Microsoft Excel

Introduction

Microsoft excel is a most popular package of MS-Office. Microsoft Excel is used to enter Data in the form of tables in rows and columns. We can create a tabular data base in MS Excel. Also it is used for various type of data base handling. We can easily manage and analyze the data in an independent list. The other data outside of the list remains unaffected while analyzing the list. Moreover, information contained within a list can be shared with others through integration with Microsoft Windows Share Point Services. A new user interface and a corresponding set of functionality are exposed for ranges that are designated as a list. Every column in the list has AutoFilter enabled by default in the header row which allows us to quickly filter or sort our data.

Smart documents

Smart documents are documents that are programmed to extend the functionality of our workbook by dynamically responding to the context of our actions. Several types of workbooks, such as forms and templates, work well as smart documents. Smart documents can help us reuse existing content. An excel document is called as a workbook and every workbook has 3 worksheet by default. However we can add more worksheet in our workbook if required. Every worksheet is made of row and column. The intersection of a row and column is called as Cell.

A spreadsheet is a software tool that let one enter, calculate, manipulate, and analyze set of numbers. Various components of spreadsheet are being discussed below:

Worksheet:

It is a grid of cells made up of horizontal rows and vertical columns. Number of rows and columns very form package to package.

MS Excel worksheet contains 65,536 rows and 256 columns. Each intersection of a row and column is called a cell wherein data can be stored.

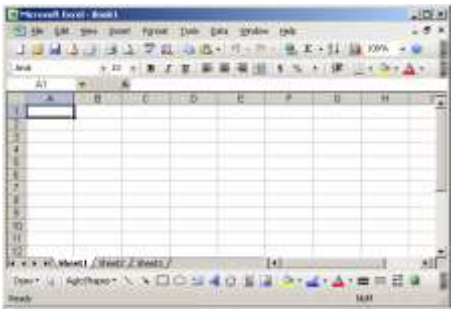
Working on spreadsheet:- Now that we aware of various components of a spreadsheet, we can start working in worksheet. Various operations can be performed in worksheet viz., entering data, moving, copying, editing, clearing, saving. Inserting/deleting rows & columns etc. Let s learn each of these operations one by one.

Opening MS Excel:

To open MS Excel or Micro Soft Excel, follow the following procedure.

Start »All Program » Microsoft Office » Microsoft Excel

The typical window of MS Excel will appear on the screen, showing the most common features. Though, one can change the look of the window as per his requirements.



Excel Work Sheet & Workbook:

The body of MS Excel which is divided into rows and columns is called as a worksheet. Many worksheets make a workbook. By default we get three worksheets in a new workbook.

Rows, Columns & Cells:

The body of MS Excel is divided into Rows and Columns. By default we get 256 Columns and 65536 Rows. However; more rows and columns can be added if required.

Columns are named as A, B, C, D …….AA,…..IV.

Rows are numbered as 1,2,3,4,5,6……..,65536.

The intercepted rectangular area between a column and a row is called as a cell. A cell is most important component of MS Excel. It is a unique member of a worksheet and every cell has a unique cell address, e.g. A1, B5, C11, X255 etc. The cell address is derived from the name of the columns and the number of the rows in which it lies. Cell address is used in calculations and in different kind of functions.

Data Entry in worksheet:
Data entry in MS Excel is very simple. All you have to do is to select the cell within which data is to be entered; and then type the data. Cell selection can be done through mouse click on the cells. Cell selection also can be done through Navigator Keys (arrow keys), Tab Key and Enter Key. Data can be edited by reselecting the cell followed by press of function key F2. Data entry can be made simpler by using smart features of MS Excel. We can use either copy or advance increment feature of MS excel.
e.g.
If you want to enter 1 to 50 in continuous cells, then enter 1 in first cell and 2 in next cell. Select both the cell and then move the mouse pointer at the extreme right bottom point of the selected cells till the mouse pointer turns into a black plus (+) sign. Now drag the mouse pointer all your desire data are entered in cells. The same can be done for Days (SUN, MON, TUE etc) or Months (JAN, FEB, MAR etc).

If same data is to be repeated then select the cell and start typing the data. Immediately; the data already enter, will appear as suggestion. If you want to honour the suggestion then simply press Enter Key and data gets repeated.

Dates, decimal places and other numerical data can be configured before entering the data. As the data is entered, it will take the shape as per the configuration.

Rang of cell: Range of cell is group of one or more contiguous cell that forms a rectangular area in shape. A range is specified by giving the addresses of first cell and the last cell of the range separated by some symbol character Ex. A5:B10

Entering data in worksheet:
Any type of data- numerical, alphanumeric, non numerical or formula can be entered in worksheet by typing. To enter data in a cell, firstly place the cell pointer over the desired cell and type the data.
Three types of data can be entered in ms-excel worksheet. These three types of data entries are:

1- Numbers
2- Text
3- Formula

Numbers
These are numeric entries. These entries can be used in calculation.
In ms-excel, a number can contain only the following characters:
0 1 2 3 4 5 6 7 8 9 + - ( ) , / $ % . E e

Ms-Excel ignores leading plus signs (+) and treats a single period as a decimal. All other combinations of numbers and non-numeric characters are treated as text.

Text
these are the text entries in the worksheet. these entries are not used in calculations.
In MS-Excel, text is any combination of numbers, spaces, and non-numeric characters – for example, MS-Excel treats the following entries as text:
12AA34, 123ASD, 12-564, 234 098.
All text is left aligned in a cell. to change the alignment, click Cells, on the format menu, click the alignment tab, and then select the options you want.

Formula

These are the entries that describe the relationship among cells and generally are instruction to calculate/manipulate with numbers or text. A formula can contain value (entries that can be used for calculations) operators and cell address. A formula can also contain functions. Formulas in MS Excel start with = sign. Therefore a formula that calculates the difference in the two value of cell B9 and A9, would be written as = B9-A9.

Working With Formulas:
Formulas are the entries in worksheet that define that relationship of two or more cells. Sometimes a call's value in dependent upon other cells, this dependency is depicted through formulas. For instance if we take an example of a bill ass shone in the figure below:
In this bill the column value is dependent upon two other columns **Price** and **Quantity**, as it is equal to Price x Qty. If the price or Qty changes, Value also changes. Such types of relationships are depicted through formulas in worksheets.

A B C Stores				
Bill No: 123				Dated: 18.08.2010
S.No.	**Item**	**Price**	**Quantity**	**Value**
1	x	20	5	100
2	y	35	2	70
3	z	15	4	60
			Total	230

Formula: Price*Quantity

Using Operators and Functions within formula:
A formula is an equation that analyzes data on worksheet. Formulas perform various operations such as addition, multiplication, division, comparison etc. on worksheet value. Formulas can have numeric constants references of other cells in the worksheet, ranges of cell, operators, functions etc.
We have read about the operations and functions that can be used in formulas. Before working with formula, It is important to understand various cell-referencing techniques.

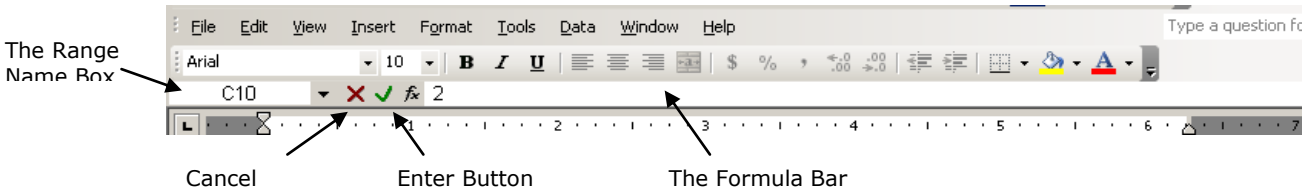
Cell referencing different type of referencing:
Each cell in worksheet has a unique address, when cell address is referred in formulas, it is called cell referencing.
These are three types:
Relative Referencing
Absolute referencing
Mixed referencing

Relative Referencing:- Cell referencing in which the cell are referred by their relative position in the worksheet – relative to a particular cell.
Absolute referencing:- Cell referencing in which the cell are referred by their fixed position (absolute position) in the worksheet.
Mixed referencing: - Combination of relative and absolute referencing is called mixed referencing.
Editing Cell Contents:

To edit cell by overwriting, you may follow these steps:

1. Select the cell that you want to edit (you can select a cell by using arrow keys on the keyboard)
2. Type in the new contents.
3. Hit enter key on the keyboard or click enter button on the formula bar.

You'll see that the new entry replace the existing contents of selected cell.



Editing Cell contents by partially modifying it:
If some minor correction is required in cell contents, then you need not over type the correct contents. Rather you can partially edit its contents by following these steps:

1. Select the cell that you want to edit.
2. To edit it's contents, either click the formula bar or Press F2. Alternatively, you can double click the cell to be edited.
3. Edit the cell and press Enter Key or click Enter Button on the formula Bar.

Selecting a Range:
To select a range through mouse you may follow these steps:

1. Point to a corner cell of the range to be selected. For instance, if you want to select a range A4:C7 then A4,A7,C4 and C7 are corner cells. You can point to any of the corner cells.
2. Now holding the left mouse button, drag the mouse pointer to the diagonally opposite corner cell. That it is if you had earlier stated with A4, you need to drag the mouse pointer to C7 (in range A4:c7) similarly, if you stated with A7, you need to drag till C4, and so on.

To select a range through Keyboard keys, you may follow these steps:

1. Point to corner cell of range to be selected.
2. Press Shift key. Holding Shift key move to the diagonally opposite corner cell, using arrow keys.
3. Now release Shift key.

And you will see desire range get selected.

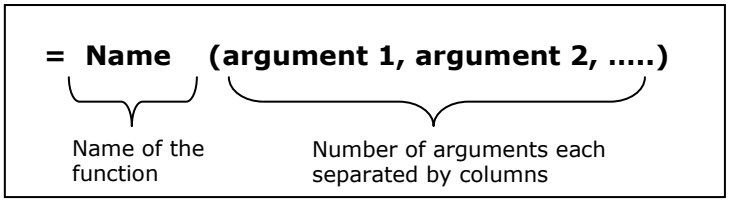
Coping a Range:
While working in a worksheet, you sometime require some already entered data should be re-entered at another place. For instance, in one part of the worksheet you've entered student's details like roll no., name, marks in five subjects for a class (say IX B) to calculate there average marks and grades. Now after you are through with this calculation. You want a summarized report of students having detail like roll no. and grade. Since this data is already present in the worksheet, you have need not retype these details once again. Rather you can copy the desired data through copy methods of MS Excel.

In MS Excel, data can be copied by using any of the following methods:

1. Using Copy and Paste operations.
2. By dragging the source range with mouse holding Ctrl key.

Some Useful Functions:
Functions are predefined formulas that perform calculations by using specific value, called arguments. Before we start discussing various types of functions.
These are: I) Arguments II) Structure
Arguments:
Arguments are the values passed to the functions, using which the functions, using which the function carries out some task. Arguments can be numbers, text logical value such as true or false, ranges or cell references. (Even error values can also be used as arguments). Argument can also be constants formulas, or other functions.

Structure:
The structure of a function begins with the functions name, follow by the opening parenthesis, the argument for the function separated by commas, and a closing parenthesis. If a function start a formula, type an equal sign(=) before the function name. Following figure illustrates the structure of a function in MS Excel.



Alignments:
MS Excel gives us three basic font alignments such as Left, Right and Center. However we have an additional alignment called Merge & Center, through which we can merge more than two cells in a cell and the data within the cell is aligned to center.

Formatting Data:
The general arrangement of data is known as formatting. It is the formatting that makes your worksheet presentable.

Text Formatting:
Cell formatting involves alignment of fonts in cell, font style, font colour, bold, italics, underline, fill colour, border colour, number format, date format, decimal format, wrap text, shrink to fit, merge cells, orientation (Vertical and Horizontal) etc.

To Format Text, We need to follow these steps:

1. Select the cell/range you want to format
2. Select Cell on Format Menu
3. Now follow the steps given in following lines in any others
4. Aligning or Rotating text
5. Select Font, Size, Style
6. Click Ok to confirm, Cancel to abandon.

Formatting Numbers:
Numbers are formatted to change their appearance. The number format that is applied on a number, does not affect the actual cell value – the value used by Excel to perform calculations. That is, only the appearance changes, the number behind appearance remains as it is.

To Format Dates and times, we need to follow these steps:

1. Select the range of cell to be formatted
2. Select Cells on Format Menu
3. Now Format Cell dialog box appears
4. Click the Number Tab
5. Select firstly category of formats and then select or specify the additional information *e.g. to format Dates and Time, We'll have to select date category.*
6. Click Ok to confirm or Cancel to abandon.

Changing Font, Size, Style, Alignment through Formatting Toolbar:
The Formatting Toolbar comes with some handy format buttons that you can use to ease your text. You can use the formatting toolbar for the following things in the specified way as in table.

To make text	Click
A different font	The font you want in the Font box
A different font size	The font size you want in the font size
Bold	Bold
Italic	Italic
Underlined	Underline
A different color	The arrow next to **Font Color** and then click the color you want on the palette
More indented	Increase indent
Less indented	Decrease indent
Centralized	Center
Left Alignment	Left Align Button
Right Alignment	Right Align Button

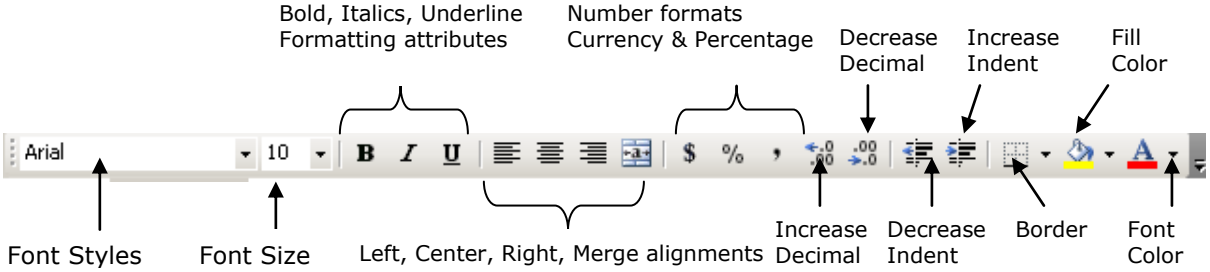


Chart in MS-Excel

Charts (Graphs) are the pictorial representation of worksheet data. Charts present worksheet data is graphical or pictorial form, which is easier to read and understand. Charts help us evaluate our worksheet data and analyze them conveniently that otherwise may be very difficult to spot in the worksheet. MS Excel supports many types of chart.

Chart Type of MS Excel:

Area Chart, Column chart etc.

Data Base Handling:

MS Excel provides us some useful utility to handle the data base in order to get the desired information from a big data base precisely and efficiently. The data base handling options are available in DATA menu and are as follows:

Sort
Filter
Validation
Sub Total
Pivot Total