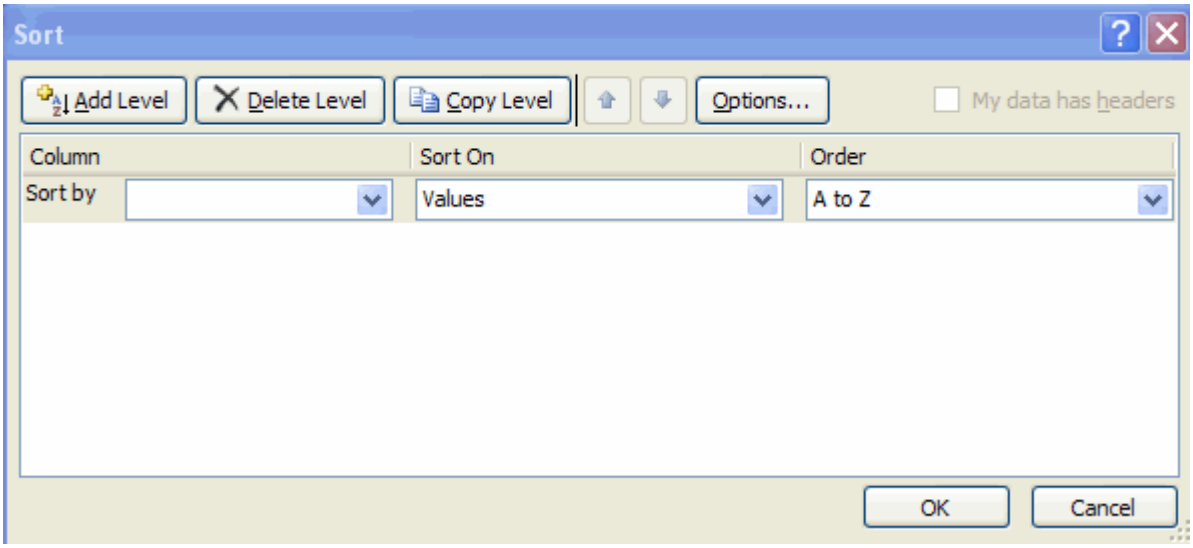
- Highlight the cells that will be sorted
- Click the **Sort & Filter** button on the **Home** tab
- Click the **Sort Ascending** (A-Z) button or **Sort Descending** (Z-A) button



Custom Sorts

To sort on the basis of more than one column:

- Click the **Sort & Filter** button on the **Home** tab
- Choose which column you want to sort by first
- Click **Add Level**
- Choose the next column you want to sort
- Click **OK**

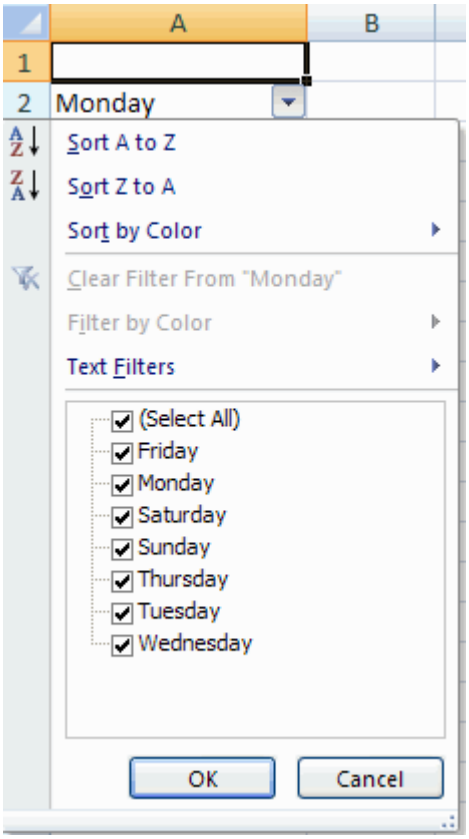


Filtering

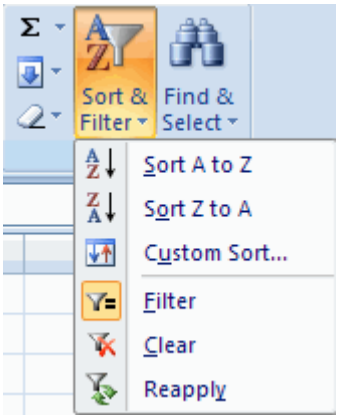
Filtering allows you to display only data that meets certain criteria. To filter:

- Click the column or columns that contain the data you wish to filter

- On the **Home** tab, click on **Sort & Filter**
- Click **Filter** button
- Click the **Arrow** at the bottom of the first cell
- Click the **Text Filter**
- Click the **Words** you wish to Filter



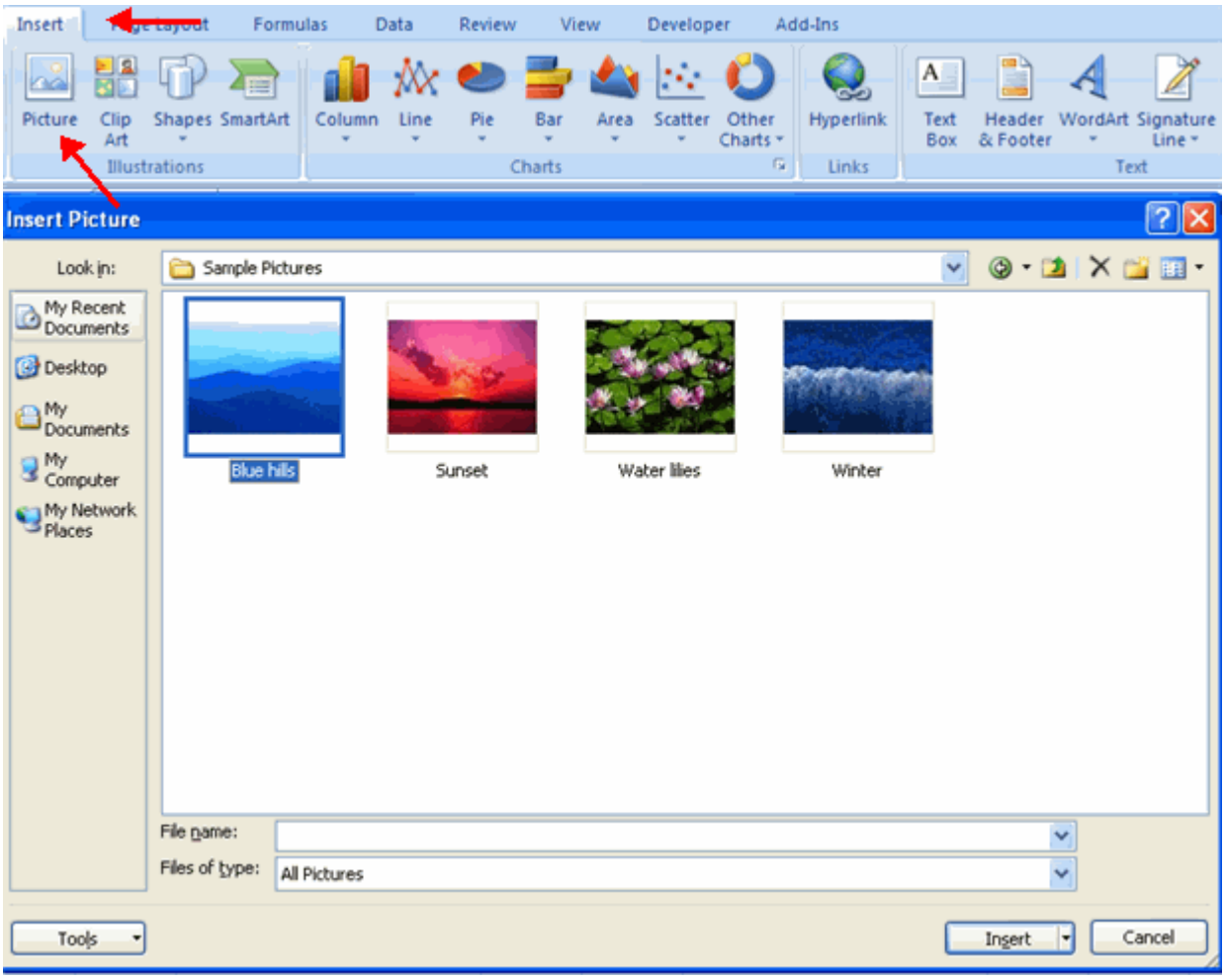
- To clear the filter click the **Sort & Filter** button
- Click **Clear**



Adding a Picture

To add a picture:

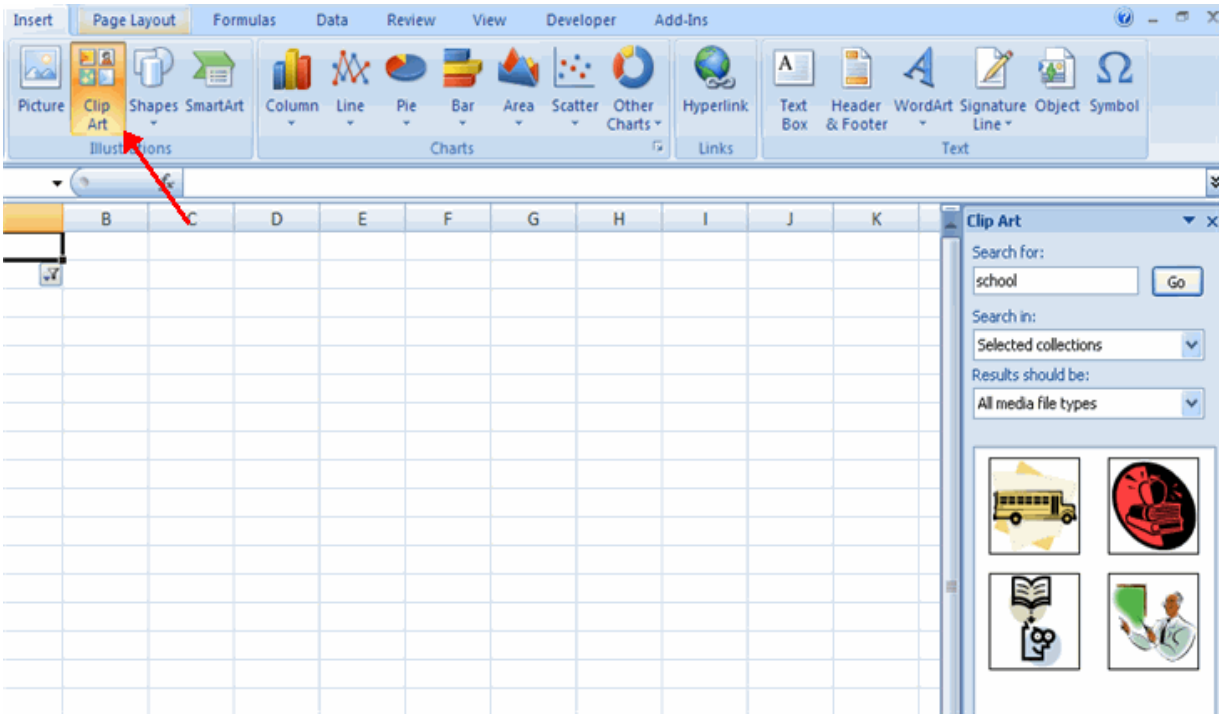
- Click the **Insert** tab
- Click the **Picture** button
- Browse to the picture from your files
- Click the **name** of the picture
- Click **Insert**
- To move the graphic, click it and drag it to where you want it



Adding Clip Art

To add Clip Art:

- Click the **Insert** tab
- Click the **Clip Art** button
- Search for the clip art using the search **Clip Art** dialog box
- Click the **clip art**
- To move the graphic, click it and drag it to where you want it



Editing Pictures and Clip Art

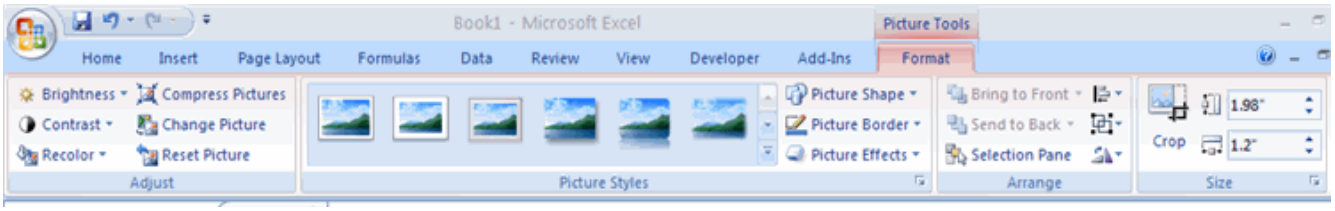
When you add a graphic to the worksheet, an additional tab appears on the Ribbon. The Format tab allows you to format the pictures and graphics. This tab has four groups:

Adjust: Controls the picture brightness, contrast, and colors

Picture Style: Allows you to place a frame or border around the picture and add effects

Arrange: Controls the alignment and rotation of the picture

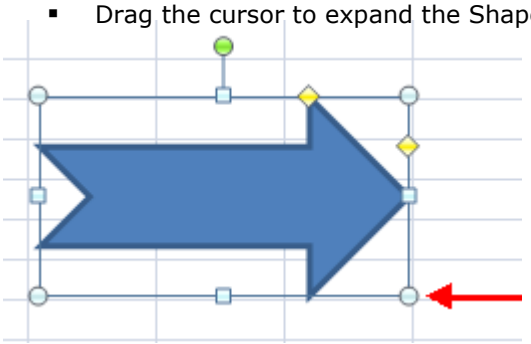
Size: Cropping and size of graphic

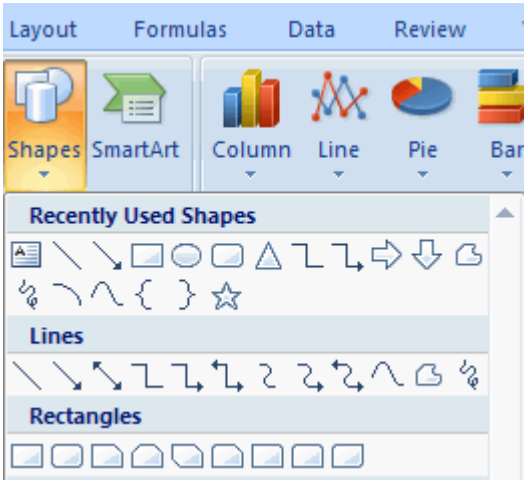


Adding Shapes

To add Shape:

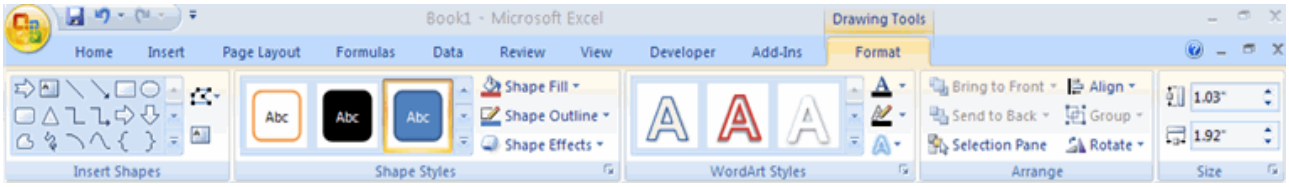
- Click the **Insert** tab
- Click the **Shapes** button
- Click the shape you choose
- Click the **Worksheet**
- Drag the cursor to expand the Shape





To format the shapes:

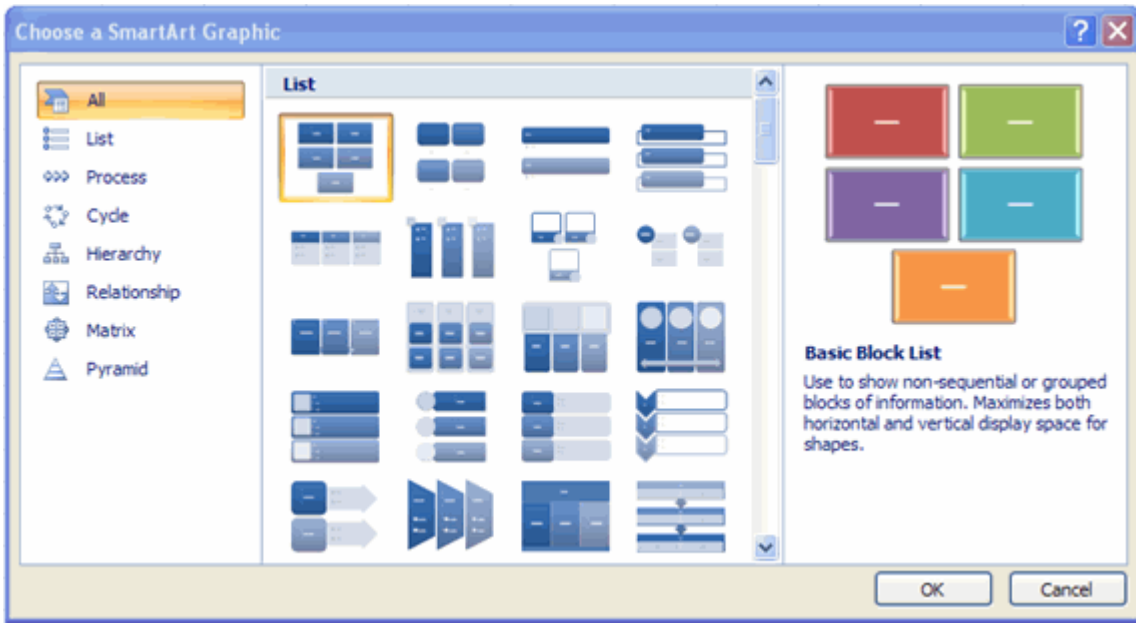
- Click the **Shape**
- Click the **Format** tab



Adding SmartArt

SmartArt is a feature in Office 2007 that allows you to choose from a variety of graphics, including flow charts, lists, cycles, and processes. To add SmartArt:

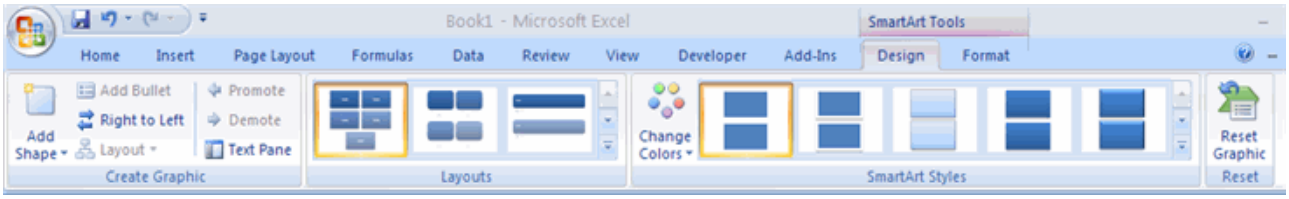
- Click the **Insert** tab
- Click the **SmartArt** button
- Click the **SmartArt** you choose



- Select the **Smart Art**
- Drag it to the desired location in the worksheet

To format the SmartArt:

- Select the **SmartArt**
- Click either the **Design** or the **Format** tab
- Click the **SmartArt** to add text and pictures.



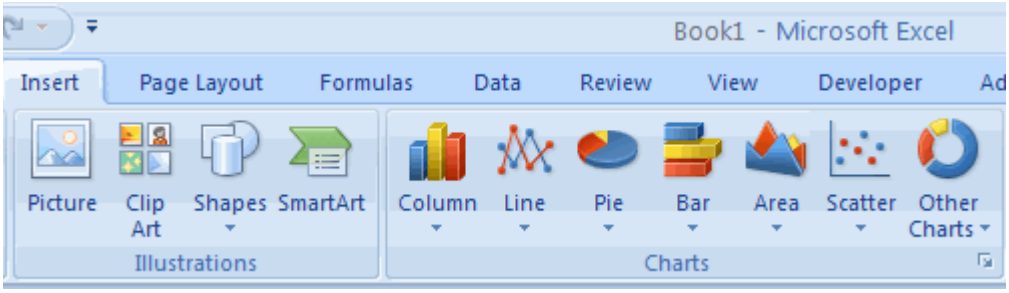
8 CHARTS

Charts allow you to present information contained in the worksheet in a graphic format. Excel offers many types of charts including: Column, Line, Pie, Bar, Area, Scatter and more. To view the charts available click the Insert Tab on the Ribbon.

Create a Chart

To create a chart:

- Select the **cells** that contain the data you want to use in the chart
- Click the **Insert** tab on the Ribbon
- Click the type of **Chart** you want to create

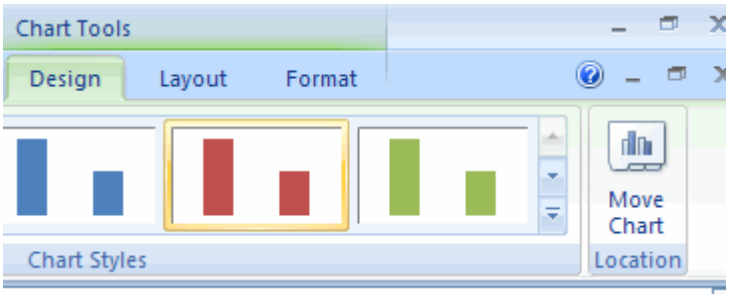


Modify a Chart

Once you have created a chart you can do several things to modify the chart.

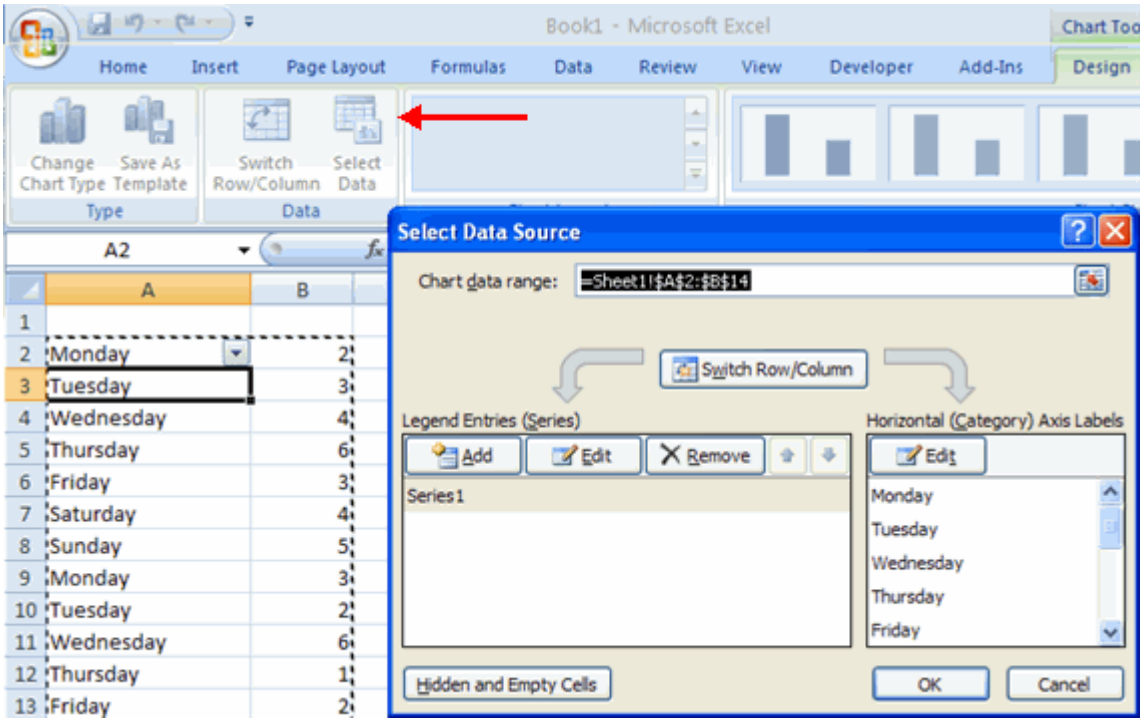
To move the chart:

- Click the **Chart** and **Drag** it another location on the same worksheet, or
- Click the **Move Chart** button on the **Design** tab
- Choose the desired location (either a new sheet or a current sheet in the workbook)



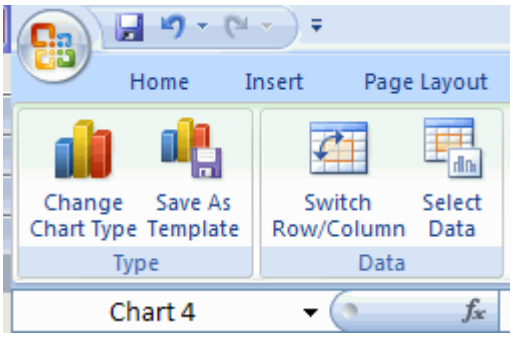
To change the data included in the chart:

- Click the **Chart**
- Click the **Select Data** button on the **Design** tab



To reverse which data are displayed in the rows and columns:

- Click the **Chart**
- Click the **Switch Row/Column** button on the **Design** tab



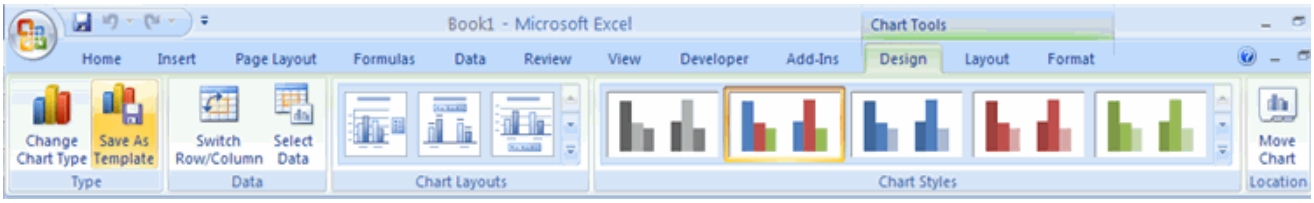
To modify the labels and titles:

- Click the **Chart**
- On the **Layout** tab, click the **Chart Title** or the **Data Labels** button
- Change the **Title** and click **Enter**

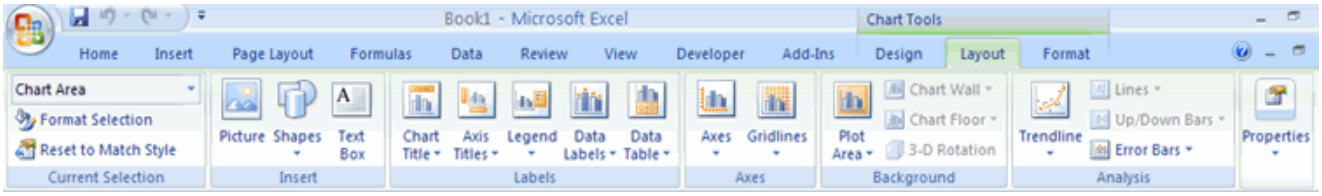
Chart Tools

The Chart Tools appear on the Ribbon when you click on the chart. The tools are located on three tabs: Design, Layout, and Format.

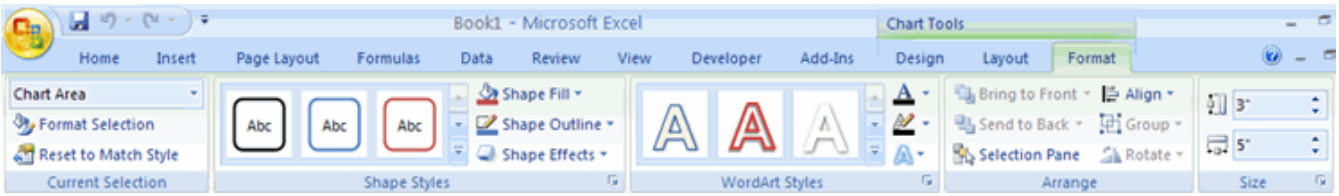
Within the **Design** tab you can control the chart type, layout, styles, and location.



Within the **Layout** tab you can control inserting pictures, shapes and text boxes, labels, axes, background, and analysis.

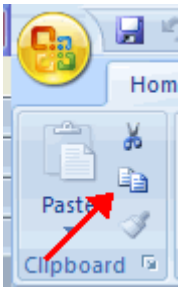


Within the **Format** tab you can modify shape styles, word styles and size of the chart.



Copy a Chart to Word

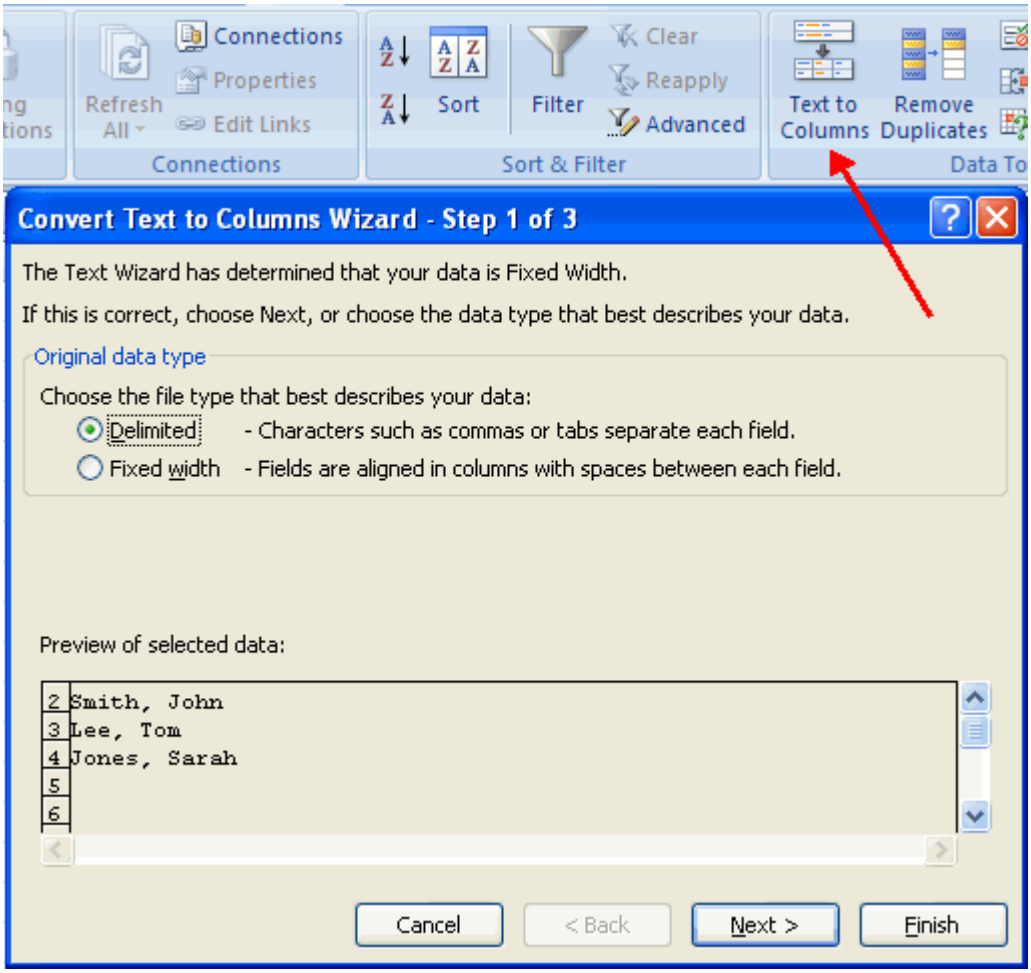
- Select the **chart**
- Click **Copy** on the **Home** tab
- Go to the **Word** document where you want the chart located
- Click **Paste** on the **Home** tab



Convert Text to Columns

Sometimes you will want to split data in one cell into two or more cells. You can do this easily by utilizing the Convert Text to Columns Wizard.

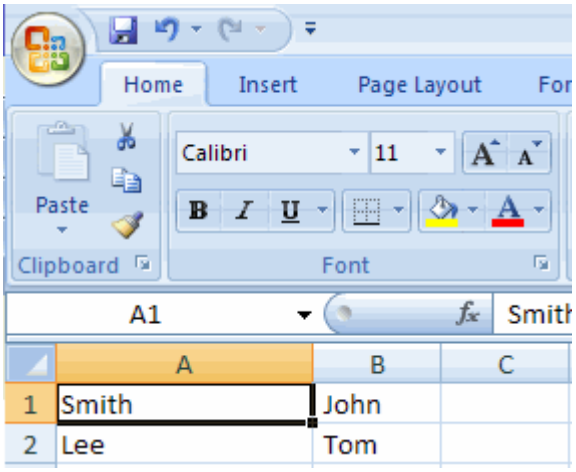
- Highlight the column in which you wish to split the data
- Click the **Text to Columns** button on the **Data** tab
- Click **Delimited** if you have a comma or tab separating the data, or click fixed widths to set the data separation at a specific size.



Modify Fonts

Modifying fonts in Excel will allow you to emphasize titles and headings. To modify a font:

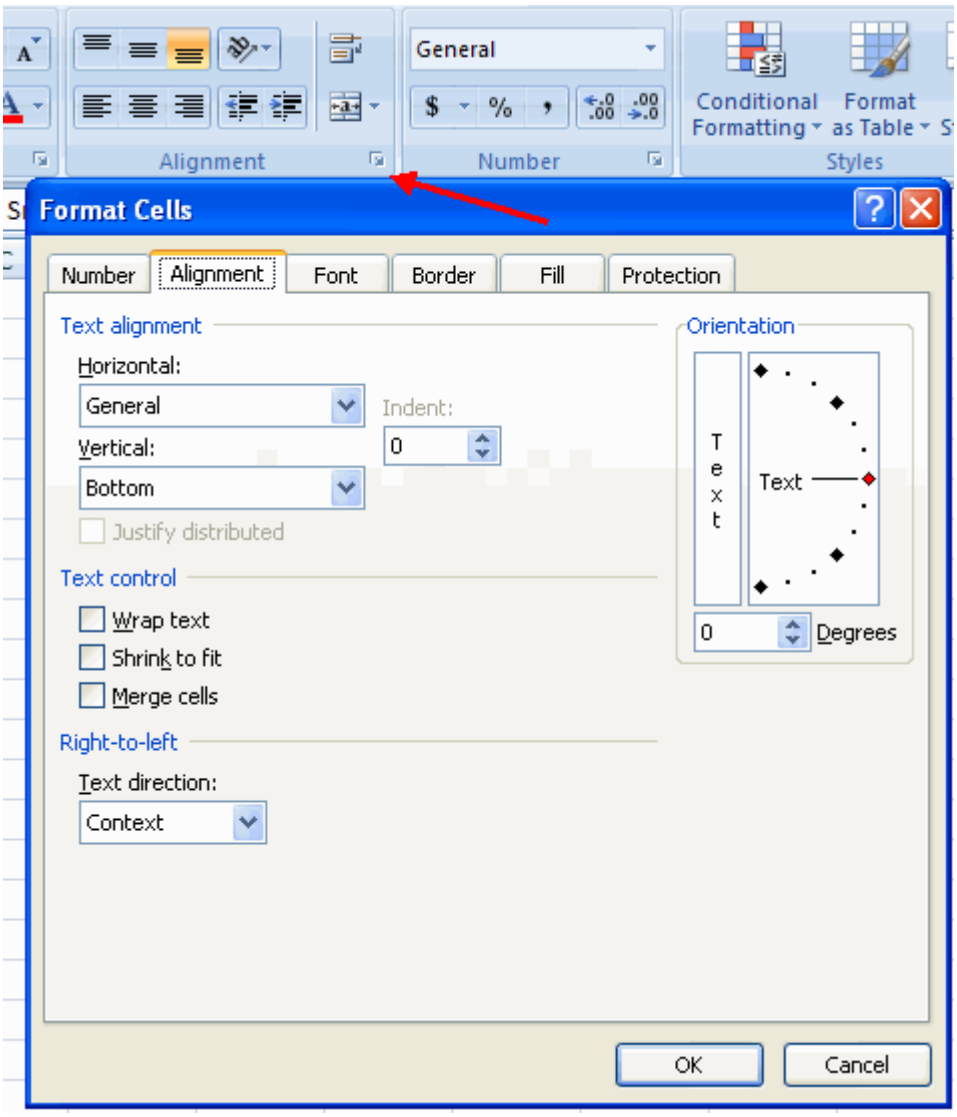
- Select the cell or cells that you would like the font applied
- On the **Font** group on the **Home** tab, choose the font type, size, bold, italics, underline, or color



Format Cells Dialog Box

In Excel, you can also apply specific formatting to a cell. To apply formatting to a cell or group of cells:

- Select the cell or cells that will have the formatting
- Click the **Dialog Box** arrow on the **Alignment** group of the **Home** tab



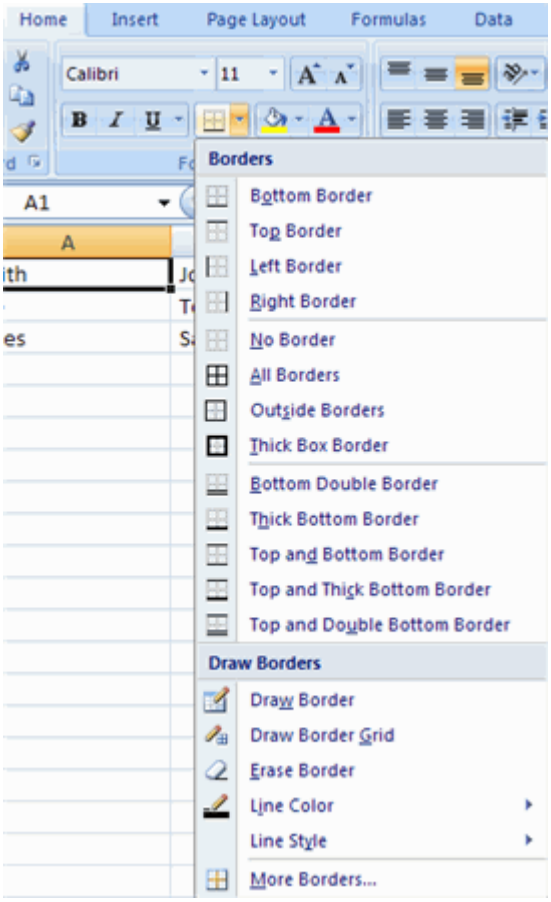
There are several tabs on this dialog box that allow you to modify properties of the cell or cells.

Number : Allows for the display of different number types and decimal places
Alignment : Allows for the horizontal and vertical alignment of text, wrap text, shrink text, merge cells and the direction of the text.
Font : Allows for control of font, font style, size, color, and additional features
Border : Border styles and colors
Fill: Cell fill colors and styles

Add Borders and Colors to Cells

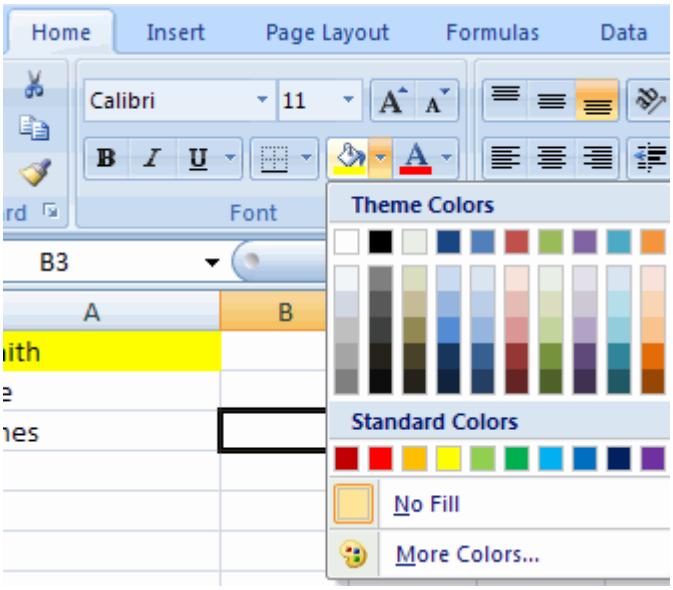
Borders and colors can be added to cells manually or through the use of styles. To add borders manually:

- Click the **Borders** drop down menu on the **Font** group of the **Home** tab
- Choose the appropriate border



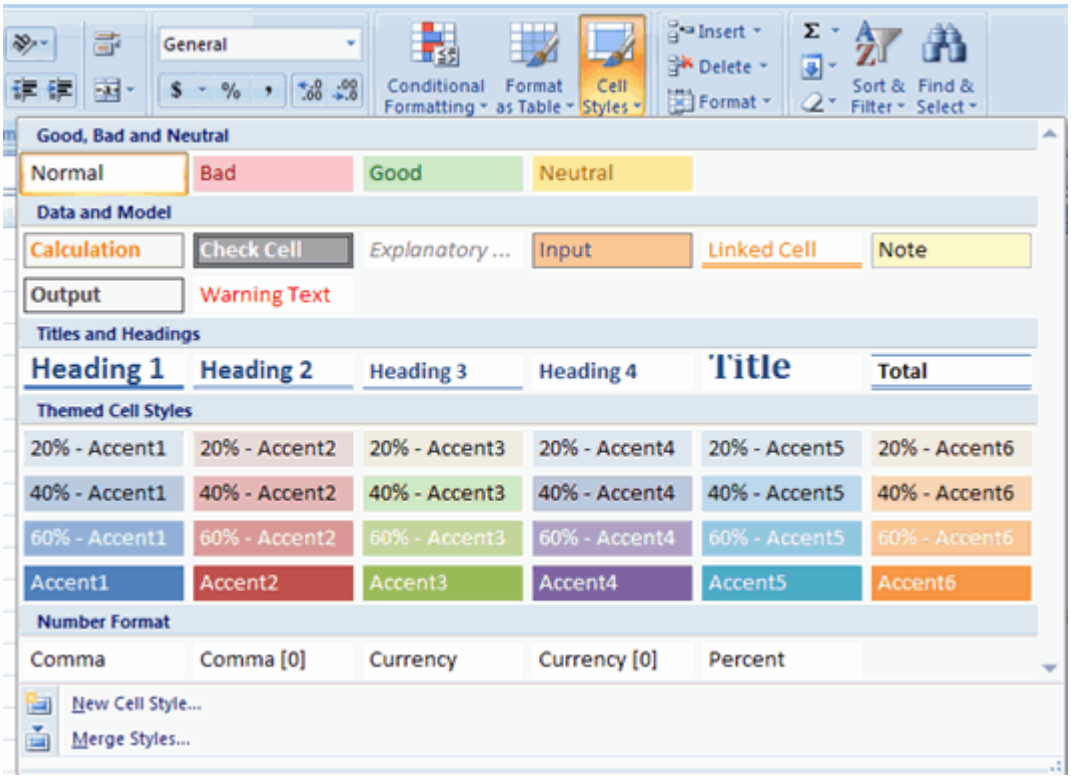
To apply colors manually:

- Click the **Fill** drop down menu on the **Font** group of the **Home** tab
- Choose the appropriate color



To apply borders and colors using styles:

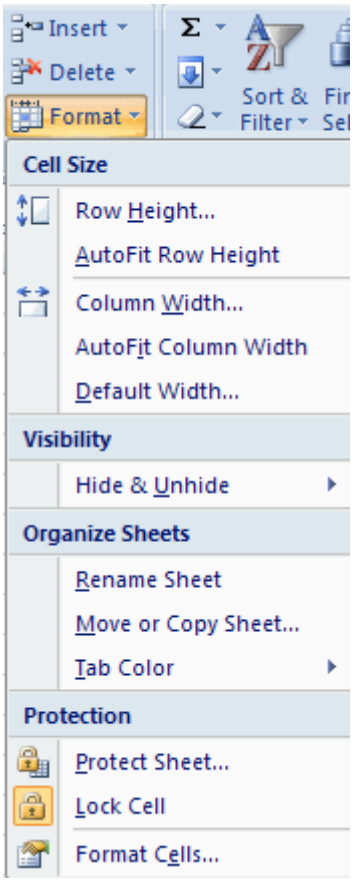
- Click **Cell** Styles on the **Home** tab
- Choose a style or click **New Cell Style**



Change Column Width and Row Height

To change the width of a column or the height of a row:

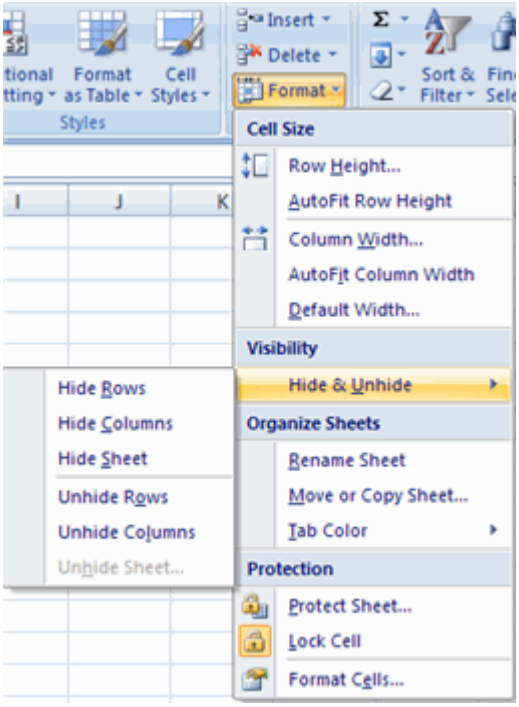
- Click the **Format** button on the **Cells** group of the **Home** tab
- Manually adjust the height and width by clicking **Row Height** or **Column Width**
- To use **AutoFit** click **AutoFit Row Height** or **AutoFit Column Width**



Hide or Unhide Rows or Columns

To hide or unhide rows or columns:

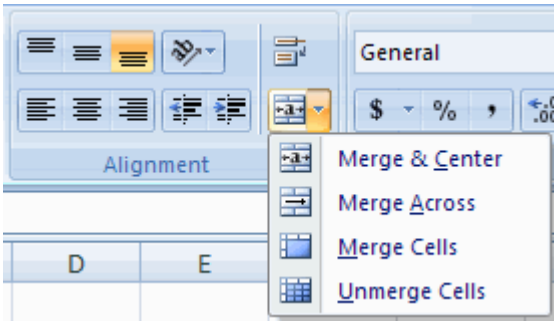
- Select the row or column you wish to hide or unhide
- Click the **Format** button on the **Cells** group of the **Home** tab
- Click **Hide & Unhide**



Merge Cells

To merge cells select the cells you want to merge and click the **Merge & Center** button on the **Alignment** group of the **Home** tab. The four choices for merging cells are:

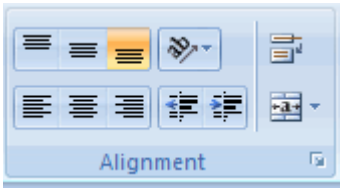
Merge & Center: Combines the cells and centers the contents in the new, larger cell
Merge Across: Combines the cells across columns without centering data
Merge Cells: Combines the cells in a range without centering
Unmerge Cells: Splits the cell that has been merged



Align Cell Contents

To align cell contents, click the cell or cells you want to align and click on the options within the **Alignment** group on the **Home** tab. There are several options for alignment of cell contents:

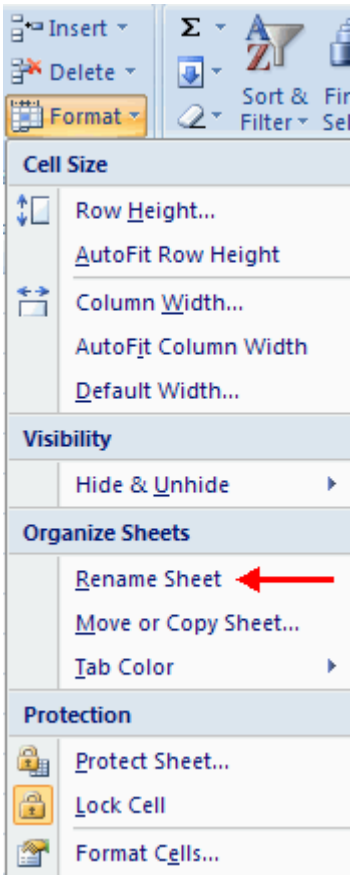
Top Align : Aligns text to the top of the cell
Middle Align : Aligns text between the top and bottom of the cell
Bottom Align : Aligns text to the bottom of the cell
Align Text Left : Aligns text to the left of the cell
Center : Centers the text from left to right in the cell
Align Text Right : Aligns text to the right of the cell
Decrease Indent : Decreases the indent between the left border and the text
Increase Indent : Increase the indent between the left border and the text
Orientation : Rotate the text diagonally or vertically



Format Worksheet Tab

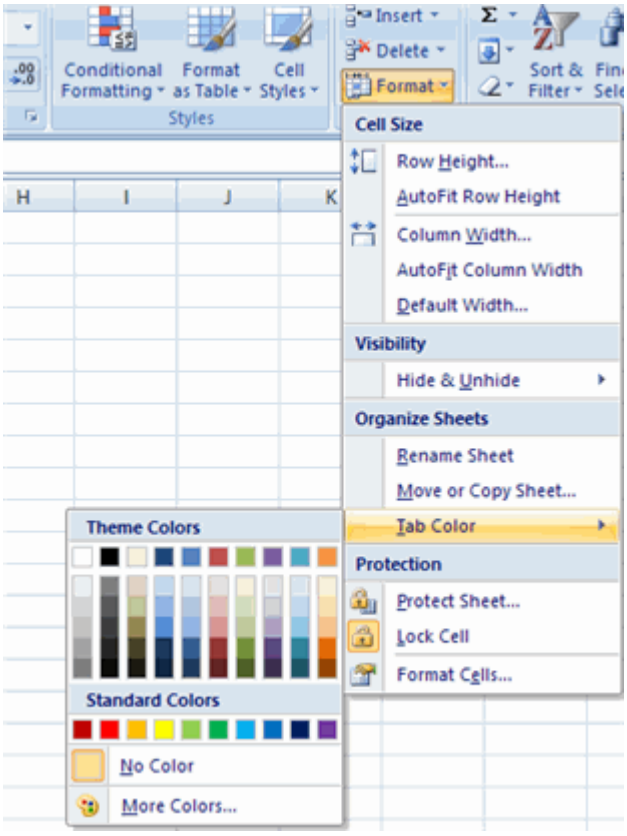
You can rename a worksheet or change the color of the tabs to meet your needs. To rename a worksheet:

- Open the sheet to be renamed
- Click the **Format** button on the **Home** tab
- Click **Rename** sheet
- Type in a new name
- Press **Enter**



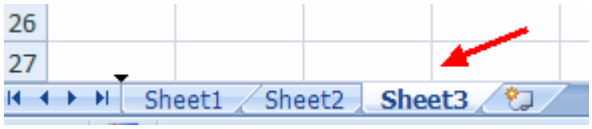
To change the color of a worksheet tab:

- Open the sheet to be renamed
- Click the **Format** button on the **Home** tab
- Click **Tab** Color
- Click the color



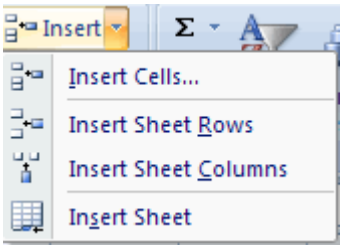
Reposition Worksheets in a Workbook

To move worksheets in a workbook:



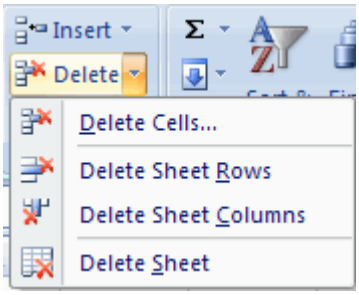
- Open the workbook that contains the sheets you want to rearrange
- **Click and hold** the worksheet tab that will be moved until an arrow appears in the left corner of the sheet
- **Drag** the worksheet to the desired location

Insert and Delete Worksheets



To insert a worksheet

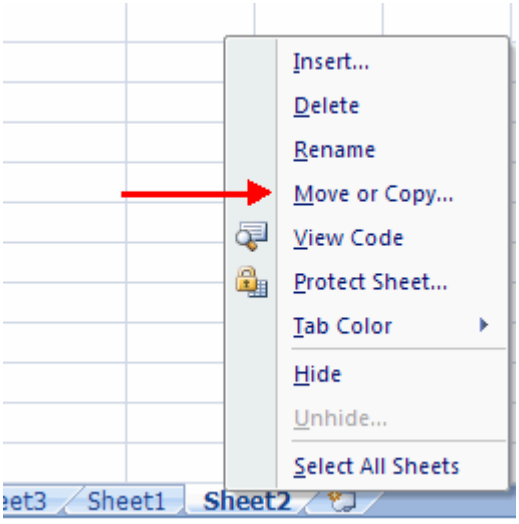
- Open the workbook
- Click the **Insert** button on the **Cells** group of the **Home** tab
- Click **Insert Sheet**



To delete a worksheet

- Open the workbook
- Click the **Delete** button on the **Cells** group of the **Home** tab
- Click **Delete Sheet**

Copy and Paste Worksheets:



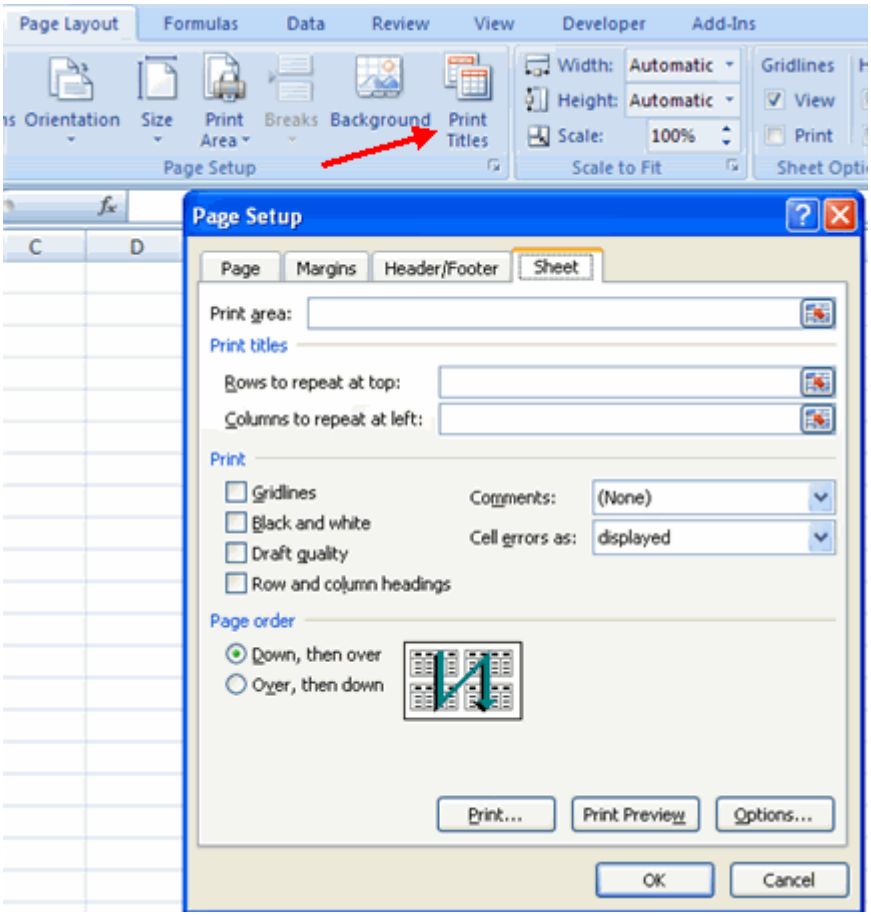
To copy and paste a worksheet:

- Click the tab of the worksheet to be copied
- **Right click** and choose **Move** or **Copy**
- Choose the desired position of the sheet
- Click the check box next to **Create a Copy**
- Click **OK**

Set Print Titles

The print titles allows you to repeat the column and row headings at the beginning of each new page to make reading a multiple page sheet easier to read when printed. To Print Titles:

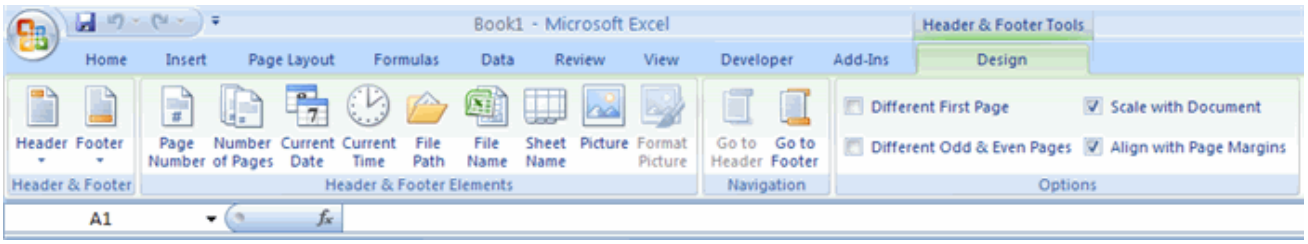
- Click the **Page Layout** tab on the Ribbon
- Click the **Print Titles** button
- In the **Print Titles** section, click the box to select the rows/columns to be repeated
- Select the row or column
- Click the **Select Row/Column Button**
- Click OK



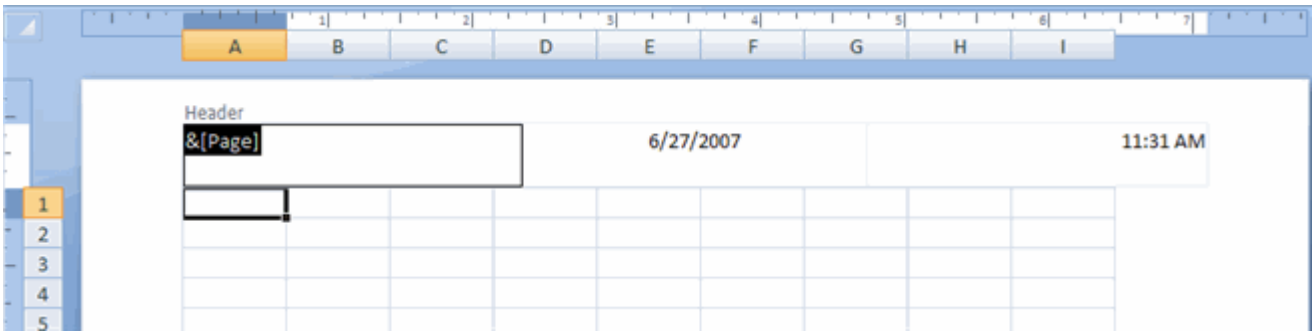
Create a Header or Footer

To create a header or footer:

- Click the **Header & Footer** button on the **Insert** tab
- This will display the **Header & Footer Design Tools Tab**
- To switch between the Header and Footer, click the **Go to Header** or **Go to Footer** button



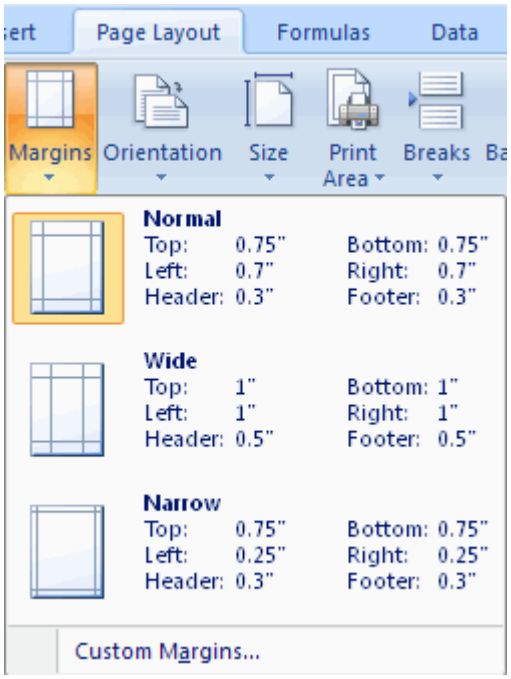
- To insert text, enter the text in the header or footer
- To enter preprogrammed data such as page numbers, date, time, file name or sheet name, click the appropriate button
- To change the location of data, click the desired cell



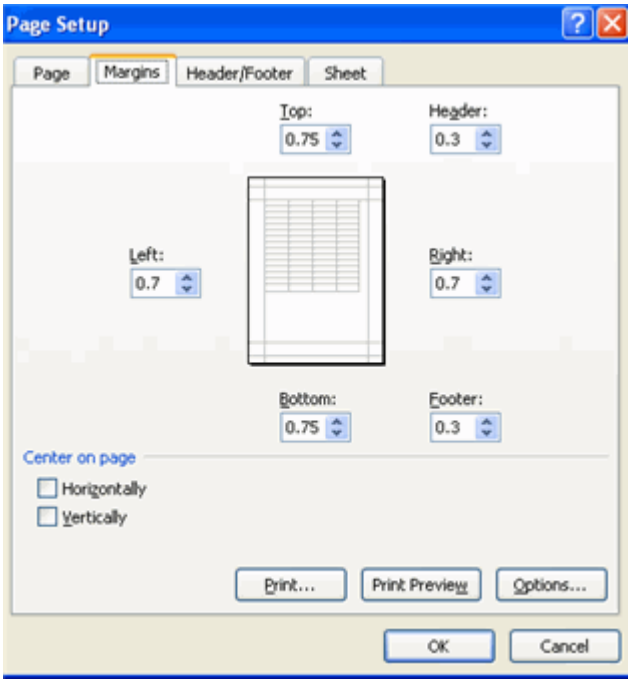
Set Page Margins

To set the page margins:

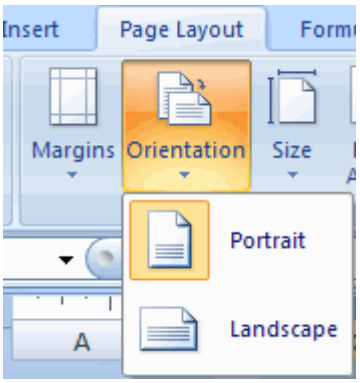
1. Click the **Margins** button on the **Page Layout** tab
2. Select one of the give choices, or



- Click **Custom Margins**
- Complete the boxes to set margins
- Click **Ok**



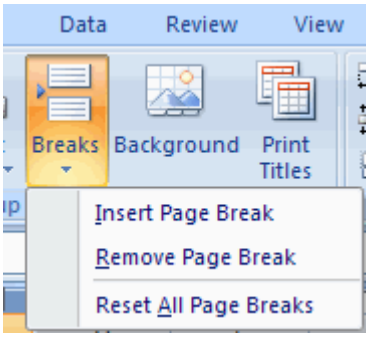
Change Page Orientation



To change the page orientation from portrait to landscape:

- Click the **Orientation** button on the **Page Layout** tab
- Choose **Portrait** or **Landscape**

Set Page Breaks



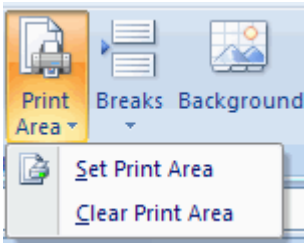
You can manually set up page breaks in a worksheet for ease of reading when the sheet is printed. To set a page break:

- Click the **Breaks** button on the **Page Layout** tab
- Click **Insert Page Break**

Print a Range

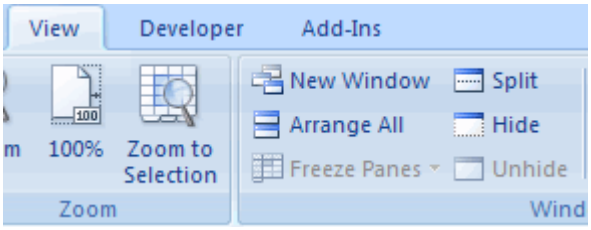
There may be times when you only want to print a portion of a worksheet. This is easily done through the Print Range . To print a range:

- Select the area to be printed
- Click the **Print Area** button on the **Page Layout** tab
- Click **Select Print Area**



Split a Worksheet

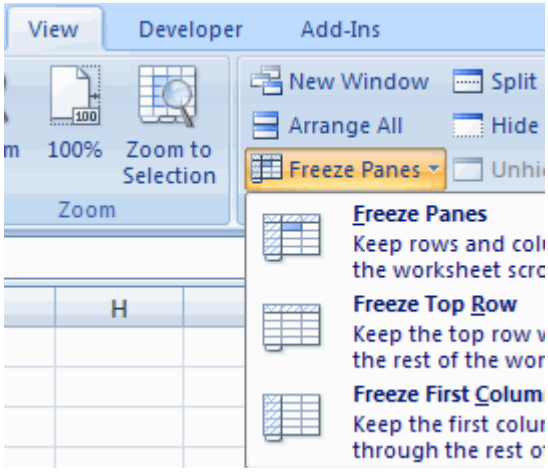
You can split a worksheet into multiple resizable panes for easier viewing of parts of a worksheet. To split a worksheet:



- Select any cell in center of the worksheet you want to split
- Click the **Split** button on the **View** tab
- Notice the split in the screen, you can manipulate each part separately

Freeze Rows and Columns

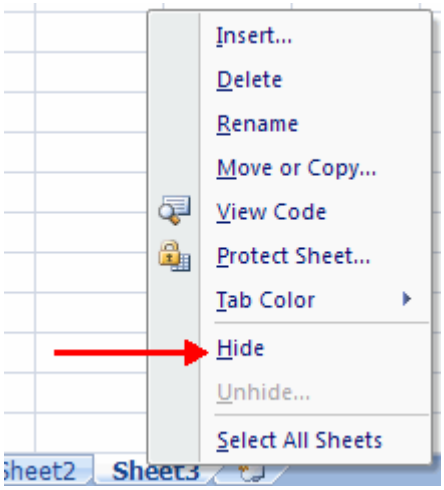
You can select a particular portion of a worksheet to stay static while you work on other parts of the sheet. This is accomplished through the Freeze Rows and Columns . To Freeze a row or column:



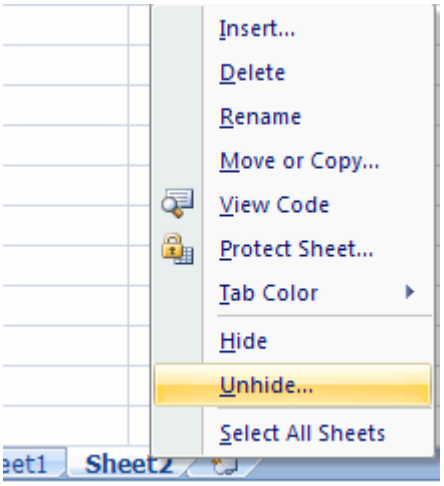
- Click the **Freeze Panes** button on the **View** tab
- Either select a section to be frozen or click the defaults of top row or left column
- To unfreeze, click the **Freeze Panes** button
- Click **Unfreeze**

Hide Worksheets

To hide a worksheet:



- Select the tab of the sheet you wish to hide
- **Right-click** on the tab
- Click **Hide**



To unhide a worksheet:

- **Right-click** on any worksheet tab
- Click **Unhide**
- Choose the worksheet to unhide

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WORKSHEET FUNCTIONS

Worksheet functions are categorized by their functionality. In Excel there are various categories of functions. These are:

1. Text functions
2. Date and time functions
3. Math and trigonometry functions
4. Logical functions
5. Financial functions
6. Lookup and reference functions
7. Statistical functions

Text functions

Function	Description
CHAR	Returns the character specified by the code number
CODE	Returns a numeric code for the first character in a text string
CONCATENATE	Joins several text items into one text item
LEFT	Returns the leftmost characters from a text value
LEN	Returns the number of characters in a text string
LOWER	Converts text to lowercase
MID	Returns a specific number of characters from a text string starting at the position you specify
PROPER	Capitalizes the first letter in each word of a text value
RIGHT	Returns the rightmost characters from a text value
TEXT	Formats a number and converts it to text
TRIM	Removes spaces from text
UPPER	Converts text to uppercase

Date and time functions

Function	Description
DATE	Returns the serial number of a particular date
DAY	Converts a serial number to a day of the month
DAYS360	Calculates the number of days between two dates based on a 360-day year
HOUR	Converts a serial number to an hour
MINUTE	Converts a serial number to a minute
MONTH	Converts a serial number to a month
NOW	Returns the serial number of the current date and time
SECOND	Converts a serial number to a second
TIME	Returns the serial number of a particular time
TODAY	Returns the serial number of today's date
YEAR	Converts a serial number to a year

Math and trigonometry functions

Functions	Description
ABS	Returns the absolute value of a number
CEILING	Rounds a number to the nearest integer or to the nearest multiple of significance
FACT	Returns the factorial of a number
FLOOR	Rounds a number down, toward zero
GCD	Returns the greatest common divisor
INT	Rounds a number down to the nearest integer
LCM	Returns the least common multiple
MOD	Returns the remainder from division
PI	Returns the value of pi
POWER	Returns the result of a number raised to a power
PRODUCT	Multiplies its arguments
ROMAN	Converts an arabic numeral to roman, as text
ROUND	Rounds a number to a specified number of digits
ROUNDDOWN	Rounds a number down, toward zero
ROUNDUP	Rounds a number up, away from zero
SQRT	Returns a positive square root
SUM	Adds its arguments
SUMIF	Adds the cells specified by a given criteria
SUMIFS	Adds the cells in a range that meet multiple criteria

Logical functions

Function	Description
AND	Returns TRUE if all of its arguments are TRUE
OR	Returns TRUE if any argument is TRUE
NOT	Reverses the logic of its argument
IF	Specifies a logical test to perform
IFERROR	Returns a value you specify if a formula evaluates to an error; otherwise, returns the result of the formula

Financial functions

Function	Description
FV function	Returns the future value of an investment
PMT function	Returns the periodic payment for an annuity
PPMT function	Returns the payment on the principal for an investment for a given period

Lookup and reference functions

Function	Description
HLOOKUP	Looks in the top row of an array and returns the value of the indicated cell
LOOKUP	Looks up values in a vector or array
VLOOKUP	Looks in the first column of an array and moves across the row to return the value of a cell

Statistical functions

Function	Description
AVERAGE	Returns the average of its arguments
AVERAGEIF	Returns the average (arithmetic mean) of all the cells in a range that meet a given criteria
AVERAGEIFS	Returns the average (arithmetic mean) of all cells that meet multiple criteria
COUNT	Counts how many numbers are in the list of arguments
COUNTIF	Counts the number of cells within a range that meet the given criteria
COUNTIFS	Counts the number of cells within a range that meet multiple criteria
MAX	Returns the maximum value in a list of arguments
MEDIAN	Returns the median of the given numbers
MIN	Returns the minimum value in a list of arguments
MODE	Returns a vertical array of the most frequently occurring, or repetitive values in an array or range of data
STDEV	The standard deviation is a measure of how widely values are dispersed from the average value (the mean).

(1) CHAR function

Description: Returns the character specified by the code number.
Syntax: =CHAR(ASCII Code)
Example:

	A	B
1	**Code**	**Character**
2	65	=CHAR(A2)
3	97	=CHAR(A3)
4	48	=CHAR(A4)
5	57	=CHAR(A5)
6	33	=CHAR(A6)
7		

Result:

	A	B
1	**Code**	**Character**
2	65	A
3	97	a
4	48	0
5	57	9
6	33	!
7		

(2) CODE function

Description: Returns a numeric code for the first character in a text string.
Syntax: =CODE(ASCII Character)
Example:

	A	B
1	**Character**	**Code**
2	A	=CODE(A2)
3	a	=CODE(A3)
4	0	=CODE(A4)
5	9	=CODE(A5)
6	!	=CODE(A6)

Result:

	A	B
1	**Character**	**Code**
2	A	65
3	a	97
4	0	48
5	9	57
6	!	33

(3) CONCATENATE function

Description: Joins several text items into one text item.
Syntax: =CONCATENATE(Text1,Text2,……)
Example:

	A	B	C
1	**Data1**	**Data2**	**Formula**
2	India	New Delhi	=CONCATENATE("Capital of ",A2," is ",B2)
3	Andrew	Strauss	=CONCATENATE(A3," ",B3)
4	Manmohan	Singh	=CONCATENATE("Shri ",A4," ",B4)
5			

Result:

	A	B	C
1	**Data1**	**Data2**	**Formula**
2	India	New Delhi	Capital of India is New Delhi
3	Andrew	Strauss	Andrew Strauss
4	Manmohan	Singh	Shri Manmohan Singh
5			

(4) LEFT function

Description: Returns the leftmost characters from a text value.

Syntax: =LEFT(text, num_chars)

Example:

	A	B
1	**Data**	**Formula**
2	NEWYORK	=LEFT(A2,3)
3	INDIA	=LEFT(A3,3)
4	AUSTRALIA	=LEFT(A4,4)
5	AFGANISTAN	=LEFT(A5,5)

Result:

	A	B
1	**Data**	**Formula**
2	NEWYORK	NEW
3	INDIA	IND
4	AUSTRALIA	AUST
5	AFGANISTAN	AFGAN

(5) LEN function

Description: Returns the number of characters in a text string.

Syntax: =LEN(Text)

Example:

	A	B
1	**Data**	**Formula**
2	NEWYORK	=LEN(A2)
3	INDIA	=LEN(A3)
4	AUSTRALIA	=LEN(A4)
5	AFGANISTAN	=LEN(A5)

Result:

	A	B
1	**Data**	**Formula**
2	NEWYORK	7
3	INDIA	5
4	AUSTRALIA	9
5	AFGANISTAN	10

(6) LOWER function

Description: Converts text to lowercase.

Syntax: =LOWER(text)

Example:

	A	B
1	**Data**	**Formula**
2	NEWYORK	=LOWER(A2)
3	INDIA	=LOWER(A3)
4	AUSTRALIA	=LOWER(A4)
5	AFGANISTAN	=LOWER(A5)
6	NEW DELHI	=LOWER(A6)
7	South africa	=LOWER(A7)
8	sri LANKA	=LOWER(A8)

Result:

	A	B
1	**Data**	**Formula**
2	NEWYORK	newyork
3	INDIA	india
4	AUSTRALIA	australia
5	AFGANISTAN	afganistan
6	NEW DELHI	new delhi
7	South africa	south africa
8	sri LANKA	sri lanka

(7) MID function

Description: Returns a specific number of characters from a text string starting at the position you specify.

Syntax: =MID(Text, Statr_num, Num_chars)

Example:

	A	B
1	**Data**	**Formula**
2	Microsoft Office Word	=MID(A2,11,6)
3	Microsoft Office Excel	=MID(A3,6,4)
4	Microsoft Office PowerPoint	=MID(A4,18,5)

Result:

	A	B
1	**Data**	**Formula**
2	Microsoft Office Word	Office
3	Microsoft Office Excel	soft
4	Microsoft Office PowerPoint	Power

(8) PROPER function

Description: Capitalizes the first letter in each word of a text value.
Syntax: =PROPER(Text)
Example:

	A	B
1	**Data**	**Formula**
2	NEWYORK	=PROPER(A2)
3	INDIA	=PROPER(A3)
4	NEW DELHI	=PROPER(A4)
5	South africa	=PROPER(A5)
6	sri LANKA	=PROPER(A6)

Result:

	A	B
1	**Data**	**Formula**
2	NEWYORK	Newyork
3	INDIA	India
4	NEW DELHI	New Delhi
5	South africa	South Africa
6	sri LANKA	Sri Lanka

(9) RIGHT function

Description: Returns the rightmost characters from a text value.
Syntax: =RIGHT(text, num_chars)
Example:

	A	B
1	**Data**	**Formula**
2	Microsoft Office Word	=RIGHT(A2,4)
3	Microsoft Office Excel	=RIGHT(A3,5)
4	Microsoft Office PowerPoint	=RIGHT(A4,10)

Result:

	A	B
1	**Data**	**Formula**
2	Microsoft Office Word	Word
3	Microsoft Office Excel	Excel
4	Microsoft Office PowerPoint	PowerPoint

(10) TEXT function

Description: Formats a number and converts it to text.
Syntax: =TEXT(Value,Format_text)
Example:

	A	B
1	**Data**	**Formula**
2	23.5	=TEXT(A2,"$0.00")
3	1234.59	=TEXT(A3,"####.#")
4	8.9	=TEXT(A4,"##.000")
5	5.25	=TEXT(A5,"# ???/???")
6	5.5	=TEXT(A6,"# ???/???")
7	5.75	=TEXT(A7,"# ???/???")
8	12000	=TEXT(A8,"##,###")
9	40500	=TEXT(A9,"dd-mm-yyyy")
10	40500.24	=TEXT(A10,"dd-mm-yyyy hh:mm:ss")

Result:

	A	B
1	**Data**	**Formula**
2	23.5	$23.50
3	1234.59	1234.6
4	8.9	8.900
5	5.25	5 1/4
6	5.5	5 1/2
7	5.75	5 3/4
8	12000	12,000
9	40500	18-11-2010
10	40500.24	18-11-2010 05:45:36

(11) TRIM function

Description: Removes leading and trailing spaces from text.
Syntax: =TRIM(text)
Example:

	A	B	C	D
1	**Data**	**Length Before Trimming**	**Formula**	**Length After Trimming**
2	Microsoft Office	=LEN(A2)	=TRIM(A2)	=LEN(C2)
3	Microsoft Office	=LEN(A3)	=TRIM(A3)	=LEN(C3)
4	Microsoft Office	=LEN(A4)	=TRIM(A4)	=LEN(C4)

Result:

	A	B	C	D
1	**Data**	**Length Before Trimming**	**Formula**	**Length After Trimming**
2	Microsoft Office	25	Microsoft Office	16
3	Microsoft Office	21	Microsoft Office	16
4	Microsoft Office	22	Microsoft Office	16

(12) UPPER function

Description: Converts text to uppercase.
Syntax: =UPPER(text)
Example:

	A	B
1	**Data**	**Formula**
2	NEWYORK	=UPPER(A2)
3	INDIA	=UPPER(A3)
4	NEW DELHI	=UPPER(A4)
5	South africa	=UPPER(A5)
6	sri LANKA	=UPPER(A6)

Result:

	A	B
1	**Data**	**Formula**
2	NEWYORK	NEWYORK
3	INDIA	INDIA
4	NEW DELHI	NEW DELHI
5	South africa	SOUTH AFRICA
6	sri LANKA	SRI LANKA

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DATE AND TIME FUNCTIONS

(1) DATE function

Description: Returns the serial number of a particular date.
Syntax: =DATE(year,month,day)
Example:

	A	B	C	D
1	**Year**	**Month**	**Day**	**Date**
2	1989	4	23	=DATE(A2,B2,C2)
3	1990	6	6	=DATE(A3,B3,C3)
4	2000	8	9	=DATE(A4,B4,C4)
5	2010	10	15	=DATE(A5,B5,C5)
6	2011	12	21	=DATE(A6,B6,C6)

Result:

	A	B	C	D
1	**Year**	**Month**	**Day**	**Date**
2	1989	4	23	23/04/1989
3	1990	6	6	06/06/1990
4	2000	8	9	09/08/2000
5	2010	10	15	15/10/2010
6	2011	12	21	21/12/2011

(2) DAY function

Description: Converts a serial number to a day of the month.
Syntax: =DAY(date_srno)
Example:

	A	B
1	**Date**	**Day**
2	14/01/2010	=DAY(A2)
3	25/02/2011	=DAY(A3)
4	03/04/2009	=DAY(A4)

Result:

	A	B	C
1	**Date**	**Day**	
2	14/01/2010	14	
3	25/02/2011	25	
4	03/04/2009	3	

(3) DAYS360 function

Description: Calculates the number of days between two dates based on a 360-day year.
Syntax: =DAYS360(start_date ,end_date)
Example:

	A	B	C
1	**Start Date**	**End Date**	**Total Days**
2	01/01/2011	31/01/2011	=DAYS360(A2,B2)
3	01/04/2011	31/08/2011	=DAYS360(A3,B3)
4	15/09/2011	30/09/2011	=DAYS360(A4,B4)

Result:

	A	B	C
1	**Start Date**	**End Date**	**Total Days**
2	01/01/2011	31/01/2011	30
3	01/04/2011	31/08/2011	150
4	15/09/2011	30/09/2011	15

(4) HOUR function

Description: Converts a serial number to an hour.
Syntax: =HOUR(serial_no)
Example:

	A	B
1	**Time**	**Hour**
2	03:30:30 AM	=HOUR(A2)
3	03:27:30 PM	=HOUR(A3)
4	16:30:00	=HOUR(A4)

Result:

	A	B
1	**Time**	**Hour**
2	03:30:30 AM	3
3	03:27:30 PM	15
4	16:30:00	16

(5) MINUTE function

Description: Converts a serial number to a minute.
Syntax: =MINUTE(serial_no)
Example:

	A	B
1	**Time**	**Minute**
2	03:30:30 AM	=MINUTE(A2)
3	03:27:30 PM	=MINUTE(A3)
4	16:40:00	=MINUTE(A4)

Result:

	A	B
1	**Time**	**Minute**
2	03:30:30 AM	30
3	03:27:30 PM	27
4	16:40:00	40

(6) MONTH function

Description: Converts a serial number to a month.
Syntax: =MONTH(serial_no)
Example:

	A	B
1	**Date**	**Month**
2	13/08/1986	=MONTH(A2)
3	15/05/1990	=MONTH(A3)
4	01/10/2011	=MONTH(A4)

Result:

	A	B
1	**Date**	**Month**
2	13/08/1986	8
3	15/05/1990	5
4	01/10/2011	10

(7) NOW function

Description: Returns the serial number of the current date and time.
Syntax: =NOW()
Example:

	A
1	**Date**
2	=NOW()

Result:

	A
1	**Date**
2	07/10/2011 13:44

(8) SECOND function

Description: Converts a serial number to a second.
Syntax: =SECOND(serial_no)
Example:

	A	B
1	**Time**	**Second**
2	03:30:20 AM	=SECOND(A2)
3	03:27:11 PM	=SECOND(A3)
4	16:40:00	=SECOND(A4)

Result:

	A	B
1	**Time**	**Second**
2	03:30:20 AM	20
3	03:27:11 PM	11
4	16:40:00	0

(9) TIME function

Description: Returns the serial number of a particular time.
Syntax: =TIME(hour, minute, second)
Example:

	A	B	C	D
1	**Hour**	**Minute**	**Second**	**Time**
2	16	30	11	=TIME(A2,B2,C2)
3	4	25	44	=TIME(A3,B3,C3)
4	20	46	55	=TIME(A4,B4,C4)
5	10	55	50	=TIME(A5,B5,C5)

Result:

	A	B	C	D
1	**Hour**	**Minute**	**Second**	**Time**
2	16	30	11	4:30 PM
3	4	25	44	4:25 AM
4	20	46	55	8:46 PM
5	10	55	50	10:55 AM

(10) TODAY function

Description: Returns the serial number of today's date.
Syntax: =TODAY()
Example:

	A
1	**Date**
2	=TODAY()
3	=NOW()-TODAY()

Result:

	A
1	**Date**
2	07/10/2011
3	01:51:01 PM

(11) YEAR function

Description: Converts a serial number to a year.
Syntax: =YEAR(serial_no)
Example:

	A	B
1	**Date**	**Month**
2	13/08/1986	=YEAR(A2)
3	15/05/1990	=YEAR(A3)
4	01/10/2011	=YEAR(A4)

Result:

	A	B
1	**Date**	**Month**
2	13/08/1986	1986
3	15/05/1990	1990
4	01/10/2011	2011

(1) ABS function

Description: Returns the absolute value of a number.

Syntax: =ABS(number)

Example:

	A	B
1	**Number**	**Formula**
2	-10	=ABS(A2)
3	20	=ABS(A3)
4	-3.6	=ABS(A4)

Result:

	A	B
1	**Number**	**Formula**
2	-10	10
3	20	20
4	-3.6	3.6

(2) CEILING function

Description: Rounds a number to the nearest integer or to the nearest multiple of significance.

Syntax: =CEILING(number, significance)

Example:

	A	B
1	**Number**	**Formula**
2	2.5	=CEILING(A2,1)
3	-2.5	=CEILING(A3,-2)
4	-2.5	=CEILING(A4,2)
5	1.5	=CEILING(A5,0.1)
6	0.234	=CEILING(A6,0.01)

Result:

	A	B
1	**Number**	**Formula**
2	2.5	3
3	-2.5	-4
4	-2.5	-2
5	1.5	1.5
6	0.234	0.24

(3) FACT function

Description: Returns the factorial of a number.

Syntax: =FACT(number)

Example:

	A	B
1	**Number**	**Formula**
2	5	=FACT(A2)
3	1	=FACT(A3)
4	-1	=FACT(A4)
5	6	=FACT(A5)
6	0	=FACT(A6)

Result:

	A	B
1	**Number**	**Formula**
2	5	120
3	1	1
4	-1	#NUM!
5	6	720
6	0	1

(4) FLOOR function

Description: Rounds a number down, toward zero.

Syntax: =FLOOR(number, significance)

Example:

	A	B
1	**Number**	**Formula**
2	2.5	=FLOOR(A2,1)
3	-2.5	=FLOOR(A3,-2)
4	-2.5	=FLOOR(A4,2)
5	1.5	=FLOOR(A5,0.1)
6	0.234	=FLOOR(A6,0.01)

Result:

	A	B
1	**Number**	**Formula**
2	2.5	2
3	-2.5	-2
4	-2.5	-4
5	1.5	1.5
6	0.234	0.23

(5) GCD function

Description: Returns the greatest common divisor.

Syntax: =GCD(number1, number2, …….)

Example:

	A	B
1	**Formula**	**Description (Result)**
2	=GCD(5, 2)	Greatest common divisor of 5 and 2 (1)
3	=GCD(24, 36)	Greatest common divisor of 24 and 36 (12)
4	=GCD(7, 1)	Greatest common divisor of 7 and 1 (1)
5	=GCD(5, 0)	Greatest common divisor of 5 and 0 (5)

Result:

	A	B
1	**Formula**	**Description (Result)**
2	1	Greatest common divisor of 5 and 2 (1)
3	12	Greatest common divisor of 24 and 36 (12)
4	1	Greatest common divisor of 7 and 1 (1)
5	5	Greatest common divisor of 5 and 0 (5)

(6) INT function

Description: Rounds a number down to the nearest integer.
Syntax: =INT(number)
Example:

	A	B
1	**Data**	
2	19.5	
3	**Formula**	**Description (Result)**
4	=INT(8.9)	Rounds 8.9 down (8)
5	=INT(-8.9)	Rounds -8.9 down (-9)
6	=A2-INT(A2)	Returns the decimal part of a positive real number in cell A2 (0.5)

Result:

	A	B
1	**Data**	
2	19.5	
3	**Formula**	**Description (Result)**
4	8	Rounds 8.9 down (8)
5	-9	Rounds -8.9 down (-9)
6	0.5	Returns the decimal part of a positive real number in cell A2 (0.5)

(7) LCM function

Description: Returns the least common multiple.
Syntax: =LCM(number1, number2, ……)
Example:

	A	B
1	**Formula**	**Description (Result)**
2	=LCM(5, 2)	Least common multiple of 5 and 2 (10)
3	=LCM(24, 36)	Least common multiple of 24 and 36 (72)

Result:

	A	B
1	**Formula**	**Description (Result)**
2	10	Least common multiple of 5 and 2 (10)
3	72	Least common multiple of 24 and 36 (72)

(8) MOD function

Description: Returns the remainder from division.
Syntax: =MOD(number, divisor)
Example:

	A	B
1	**Formula**	**Description (Result)**
2	=MOD(3, 2)	Remainder of 3/2 (1)
3	=MOD(-3, 2)	Remainder of -3/2. The sign is the same as divisor (1)
4	=MOD(3, -2)	Remainder of 3/-2. The sign is the same as divisor (-1)
5	=MOD(-3, -2)	Remainder of -3/-2. The sign is the same as divisor (-1)

Result:

	A	B
1	**Formula**	**Description (Result)**
2	1	Remainder of 3/2 (1)
3	1	Remainder of -3/2. The sign is the same as divisor (1)
4	-1	Remainder of 3/-2. The sign is the same as divisor (-1)
5	-1	Remainder of -3/-2. The sign is the same as divisor (-1)

(9) PI function

Description: Returns the value of pi.
Syntax: =PI()
Example:

	A	B
1	**Radius**	
2	3	
3	**Formula**	**Description (Result)**
4	=PI()	Pi (3.14159265358979)
5	=PI()/2	Pi/2 (1.570796327)
6	=PI()*(A2^2)	Area of a circle, with the radius above (28.27433388)

Result:

	A	B
1	**Radius**	
2	3	
3	**Formula**	**Description (Result)**
4	3.141592654	Pi (3.14159265358979)
5	1.570796327	Pi/2 (1.570796327)
6	28.27433388	Area of a circle, with the radius above (28.27433388)

(10) POWER function

Description: Returns the result of a number raised to a power.
Syntax: =POWER(number, power)
Example:

	A	B
1	**Formula**	**Description (Result)**
2	=POWER(5,2)	5 squared (25)
3	=POWER(98.6,3.2)	98.6 raised to the power of 3.2 (2401077)
4	=POWER(4,5/4)	4 raised to the power of 5/4 (5.656854)

Result:

	A	B
1	**Formula**	**Description (Result)**
2	25	5 squared (25)
3	2401077.222	98.6 raised to the power of 3.2 (2401077)
4	5.656854249	4 raised to the power of 5/4 (5.656854)

(11) PRODUCT function

Description: Multiplies its arguments.
Syntax: =PRODUCT(number1, number2, ……..)
Example:

	A	B
1	**Data**	
2	5	
3	15	
4	30	
5	**Formula**	**Description**
6	=PRODUCT(A2:A4)	Multiplies the numbers in cells A2 through A4.
7	=PRODUCT(A2:A4, 2)	Multiplies the numbers in cells A2 through A4, and then multiplies that result by 2.
8	=A2*A3*A4	Multiplies the numbers in cells A2 through A4 by using mathematical operators instead of the **PRODUCT** function.

Result:

	A	B
1	**Data**	
2	5	
3	15	
4	30	
5	**Formula**	**Description**
6	2250	Multiplies the numbers in cells A2 through A4.
7	4500	Multiplies the numbers in cells A2 through A4, and then multiplies that result by 2.
8	2250	Multiplies the numbers in cells A2 through A4 by using mathematical operators instead of the **PRODUCT** function.

(12) ROMAN function

Description: Converts an arabic numeral to roman, as text.

Syntax: =ROMAN(number)
Example: Result:

	A	B
1	**Number**	**Roman**
2	1	=ROMAN(A2)
3	10	=ROMAN(A3)
4	25	=ROMAN(A4)
5	50	=ROMAN(A5)
6	100	=ROMAN(A6)
7	500	=ROMAN(A7)

	A	B
1	**Number**	**Roman**
2	1	I
3	10	X
4	25	XXV
5	50	L
6	100	C
7	500	D

(13) ROUND function

Description: Rounds a number to a specified number of digits.
Syntax: =ROUND(number, num_digits)
Example:

	A	B
1	**Formula**	**Description**
2	=ROUND(2.15, 1)	Rounds 2.15 to one decimal place
3	=ROUND(2.149, 1)	Rounds 2.149 to one decimal place
4	=ROUND(-1.475, 2)	Rounds -1.475 to two decimal places
5	=ROUND(21.5, -1)	Rounds 21.5 to one decimal place to the left of the decimal point

Result:

	A	B
1	**Formula**	**Description**
2	2.2	Rounds 2.15 to one decimal place
3	2.1	Rounds 2.149 to one decimal place
4	-1.48	Rounds -1.475 to two decimal places
5	20	Rounds 21.5 to one decimal place to the left of the decimal point

(14) ROUNDDOWN function

Description: Rounds a number down, toward zero
Syntax: =ROUNDDOWN(number, num_digits)
Example:

	A	B
1	**Formula**	**Description (Result)**
2	=ROUNDDOWN(3.2, 0)	Rounds 3.2 down to zero decimal places (3)
3	=ROUNDDOWN(76.9,0)	Rounds 76.9 down to zero decimal places (76)
4	=ROUNDDOWN(3.14159, 3)	Rounds 3.14159 down to three decimal places (3.141)
5	=ROUNDDOWN(-3.14159, 1)	Rounds -3.14159 down to one decimal place (-3.1)
6	=ROUNDDOWN(31415.92654, -2)	Rounds 31415.92654 down to 2 decimal places to the left of the decimal (31400)

Result:

	A	B
1	**Formula**	**Description (Result)**
2	3	Rounds 3.2 down to zero decimal places (3)
3	76	Rounds 76.9 down to zero decimal places (76)
4	3.141	Rounds 3.14159 down to three decimal places (3.141)
5	-3.1	Rounds -3.14159 down to one decimal place (-3.1)
6	31400	Rounds 31415.92654 down to 2 decimal places to the left of the decimal (31400)

(15) ROUNDUP function

Description: Rounds a number up, away from zero.
Syntax: =ROUNDUP(number, num_digits)
Example:

	A	B
1	**Formula**	**Description (Result)**
2	=ROUNDUP(3.2,0)	Rounds 3.2 up to zero decimal places (4)
3	=ROUNDUP(76.9,0)	Rounds 76.9 up to zero decimal places (77)
4	=ROUNDUP(3.14159, 3)	Rounds 3.14159 up to three decimal places (3.142)
5	=ROUNDUP(-3.14159, 1)	Rounds -3.14159 up to one decimal place (-3.2)
6	=ROUNDUP(31415.92654, -2)	Rounds 31415.92654 up to 2 decimal places to the left of the decimal (31500)

Result:

	A	B
1	**Formula**	**Description (Result)**
2	4	Rounds 3.2 up to zero decimal places (4)
3	77	Rounds 76.9 up to zero decimal places (77)
4	3.142	Rounds 3.14159 up to three decimal places (3.142)
5	-3.2	Rounds -3.14159 up to one decimal place (-3.2)
6	31500	Rounds 31415.92654 up to 2 decimal places to the left of the decimal (31500)

(16) SQRT function

Description: Returns a positive square root.
Syntax: =SQRT(number)
Example: Results:

	A	B
1	**Number**	**Formula**
2	16	=SQRT(A2)
3	20	=SQRT(A3)
4	100	=SQRT(A4)
5	-36	=SQRT(A5)
6	-81	=SQRT(A6)

	A	B
1	**Number**	**Formula**
2	16	4
3	20	4.472135955
4	100	10
5	-36	#NUM!
6	-81	#NUM!

(17) SUM function

Description: Adds its arguments.

Syntax: =SUM(number1, number2, ……..) OR SUM(range)
Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9			
10		GRAND TOTAL	=SUM(C2:C8)

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9			
10		GRAND TOTAL	422000

(18) SUMIF function

Description: Adds the cells specified by a given criteria.
Syntax: =SUMIF(range, criteria, [sumrange])
Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Grand Total	**=SUM(C2:C8)**
10		Total salary >50000	**=SUMIF(C2:C8,">50000")**
11		Total salary HR	**=SUMIF(A2:A8,"HR",C2:C8)**
12		Total Salary DGMs	**=SUMIF(B2:B8,"DGM",C2:C8)**

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Grand Total	**422000**
10		Total salary >50000	**332000**
11		Total salary HR	**240000**
12		Total Salary DGMs	**262000**

(19) SUMIFS function

Description: Adds the cells in a range that meet multiple criteria.

Syntax: =SUMIFS(sum_range, criteria_range1, criteria1, criteria_range2, criteria2,……)

Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Grand Total	**=SUM(C2:C8)**
10		Total Salary DGMs of FIN dept	**=SUMIFS(C2:C8,A2:A8,"FIN",B2:B8,"DGM")**
11		Total salary of DGMs of HR dept	**=SUMIFS(C2:C8,A2:A8,"HR",B2:B8,"DGM")**

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Grand Total	**422000**
10		Total Salary DGMs of FIN dept	**132000**
11		Total salary of DGMs of HR dept	**130000**

(1) AND function

Description: Returns TRUE if all of its arguments are TRUE.
Syntax: =AND(logical1, logical2, ……)
Example:

	A	B	C
1	**Attendance%**	**Marks%**	**Eligibility For Final Exam**
2	84	76	=AND(A2>=80,B2>=70)
3	64	80	=AND(A3>=80,B3>=70)
4	90	60	=AND(A4>=80,B4>=70)
5	82	72	=AND(A5>=80,B5>=70)
6	55	88	=AND(A6>=80,B6>=70)

Result:

	A	B	C
1	**Attendance%**	**Marks%**	**Eligibility For Final Exam**
2	84	76	TRUE
3	64	80	FALSE
4	90	60	FALSE
5	82	72	TRUE
6	55	88	FALSE

(2) OR function

Description: Returns TRUE if any argument is TRUE.
Syntax: =OR(logical1, logical2,……..)
Example:

	A	B	C
1	**Attendance%**	**Marks%**	**Eligibility For Final Exam**
2	84	76	=OR(A2>=80,B2>=70)
3	64	80	=OR(A3>=80,B3>=70)
4	90	60	=OR(A4>=80,B4>=70)
5	82	72	=OR(A5>=80,B5>=70)
6	55	50	=OR(A6>=80,B6>=70)

Result:

	A	B	C
1	**Attendance%**	**Marks%**	**Eligibility For Final Exam**
2	84	76	TRUE
3	64	80	TRUE
4	90	60	TRUE
5	82	72	TRUE
6	55	50	FALSE

(3) NOT function

Description: Reverses the logic of its argument.

Syntax: =NOT(logical)

Example:

	A	B
1	**Formula**	**Description (Result)**
2	=NOT(FALSE)	Reverses FALSE (TRUE)
3	=NOT(1+1=2)	Reverses an equation that evaluates to TRUE (FALSE)

Result:

	A	B
1	**Formula**	**Description (Result)**
2	TRUE	Reverses FALSE (TRUE)
3	FALSE	Reverses an equation that evaluates to TRUE (FALSE)

(4) IF function

Description: Specifies a logical test to perform.

Syntax: =IF(logical_test, value_if_true, value_if_false)

Example:

	A	B	C
1	**Percent**	**Result**	**Division**
2	45	=IF(A2>=40,"PASS","FAIL")	=IF(A2>=60,"FIRST",IF(A2>=50,"SECOND",IF(A2>=40,"THIRD","FAIL")))
3	69	=IF(A3>=40,"PASS","FAIL")	=IF(A3>=60,"FIRST",IF(A3>=50,"SECOND",IF(A3>=40,"THIRD","FAIL")))
4	76	=IF(A4>=40,"PASS","FAIL")	=IF(A4>=60,"FIRST",IF(A4>=50,"SECOND",IF(A4>=40,"THIRD","FAIL")))
5	54	=IF(A5>=40,"PASS","FAIL")	=IF(A5>=60,"FIRST",IF(A5>=50,"SECOND",IF(A5>=40,"THIRD","FAIL")))

Result:

	A	B	C
1	**Percent**	**Result**	**Division**
2	45	PASS	THIRD
3	69	PASS	FIRST
4	76	PASS	FIRST
5	54	PASS	SECOND

(5) IFERROR function

Description: Returns a value you specify if a formula evaluates to an error; otherwise, returns the result of the formula.

Syntax: =IFERROR(value, value_if_error)

Example:

	A	B	C
1	**Quota**	**Unit Sold**	**Formula**
2	210	35	=IFERROR(A2/B2,"Error in calculation")
3	55	0	=IFERROR(A3/B3,"Error in calculation")
4		23	=IFERROR(A4/B4,"Error in calculation")

Result:

	A	B	C
1	**Quota**	**Unit Sold**	**Formula**
2	210	35	6
3	55	0	Error in calculation
4		23	0

(1) FV function

Description: Returns the future value of an investment.
Syntax: =FV (rate, nper,-pmt, [pv], [type])
Where,

rate: Required. The interest rate per period.

nper: Required. The total number of payment periods in an annuity.

pmt: Required. The payment made each period,

pv: Optional. 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.

Type: Optional. The number 0 or 1 and indicates when payments are due. If type is omitted, it is assumed to be 0.

Example:

	A	B	C
1	Amount	1000	Per Month
2	Rate	0.08	Per Annum
3	Period	5	Years
4	FV	**=FV(B2/12,B3*12,-B1)**	

Result:

	A	B	C
1	Amount	1000	Per Month
2	Rate	8%	Per Annum
3	Period	5	Years
4	FV	**Rs.73,476.86**	

(2) PMT function

Description: Returns the periodic payment for an annuity.
Syntax: =PMT (rate, nper,-pmt, [pv], [type])
Example:

	A	B	C
1	Amount	50000	Per Month
2	Rate	0.12	Per Annum
3	Period	5	Years
4	PMT	**=PMT(B2/12,B3*12,-B1)**	

Result:

	A	B	C
1	Amount	50000	Per Month
2	Rate	12%	Per Annum
3	Period	5	Years
4	PMT	**Rs.1,112.22**	

(1) HLOOKUP function

Description: Looks in the top row of an array and returns the value of the indicated cell.
Syntax: =HLOOKUP(lookup_value, table_array, row_index_num, [range_lookup])
Example:

	A	B	C	D	E	F
1	**EmpID**	101	102	103	104	105
2	**EmpName**	M K DIXIT	D N KAK	G K DAS	R S SINGH	M JOHN
3	**Dept**	HR	FIN	CHP	MGR	C&I
4	**Salary**	40000	50000	80000	60000	55000
5						
6						
7	Enter EmpID	102				
8	EMP NAME	=HLOOKUP(B7,A1:F4,2,FALSE)				
9	DEPT	=HLOOKUP(B7,A1:F4,3,FALSE)				
10	SALARY	=HLOOKUP(B7,A1:F4,4,FALSE)				

Result:

	A	B	C	D	E	F
1	**EmpID**	101	102	103	104	105
2	**EmpName**	M K DIXIT	D N KAK	G K DAS	R S SINGH	M JOHN
3	**Dept**	HR	FIN	CHP	MGR	C&I
4	**Salary**	40000	50000	80000	60000	55000
5						
6						
7	Enter EmpID	102				
8	EMP NAME	D N KAK				
9	DEPT	FIN				
10	SALARY	50000				

(2) LOOKUP function

Description: Looks up values in a vector or array.
Syntax: =LOOKUP(lookup_value, lookup_vector, [result_vector])
Example:

	A	B
1	**Frequency**	**Color**
2	4.14	red
3	4.19	orange
4	5.17	yellow
5	5.77	green
6	6.39	blue
7	**Formula**	
8	=LOOKUP(4.19, A2:A6, B2:B6)	
9	=LOOKUP(5, A2:A6, B2:B6)	
10	=LOOKUP(7.66, A2:A6, B2:B6)	
11	=LOOKUP(0, A2:A6, B2:B6)	

Result:

	A	B
1	**Frequency**	**Color**
2	4.14	red
3	4.19	orange
4	5.17	yellow
5	5.77	green
6	6.39	blue
7	**Formula**	
8	orange	
9	orange	
10	blue	
11	#N/A	

(3) VLOOKUP function

Description: Looks in the first column of an array and moves across the row to return the value of a cell.
Syntax: =VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])
Example:

	A	B	C	D
1	**EmpID**	**EmpName**	**Dept**	**Salary**
2	101	M K DIXIT	HR	40000
3	102	D N KAK	FIN	50000
4	103	G K DAS	CHP	80000
5	104	R S SINGH	MGR	60000
6	105	M JOHN	C&I	55000
7				
8				
9	Enter EmpID	104		
10	EmpName	=VLOOKUP(B9,A1:D6,2,FALSE)		
11	Dept	=VLOOKUP(B9,A1:D6,3,FALSE)		
12	Salary	=VLOOKUP(B9,A1:D6,4,FALSE)		

Result:

	A	B	C	D
1	**EmpID**	**EmpName**	**Dept**	**Salary**
2	101	M K DIXIT	HR	40000
3	102	D N KAK	FIN	50000
4	103	G K DAS	CHP	80000
5	104	R S SINGH	MGR	60000
6	105	M JOHN	C&I	55000
7				
8				
9	Enter EmpID	104		
10	EmpName	R S SINGH		
11	Dept	MGR		
12	Salary	60000		

(1) AVERAGE function

Description: Returns the average of its arguments.

Syntax: =AVERAGE(number1, number2, ……..)

Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9			
10		Average Salary	**=AVERAGE(C2:C8)**

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9			
10		Average Salary	**60285.71429**

(2) AVERAGEIF function

Description: Returns the average (arithmetic mean) of all the cells in a range that meet a given criteria.

Syntax: =AVERAGEIF (range, criteria, average_range)

Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		HR Average Salary	**=AVERAGEIF(A2:A8,"HR",C2:C8)**
10		DGMs Average Salary	**=AVERAGEIF(B2:B8,"DGM",C2:C8)**

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		HR Average Salary	**60000**
10		DGMs Average Salary	**65500**

(3) AVERAGEIFS function

Description: Returns the average (arithmetic mean) of all cells that meet multiple criteria.
Syntax: =AVERAGEIFS(average_range, criteria_range1, criteria1, criteria_range2, criteria2, ……..)
Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Average Salary DGMs of HR dept	**=AVERAGEIFS(C2:C8,A2:A8,"HR",B2:B8,"DGM")**
10		Average Salary DGMs of FIN dept	**=AVERAGEIFS(C2:C8,A2:A8,"FIN",B2:B8,"DGM")**

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Average Salary DGMs of HR dept	**65000**
10		Average Salary DGMs of FIN dept	**66000**

(4) COUNT function

Description: Counts how many numbers are in the list of arguments.
Syntax: =COUNT(value1, value2, ……)
Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Total Employees	**=COUNT(C2:C8)**

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Total Employees	**7**

(5) COUNTIF function

Description: Counts the number of cells within a range that meet the given criteria.

Syntax: =COUNTIF(range, criteria)

Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Total HR employees	**=COUNTIF(A2:A8,"HR")**
10		Total MGR employees	**=COUNTIF(B2:B8,"MGR")**

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Total HR employees	**4**
10		Total MGR employees	**2**

(6) COUNTIFS function

Description: Counts the number of cells within a range that meet multiple criteria.
Syntax: =COUNTIFS(range1, criteria1, range2, criteria2, ……)
Example:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Total DGMs of FIN dept	**=COUNTIFS(A2:A8,"HR",B2:B8,"DGM")**
10		Total MGRs of HR dept	**=COUNTIFS(A2:A8,"HR",B2:B8,"MGR")**

Result:

	A	B	C
1	**Dept**	**Designation**	**Salary**
2	HR	MGR	40000
3	HR	DGM	60000
4	HR	AGM	70000
5	FIN	MGR	50000
6	FIN	DGM	65000
7	FIN	DGM	67000
8	HR	DGM	70000
9		Total DGMs of FIN dept	**2**
10		Total MGRs of HR dept	**1**

(7) MAX function

Description: Returns the maximum value in a list of arguments.
Syntax: =MAX (value1, value2, ……..)

Example:

	A	B
1	**Percent**	
2	45	
3	69	
4	76	
5	54	
6	Maximum value	=MAX(A2:A5)

Result:

	A	B
1	**Percent**	
2	45	
3	69	
4	76	
5	54	
6	Maximum value	76

(8) MEDIAN function

Description: Returns the median of the given numbers.
Syntax: =MEDIAN (number1, number2, ……)

Example:

	A
1	**Data**
2	1
3	2
4	3
5	4
6	5
7	6
8	**Formula**
9	=MEDIAN(A2:A6)
10	=MEDIAN(A2:A7)

Result:

	A
1	**Data**
2	1
3	2
4	3
5	4
6	5
7	6
8	**Formula**
9	3
10	3.5

(9) MIN function

Description: Returns the minimum value in a list of arguments.
Syntax: =MIN (value1, value2, ……..)

Example:

	A	B
1	**Percent**	
2	45	
3	69	
4	76	
5	54	
6	Minimum value	=MIN(A2:A5)

Result:

	A	B
1	**Percent**	
2	45	
3	69	
4	76	
5	54	
6	Minimum value	45

(10) MODE function

Description: Returns a vertical array of the most frequently occurring, or repetitive values in an array or range of data.
Syntax: =MODE (number1, number2)

Example:

	A
1	**Data**
2	5.6
3	4
4	4
5	3
6	2
7	4
8	**Formula**
9	=MODE(A2:A7)

Result:

	A
1	**Data**
2	5.6
3	4
4	4
5	3
6	2
7	4
8	**Formula**
9	4

(11) STDEV function

Description: The standard deviation is a measure of how widely values are dispersed from the average value (the mean).

Syntax: =STDEV (number1, number2, ……)

Example:

	A
1	**Strength**
2	1345
3	1301
4	1368
5	1322
6	1310
7	1370
8	1318
9	1350
10	1303
11	1299
12	**Formula**
13	=STDEV(A2:A11)

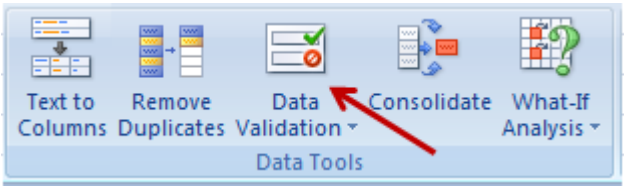
Result:

	A
1	**Strength**
2	1345
3	1301
4	1368
5	1322
6	1310
7	1370
8	1318
9	1350
10	1303
11	1299
12	**Formula**
13	27.46391572

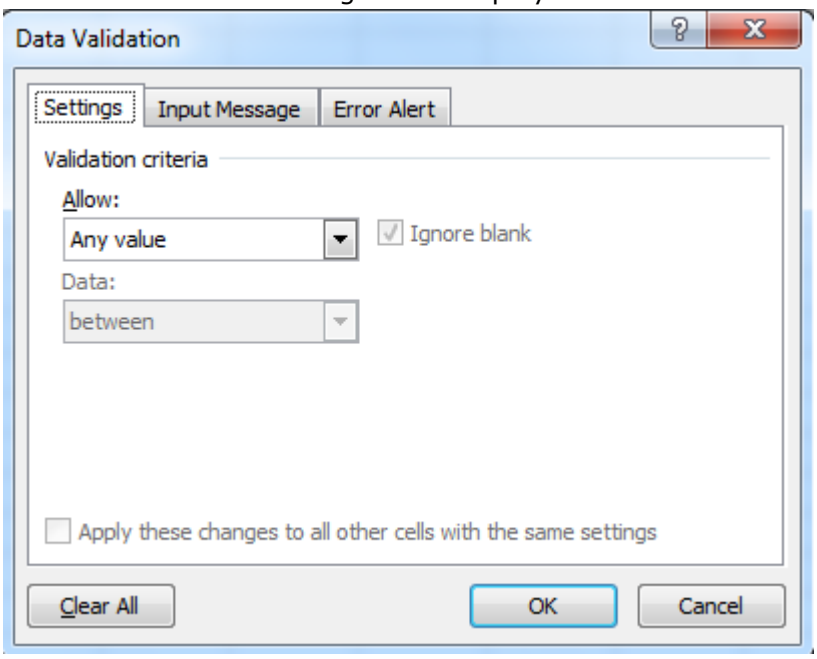
DATA VALIDATION

If you want to restrict data entry on a worksheet, you can setup data validation by doing the following.

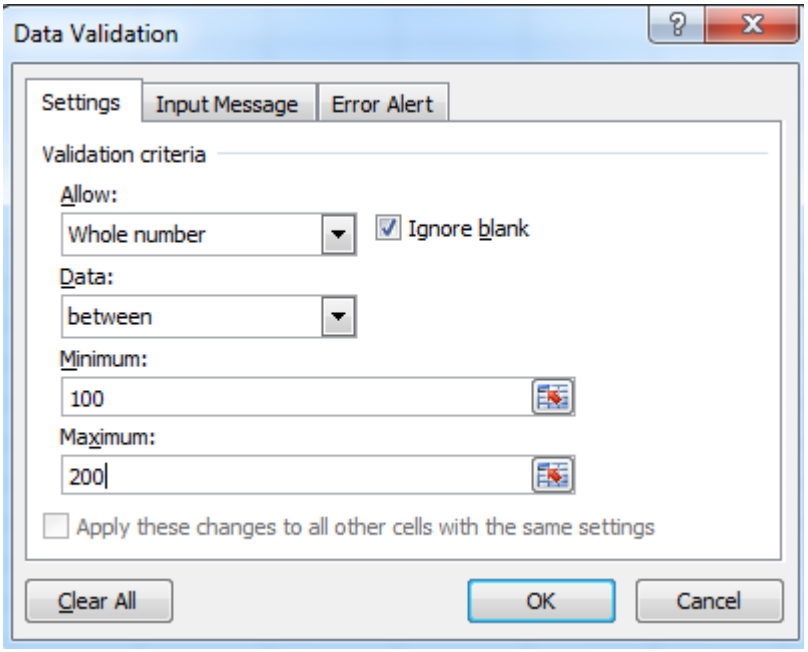
1. Select A1 cell to validate.
2. On the **Data** tab, in the **Data Tools** group, click **Data Validation.**



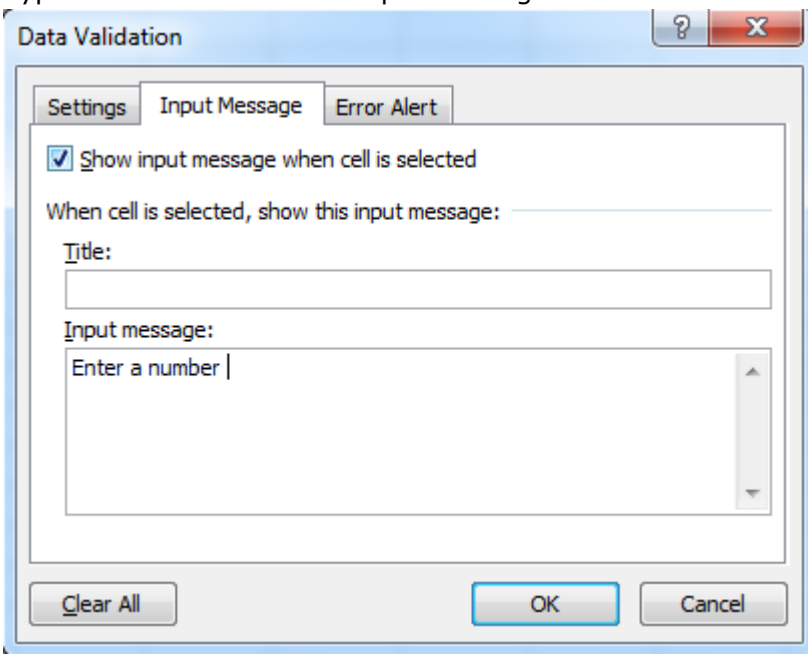
3. The Data Validation dialog box is displayed.



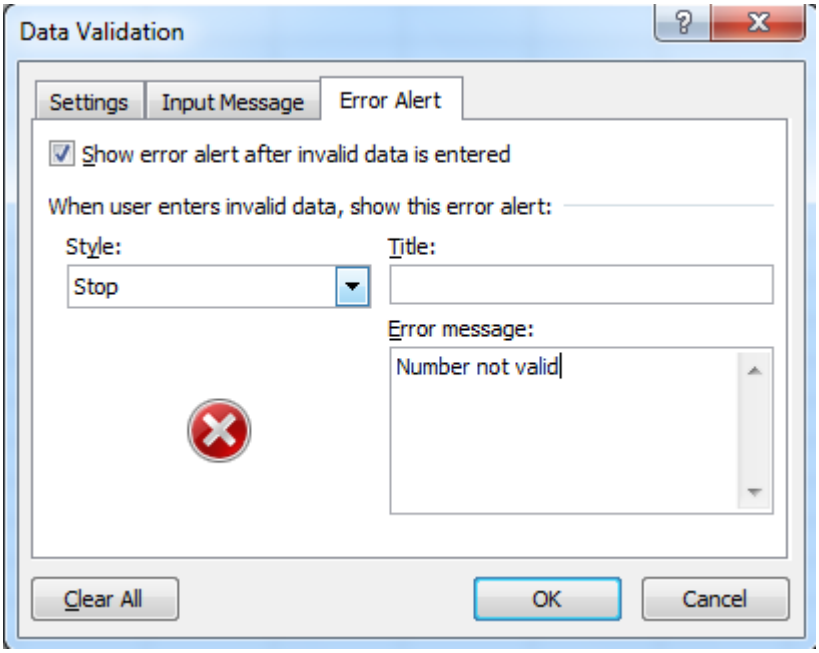
4. Click on **Setting**tab. Select **Whole Number** from Allow dropdown. Select **Between** from Data dropdown. Enter 100 on Minimum textbox and enter 200 on maximum textbox.



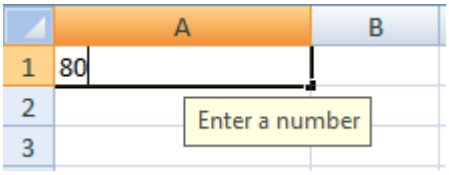
5. Click on **Input Message** tab.
6. Type 'Enter a number' on Input Message textbox.



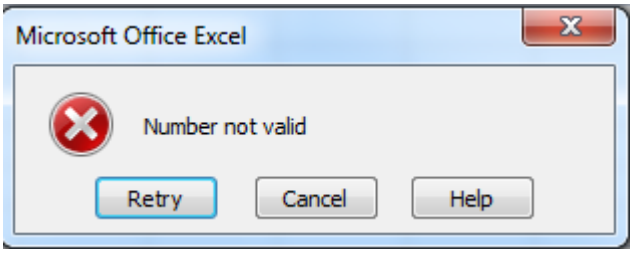
7. Click on **Error Alert** tab.
8. Type 'Number not valid' on Error message textbox.



9. Click on OK button.
10. Select validated cell and enter a number less than 100.



11. You will receive a validate message.

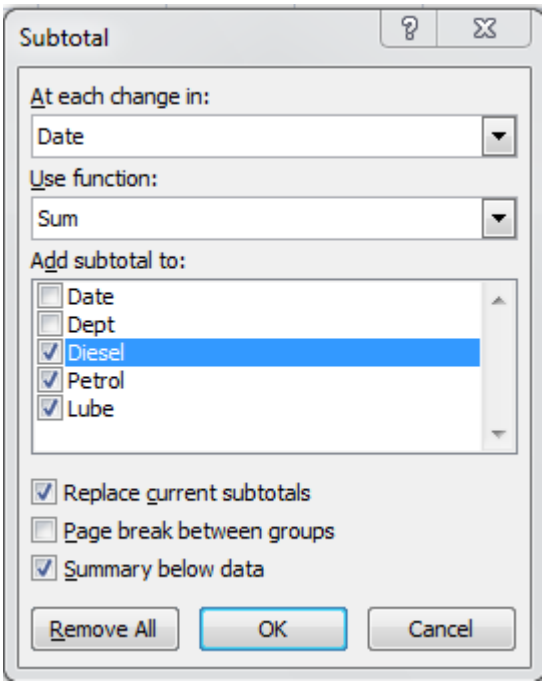


SUBTOTAL

1. Create a worksheet and enter data as following.

	A	B	C	D	E
1	**Date**	**Dept**	**Diesel**	**Petrol**	**Lube**
2	01/01/2006	Dept1	1000	65	45
3	01/01/2006	Dept2	1253	98	25
4	01/01/2006	Dept3	1586	65	35
5	02/01/2006	Dept1	1256	78	85
6	02/01/2006	Dept2	2004	69	74
7	02/01/2006	Dept3	1789	32	56
8	03/01/2006	Dept1	1200	58	12
9	03/01/2006	Dept2	990	99	68
10	03/01/2006	Dept3	1358	102	36
11	04/01/2006	Dept1	1235	54	59
12	04/01/2006	Dept2	1025	35	57
13	04/01/2006	Dept3	1000	69	54
14	05/01/2006	Dept1	2000	105	25
15	05/01/2006	Dept2	485	35	36
16	05/01/2006	Dept3	325	100	56

2. For date wise totaling, sort Date column in ascending order.
3. Click on **Data** tab. Go to **Outline** group and select **Subtotal.**
4. The Subtotal dialog box is displayed.
5. Select Date from At each change in drop down. Select Sum from Select Sum from Use function drop down. Click on Diesel, Petrol, Lube checkbox from Add subtotal to checkbox list.
6. Click on OK button.



7. You will see your result as follows:

	A	B	C	D	E
1	**Date**	**Dept**	**Diesel**	**Petrol**	**Lube**
2	01/01/2006	Dept1	1000	65	45
3	01/01/2006	Dept2	1253	98	25
4	01/01/2006	Dept3	1586	65	35
5	**01/01/2006 Total**		3839	228	105
6	02/01/2006	Dept1	1256	78	85
7	02/01/2006	Dept2	2004	69	74
8	02/01/2006	Dept3	1789	32	56
9	**02/01/2006 Total**		5049	179	215
10	03/01/2006	Dept1	1200	58	12
11	03/01/2006	Dept2	990	99	68
12	03/01/2006	Dept3	1358	102	36
13	**03/01/2006 Total**		3548	259	116
14	04/01/2006	Dept1	1235	54	59
15	04/01/2006	Dept2	1025	35	57
16	04/01/2006	Dept3	1000	69	54
17	**04/01/2006 Total**		3260	158	170
18	05/01/2006	Dept1	2000	105	25
19	05/01/2006	Dept2	485	35	36
20	05/01/2006	Dept3	325	100	56
21	**05/01/2006 Total**		2810	240	117
22	**Grand Total**		18506	1064	723

8. In left hand side there are 3 outline symbols 1,2,3,+ and -.
9. When you click on **1**, your output as follows.

	A	B	C	D	E
1	**Date**	**Dept**	**Diesel**	**Petrol**	**Lube**
22	**Grand Total**		18506	1064	723

10. When you click on **2**, your output as follows.

	A	B	C	D	E
1	**Date**	**Dept**	**Diesel**	**Petrol**	**Lube**
5	**01/01/2006 Total**		3839	228	105
9	**02/01/2006 Total**		5049	179	215
13	**03/01/2006 Total**		3548	259	116
17	**04/01/2006 Total**		3260	158	170
21	**05/01/2006 Total**		2810	240	117
22	**Grand Total**		18506	1064	723

11. When you click on **+**, your output as follows.

	A	B	C	D	E
1	**Date**	**Dept**	**Diesel**	**Petrol**	**Lube**
2	01/01/2006	Dept1	1000	65	45
3	01/01/2006	Dept2	1253	98	25
4	01/01/2006	Dept3	1586	65	35
5	**01/01/2006 Total**		3839	228	105
9	**02/01/2006 Total**		5049	179	215
13	**03/01/2006 Total**		3548	259	116
17	**04/01/2006 Total**		3260	158	170
21	**05/01/2006 Total**		2810	240	117
22	**Grand Total**		18506	1064	723

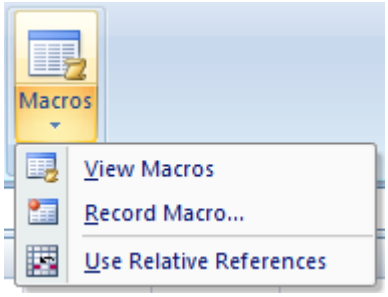
12. When you click on **3**, your output as follows.

	A	B	C	D	E
1	**Date**	**Dept**	**Diesel**	**Petrol**	**Lube**
2	01/01/2006	Dept1	1000	65	45
3	01/01/2006	Dept2	1253	98	25
4	01/01/2006	Dept3	1586	65	35
5	**01/01/2006 Total**		3839	228	105
6	02/01/2006	Dept1	1256	78	85
7	02/01/2006	Dept2	2004	69	74
8	02/01/2006	Dept3	1789	32	56
9	**02/01/2006 Total**		5049	179	215
10	03/01/2006	Dept1	1200	58	12
11	03/01/2006	Dept2	990	99	68
12	03/01/2006	Dept3	1358	102	36
13	**03/01/2006 Total**		3548	259	116
14	04/01/2006	Dept1	1235	54	59
15	04/01/2006	Dept2	1025	35	57
16	04/01/2006	Dept3	1000	69	54
17	**04/01/2006 Total**		3260	158	170
18	05/01/2006	Dept1	2000	105	25
19	05/01/2006	Dept2	485	35	36
20	05/01/2006	Dept3	325	100	56
21	**05/01/2006 Total**		2810	240	117
22	**Grand Total**		18506	1064	723

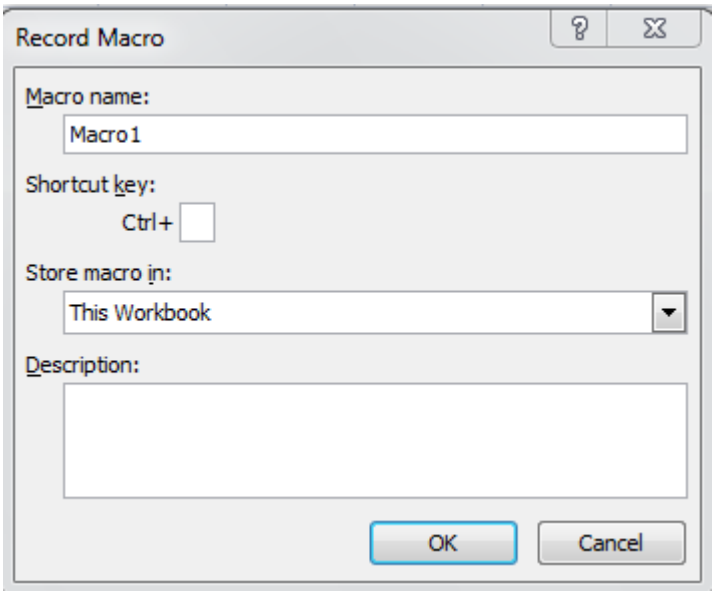
MACRO

To automate repetitive tasks, you can quickly record a macro in Microsoft Office Excel.

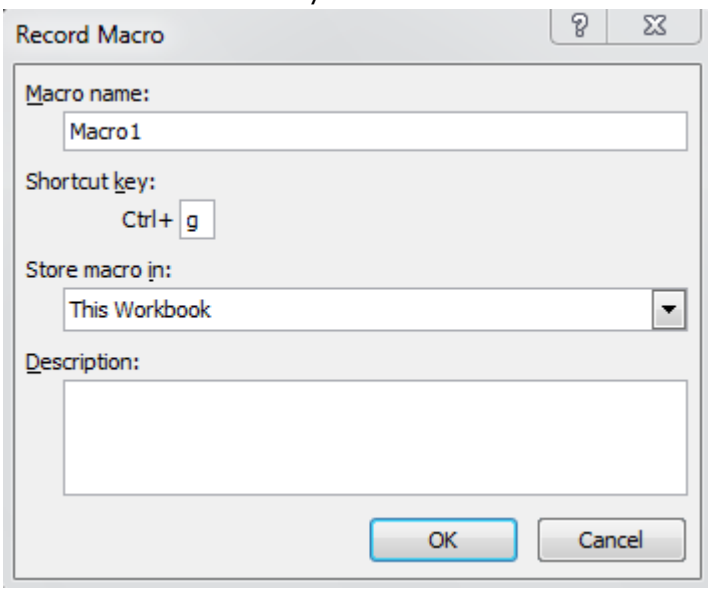
1. To record a new macro, go to **View tab → Macro → Record Macro.**



2. Click on Record Macro. A dialog box is displayed.



3. Enter Macro1 in Macro name textbox. Enter **g** in shortcut key textbox, which is associated with Ctrl key.



4. Click on OK button.
5. Make a worksheet (Sheet1) with appropriated formulas as follows.

	A	B	C	D	E
1	**Week**	**Income**	**Expense**	**Balance**	**Status**
2	Week 1			=B2-C2	=IF(D2>0,"PROFFIT","LOSS")
3	Week 2			=B3-C3	=IF(D3>0,"PROFFIT","LOSS")
4	Week 3			=B4-C4	=IF(D4>0,"PROFFIT","LOSS")
5	Week 4			=B5-C5	=IF(D5>0,"PROFFIT","LOSS")
6	Week 5			=B6-C6	=IF(D6>0,"PROFFIT","LOSS")
7		**=SUM(B2:B6)**	**=SUM(C2:C6)**	**=B7-C7**	**=IF(D7>0,"PROFFIT","LOSS")**

6. Save workbook and click on Sheet2. Press Ctrl+g, you will see your macro is run and result as follows.

	A	B	C	D	E
1	**Week**	**Income**	**Expense**	**Balance**	**Status**
2	Week 1			0	LOSS
3	Week 2			0	LOSS
4	Week 3			0	LOSS
5	Week 4			0	LOSS
6	Week 5			0	LOSS
7		**0**	**0**	**0**	**LOSS**

EXERCISE

MS EXCEL 2000 – I

EXERCISES

- Start MS-Excel and try to select the following (using mouse):

  A Cell *A Range (A1:B6)* *A Row (No. 5)*
  A Column (D) *A Complete Sheet* *Multiple Rows (No. 3,4,5)*
  Multiple Columns (C, D, E) *MultipleRanges (A5:C10 & D10:F14)*

- Try the following keys:

  ← → ↓ ↑ CTRL + ↓ CTRL + →

- Enter the following data in respective cells:

	A	B	C	D	E	F	G	H	I
1	**NAME**	**DEPT**	**BASIC**	**DA**	**TA**	**HRA**	**GROSS**	**DED**	**NET**
2	V K SHARMA	O&M	12600						
3	G K MISHRA	O&M	18000						
4	C K SINGH	CHEM	10250						
5	M JOHN	CHEM	21000						
6	D N KAK	O&M	25300						
7	M K DIXIT	CHP	15400						
8		**TOTAL**							
9		**AVERAGE**							

- Save the workbook by the name SALARY
- Close the workbook and reopen the workbook
- Select the range A1 to I1, do the following:

  Boldface *Change font size to 12* *Change font color* *Centre Align it*

- Enter the formula in :

CELLS	FORMULA	COPY IT IN RANGE
D2	= C2*80%	D3 to D7
E2	=C2 *30%	E3 to E7
F2	=(D2+E2)*8.33%	F3 to F7
G2	=SUM (C2:F2)	G3 to G7
H2	=C2*2%	H3 to H7
I2	=G2-H2	I3 to I7
C8	=SUM(C2:C7)	D8 to I8
C9	=AVERAGE(C2:C7)	D9 to I9

- Save the workbook (using tool button)
- Re-size the column width as required (using double clicking)
- Select the range H2 to H9 , Set the no. of decimal places to 2 Format other column accordingly
- Select the range I2 to I9, apply Comma (,) format with 2 decimals
- Select the range C2 to I9, apply Currency format
- Select row nos. 8 & 9 , delete it
- Select column A, and insert a new column.

- Place the cell pointer on cell A1, type EMP NO as heading and type values for all the employees
- Insert three rows at the top i.e. at 1, 2, 3 row positions.
- Enter an appropriate title for the table at the top of the table on the first row
- Select range A1 to J1, click Merge and Centre tool button
- Save the file.
- Select range A4 to B10 and copy it in Sheet2 , starting from A1 cell
- In Sheet1, select range G4 to I10 and copy it in Sheet2, starting from cell C1 (use Paste option)
- Now try using Paste Special option instead of Paste option.
- Select range A1 to B7 and transpose it in Sheet2, starting from cell A10.
- Select Sheet1, insert a column before EmpNo. Type SrNo as its heading. Generate Serial Nos. starting from 1.
- Try generating alternate serial nos. starting from 101.
- Select Sheet3, try to generate weekdays starting from Sunday in cell A1
- Try to generate Months
- Similarly, in a blank area type Jan-10 and drag from Fill Handle to generate it till Dec-10
- Now try to generate alphabets starting from A.
- Save and close the worksheet & Excel.

MS EXCEL 2000 – II

EXERCISES

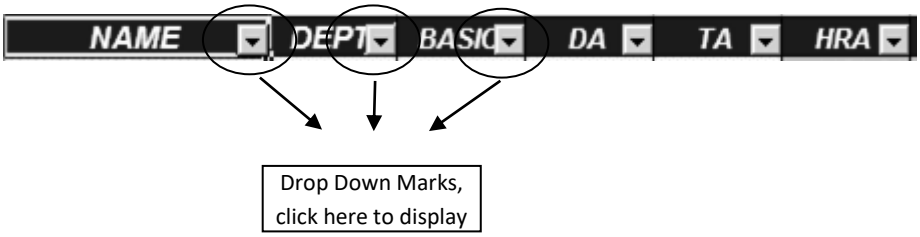
- Create a worksheet as given below and save it by the name **SALARY 2010 :**

	A	B	C	D	E	F	G	H	I
1	SALARY SHEET FOR THE MONTH OF MAR 2010								
2									
3	NAME	DEPT	BASIC	DA	TA	HRA	GROSS	DED	NET
4	V K SHARMA	O&M	12600						
5	G K MISHRA	O&M	18000						
6	C K SINGH	CHEM	10250						
7	M JOHN	CHEM	21000						
8	D N KAK	O&M	25300						
9	M K DIXIT	CHP	15400						

- Use the following formulae.

CELLS	FORMULA
D4	= C4*80%
E4	=C4*30%
F4	=(D4+E4)*8.33%
G4	=SUM (C4:F4)
H4	=C4*2%
I4	=G4-H4

- Select range D4 to I4 and double click on fill handle (a small box on bottom right corner or the cell pointer) & save the file.
- Place the cell pointer over cell A3 and sort the data by Name
- Similarly, try to sort it by Basic, in descending order. Try other columns also.
- Change color of range A4:I4 & A6:I6& A8:I8 to Red, and A5:I5 & A7:I7& A9:I9 to blue
- Try to sort column Name on Blue color. Similarly try other sorting options related to Color
- Place the cell pointer over cell A3, and apply **Filter**(this will display column headings like Name, etc in following manner)



- Click Drop Down Mark on Dept column and select any dept name (say CHEM) from the list and remove tick marks from all other.
- Similarly, click the Drop Down Mark on Dept column and try selecting other dept names.
- Click the Drop Down Mark on Dept column and select All option from the list
- Now, click the Drop Down Mark on Basic column and click Number Filter option from the list
- Select the option 'Is greater than or equal to' from the list and type 20000 in text box
- Click OK button to see its effect
- Similarly, try other conditions as given below :
    - Details of Employees getting Basic salary between 15000 to 20000

- Details of Employees in CHEM dept who are getting Net Salary above 20000
- Details of employees in CHEM & CHP dept

- Filter out Dept in Blue color
- Turn off this feature.
- Save the file and close it.
- Open a new file and type the following data:

	A	B	C	D	E
1	**Date**	**Dept**	**Diesel**	**Petrol**	**Lube**
2	01-01-10	Dept1	1000	65	45
3	01-01-10	Dept2	1253	98	25
4	01-01-10	Dept3	1586	65	35
5	02-01-10	Dept1	1256	78	85
6	02-01-10	Dept2	2004	69	74
7	02-01-10	Dept3	1789	32	56
8	03-01-10	Dept1	1200	58	12
9	03-01-10	Dept2	990	99	68
10	03-01-10	Dept3	1358	102	36
11	04-01-10	Dept1	1235	54	59
12	04-01-10	Dept2	1025	35	57
13	04-01-10	Dept3	1000	69	54
14	05-01-10	Dept1	2000	105	25
15	05-01-10	Dept2	485	35	36
16	05-01-10	Dept3	325	100	56

- Save the file with the name FUEL CONSUMPTION
- Place the cursor in cell A1 and activate Filter. Perform the following to display the given details, one by one :
  - Display Fuel consumption on 01-01-10
  - Display all the records
  - Now display fuel consumption between 01-01-10& 03-01-10
  - Display all the records
  - Display dates for which Dept3 has consumed more than 1500 litres of diesel.
  - Display all the records
  - Display fuel consumption by Dept1
  - Display all the records
  - Display fuel consumption by Dept1 and Dept3
- Remove the Filter feature
- Now, calculate Sum of Diesel, Petrol and Lube in row no.17
- Save the file and close it

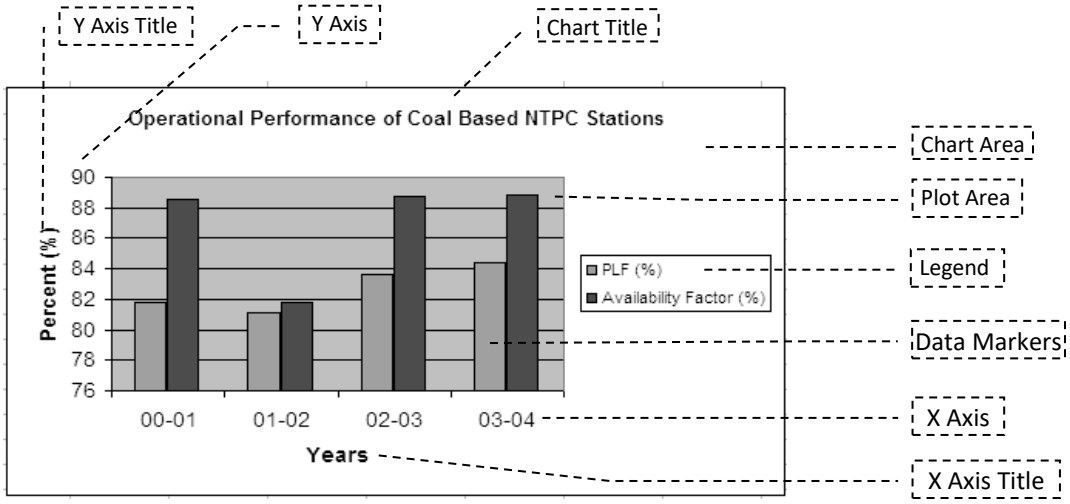
MS EXCEL 2000 – III

EXERCISES

- Open a new file in MS Excel and create the following worksheet:

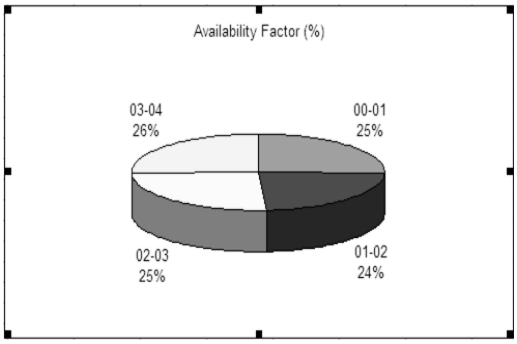
	A	B	C	D	E
1	**OPERATIONAL PERFORMANCE OF COAL BASED NTPC STATIONS**				
2					
3	**Unit**	**Apr05- Mar06**	**Apr 06 – Mar07**	**Apr07 – Mar08**	**Apr08 - Mar09**
4	**PLF (%)**	81.8	81.1	83.6	84.4
5	**Availability Factor (%)**	88.54	81.8	88.7	88.8

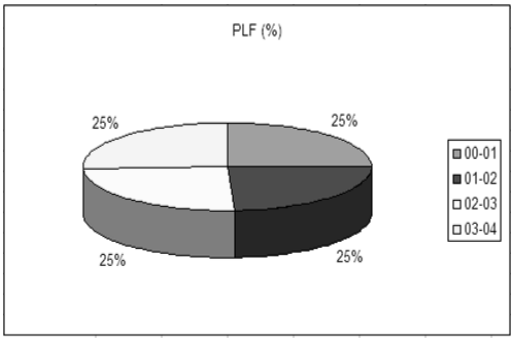
- Save the file by the name GRAPH in your folder
- Select the range A3 to E5 and then click Insert option from the menu, now choose Column chart
- Chart title as 'Operational Performance Of Coal Based NTPC Stations'
- X-axis title as 'Years'
- Y-axis title as 'Percent (%)'



- Resize the graph
- Click the Chart Title and its font size & color to 9 and Red respectively
- Change its Fill Color to Yellow
- Similarly, change the X-axis and Y-axis titles (as you desire)
- Click the Chart Area and changes its Fill Color to Brown
- Click the Plot Area and change its Fill Color to Light Yellow
- Click the Legend and change its font size & Fill Color (as you desire)
- Select Chart and do the following, using appropriate options from the menu :
  - Switch off all the gridlines
  - Shift the Legend on Right side of the Plot area
  - Remove the Legend
  - Recall the Legend and place it at bottom
- Now change the chart type to Line chart
- Now, change the chart type back to Column Chart
- Insert Data Labels using appropriate menu options

- Double click on any data label and change its size & Alignment
- Click on any Column (Data Series) and change its Fill color
- Click outside the chart
- Select the range A3 to E4 on your worksheet, and create the following 3D-Pie Charts





- Change the look of this chart as per your desire
- Save & close the workbook. Exit from MS Excel

MS EXCEL 2000 – IV

EXERCISES

Open the workbook created in previous session and select sheet named FUEL CONSUMPTION. Follow the instructions given below:

Subtotals

- Select the range A1 to E16, choose Data, Subtotal option from the menu.
- Select “Date” from “At Each Change In” and “Sum” from the list “”
- Put tick marks in the fieldnames Diesel, Petrol, Lube. Remove any other tick marks.
- Click “OK” and analyse the result.
- Click the – (minus) symbols appearing on left hand side. Now the click the + (plus) sign.
- Select Data, Subtotal option from the menu, click the remove all button to remove the subtotaling.

Pivot Table

- Use Pivot Table option to create a report which shows us Deptt. Wise as well as Date wise summary of Petrol, Diesel and Lube consumption. (Hint -Drop Date to column fields, Dept to row fields and petrol, diesel and lube to data item when creating the pivot table)
- Go to sheet 2 and use auto sum feature under Petrol, Diesel, and Lube Columns, in cells C17, D17, and E17 respectively.

Goal Seek

- Create a new file and prepare the following sheet to calculate monthly installments for a loan amount :

	A	B	C	D
1	AMOUNT	RATE	PERIOD	INSTALLMENT
2	50000	0.12	3	=PMT(B2/12,C2*12,-A2)
3				

- See the result of PMT .
- Now select the cell D3 and go to Goal Seek option in Tools menu.
- Set cell D3 to value 1500 by changing cell A2, and observe the change in Amount of loan.

Data Table

- Select Sheet 2 and prepare a sheet as given below:

	A	B	C	D	E
1	Amount	50000			
2	Rate	12%			
3	Duration	3			
4					
5	=PMT(B2/12,B3*12,-B1)	3	5	7	8
6	0.125				
7	0.13				
8	0.135				
9	0.14				

10	0.145				
11	0.15				

- Select the range A5 to E11 and choose Data, Table option from the menu, enter B3 as Row input Cell and B2 as Column Input Cell.
- Click on Ok button and see the results.

Conditional Formatting

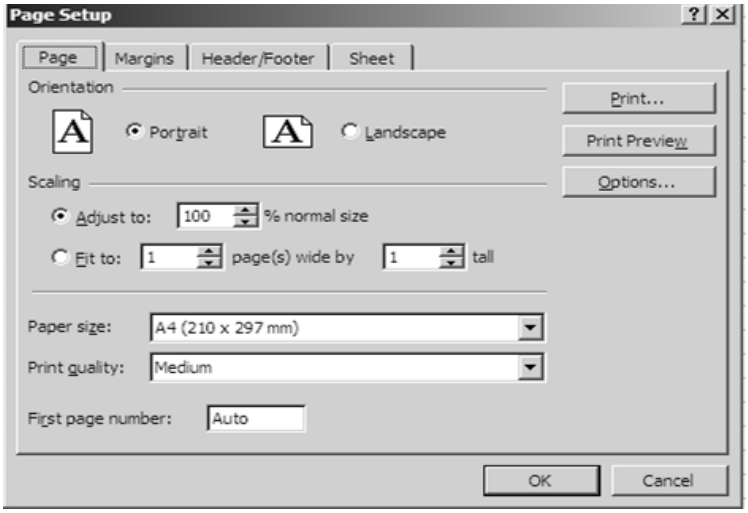
- Select range A5 to E11, choose Format, Conditional Formatting from the menu.
- Select “Cell Value Is” and “Between” options from the given lists. Enter 1000 in the box provided after “Between” and 1600 in the following box.
- Click “Format” button and set the desired format and click “Ok” button, again click the “Ok” button to see the effect.
- Close the workbook and exit from Excel.

MS EXCEL 2000 – V

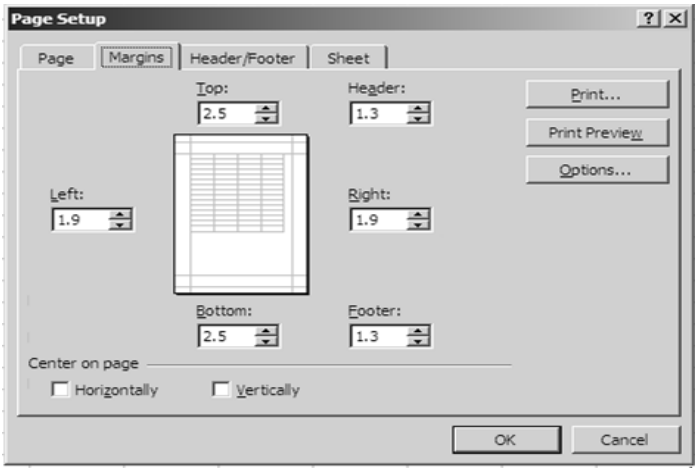
EXERCISES

Printing & Page Setting

- Open a the file which you have created in previous session
- Select **File, PageSetup** option from the menu

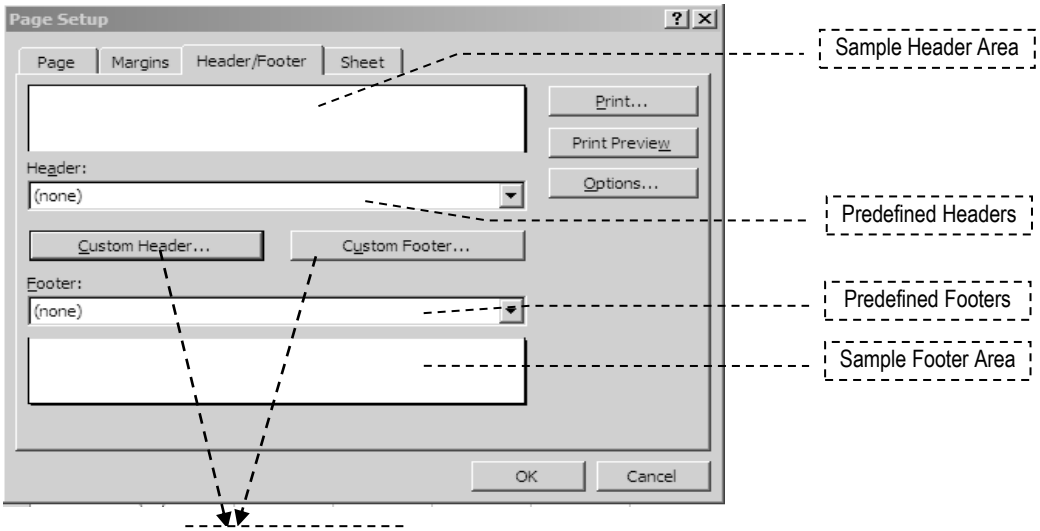


- Change page **Orientation** to **Landscape**
- Click **Print Preview** button to check the output on screen, if some part of the matter is going beyond the page, click **Close** button
- Select **File, Page** Setup option from the menu
- Now, change **Scaling** to '**Fit to 1 page(s) wide by 1 tall'** option
- Again click **Print Preview** button to see the change, click **Close** button
- Select **File, PageSetup** option from the menu
- Set Paper size to **A4** and Print quality to the best quality
- Click **Margin** option at the top to get the following screen

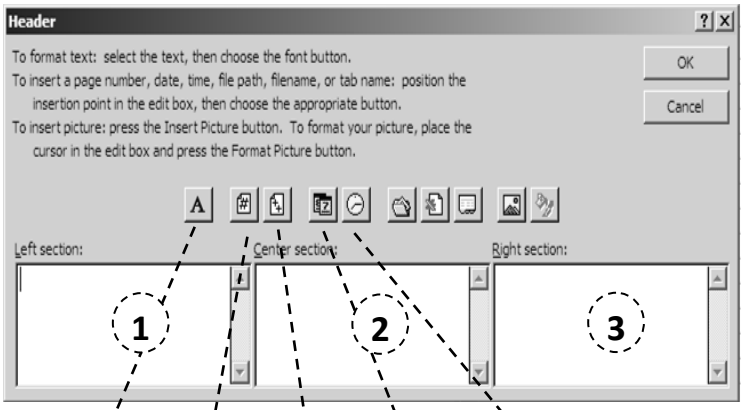


- Set the Margins (as per your requirement)
- In **Centre on Page** section, click Horizontally, Vertically to align the matter in centre
- Click **Print Preview** button to see the change, click **Close** button

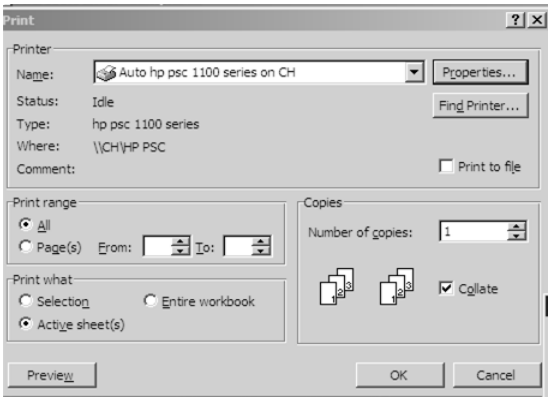
- Select **File, PageSetup** option from the menu
- Click **Header/Footer** option to get the following box :



Click here to get this



Change Font Style | Current Page No. | System Date | Tot.No.of Pages | System Time



- Add NTPC in **Left Section** of the Header and RIHAND on its **Right Section**
- Similarly, in Custom Footer, add System Date on **Left Section** and Current Page No / Tot. No. of Pages in its **Right Section**
- Click **Print Preview** to see the effect of Header/Footer and Close this view
- Select the area which you want to print, click **File, Print Area, Set Print Area** from the menu
- Click **File, Print** option from the menu to display the given box :
- Click **Properties** button to set the printer properties as given in the box appearing on next page.
- Define **Print Rage** i.e. pages which are to be printed
- Define the No. of **Copies** required, of the specified pages in **Page Range**
- ***Ensure that paper is properly fitted in the printer and it is in ON state.***
- Click **OK** button to start the final printing. Close the file & exit Excel.

MS EXCEL 2000 – VI

EXERCISES

Macro

- Open a new workbook and create a macro to generate the following format :

Qtr	Income	Expenses	Profit/Loss
1st			**=Formula**
2nd			*=Formula*
3rd			*=Formula*
4th			*=Formula*
Total	*=Formula*	*=Formula*	*=Formula*

- Save the file with a name MYWORKBOOK, select cell D10 in sheet 2 and execute the macro.

VLOOKUP

- Add a new worksheet in the current workbook and enter the following data :

	A	B	C
1	**Density**	**Viscosity**	**Temperature**
2	0.457	3.55	500
3	0.525	3.25	400
4	0.616	2.93	300
5	0.675	2.75	250
6	0.746	2.57	200
7	0.835	2.38	150
8	0.946	2.17	100
9	1.09	1.95	50
10	1.29	1.71	0

- Enter the following s in the given cells :

Cell	
A15	=VLOOKUP(1,A2:C10,2)
A16	=VLOOKUP(1,A2:C10,3,TRUE)
A17	=VLOOKUP(.7,A2:C10,3,FALSE)
A18	=VLOOKUP(0.1,A2:C10,2,TRUE)
A14	=VLOOKUP(2,A2:C10,2,TRUE)

MS EXCEL 2000 – VII

EXERCISES

Password Protection

- Save the workbook-using File, Save As option from the menu. Click the Tools button in the "Save As" dialog box and choose "General Options" from the list. Enter the desired password in the box "Password To Open" and click "Ok" button. Re-enter the password as confirmation and again click the "Ok" button.
- Click "Save" Button and close the workbook. Re-open it to see the effect.

Mail Merge

- Select a new sheet and enter the following data :

NAME	ADDRESS	CITY	PASSWORD
Ashfaq Ahmed	2, DK Gold Apartments	Varanasi	AA007
Shashank Mehta	10, Eagle Society	Allahabad	AB000
Wilson Parera	9, Konark Enclave	Jabalpur	AC002

- Change the name of the sheet to PASSWORD, close the workbook, and exit from Excel.
- Start MS-Word and type the following text (given within the box)

GLOBAL INTERNET SERVICES
123, NEHRU PLACE, NEW DELHI – 110 049,

Ref : INT/2000/1020 Dated : 1/11/2000

To,

Sub – Regarding Internet Connection

Dear sir,
We have received your application along with the requisite fee for 100 hrs. access of internet facilities. The User name and password allotted to you is as follows:

USER NAME :
PASSWORD :

Please feel free to call our customer support cell in case of any problems related to internet.

Yours truly,
(R. W. PETER)

- Save the file with a name INTERNET
- Select Tools, Mail Merge option from the menu.

- Click on the create button and select Form Letters option from the list. Click the active window button.
- Click “Get Data” button and select “Open Data Source” option from the list.
- Select “MS-Excel Worksheets” option from the list provided before “Files of Type” and choose the above XL file from the list of files provided in the dialog box. (or search it in the appropriate location).
- Click the Edit Main Document button.
- Now place the cursor below the text To, (as we have to include name, address & city at this location)
- Click insert merge field button and click on NAME, similarly place ADDERESS and CITY.
- Place the cursor in front of USER NAME, click Insert Merge Field button and click on PASSWORD.
- Now place the cursor in front of PASSWORD, click Insert Merge Field button and click on PASSWORD.
- To view the letters with their respective addresses, click View Merged Data button on the Mail Merge Toolbar. Try other buttons such as – Next Record, Last Record, First Record, and Previous Record.
- To print all the letters click Merge to Printer button. Save the document and Exit from Ms-Word.