

Introduction to MS Excel 2007

Management Information Systems

Overview

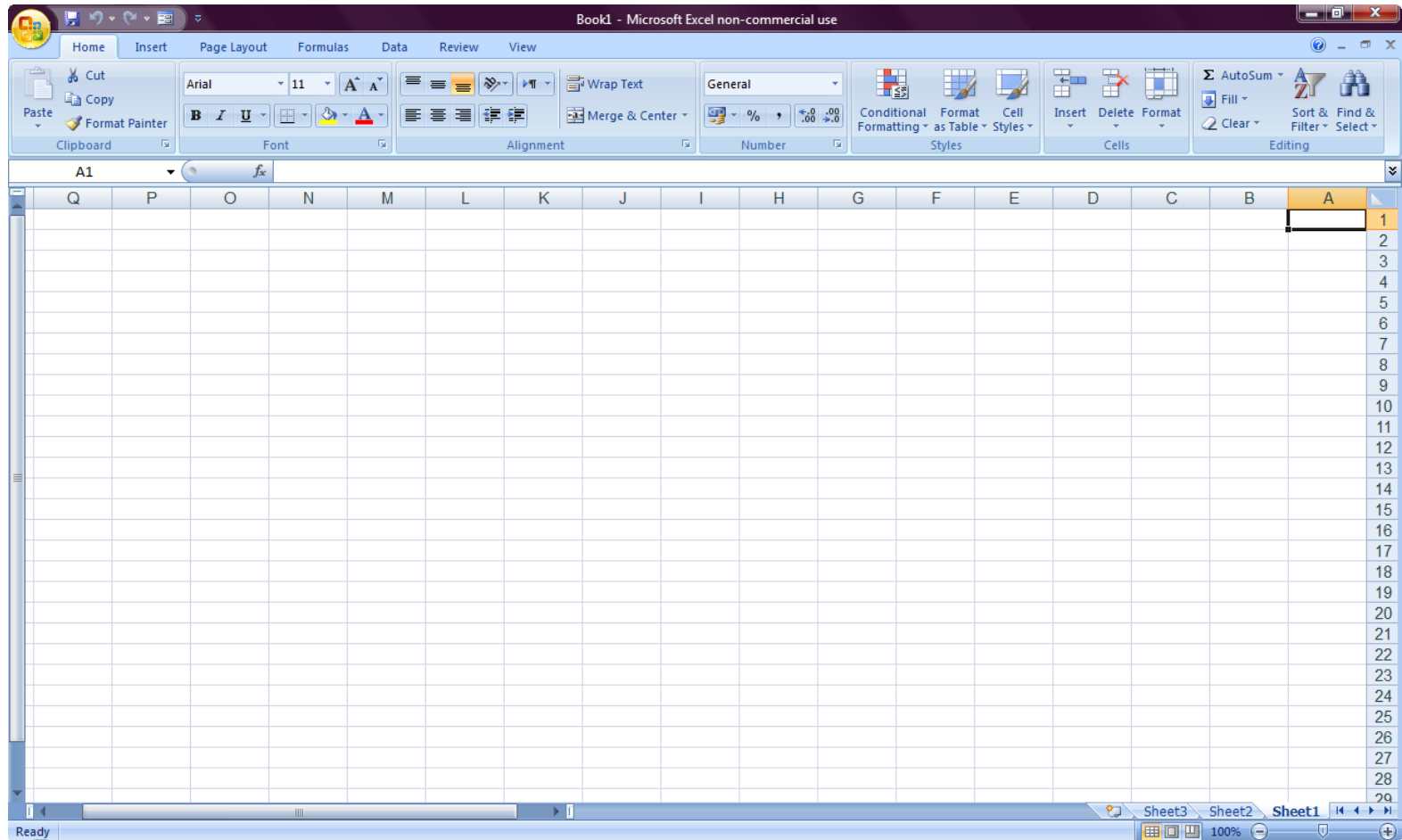
- ▶ What is MS Excel?
- ▶ Functions.
- ▶ Sorting Data.
- ▶ Filtering Data.
- ▶ Data Form.
- ▶ Data Validation.
- ▶ Create charts in Excel.
- ▶ Formatting Cells.
 - ▶ Conditional Formatting
- ▶ Page Setup.
- ▶ Printing Sheet.

What is a MS Excel?

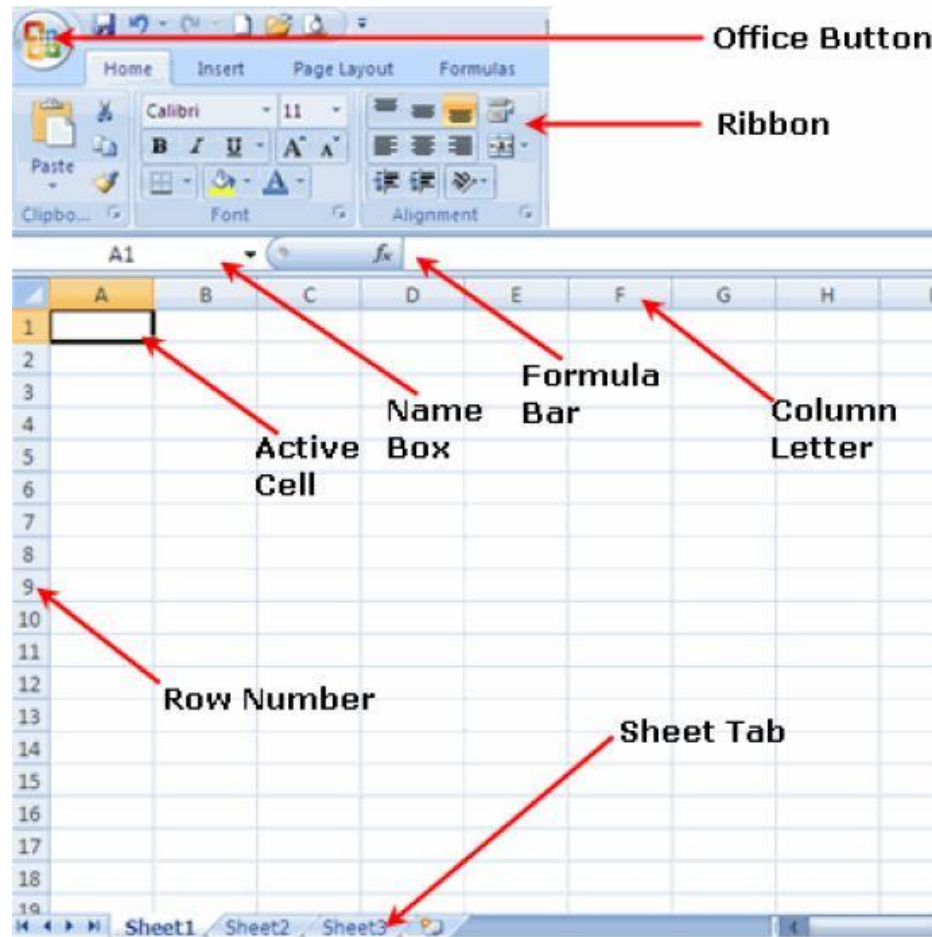
A spread sheet program

- ▶ A spreadsheet is a computer application that simulates a paper worksheet.
- ▶ It displays multiple cells that together make up a grid consisting of rows and columns, each cell containing either alphanumeric text or numeric values.
- ▶ A spreadsheet cell may alternatively contain a formula that defines how the contents of that cell is to be calculated from the contents of any other cell (or combination of cells) each time any cell is updated.
- ▶ Spreadsheets are frequently used for financial information because of their ability to re-calculate the entire sheet automatically after a change to a single cell is made.

Excel First Screen

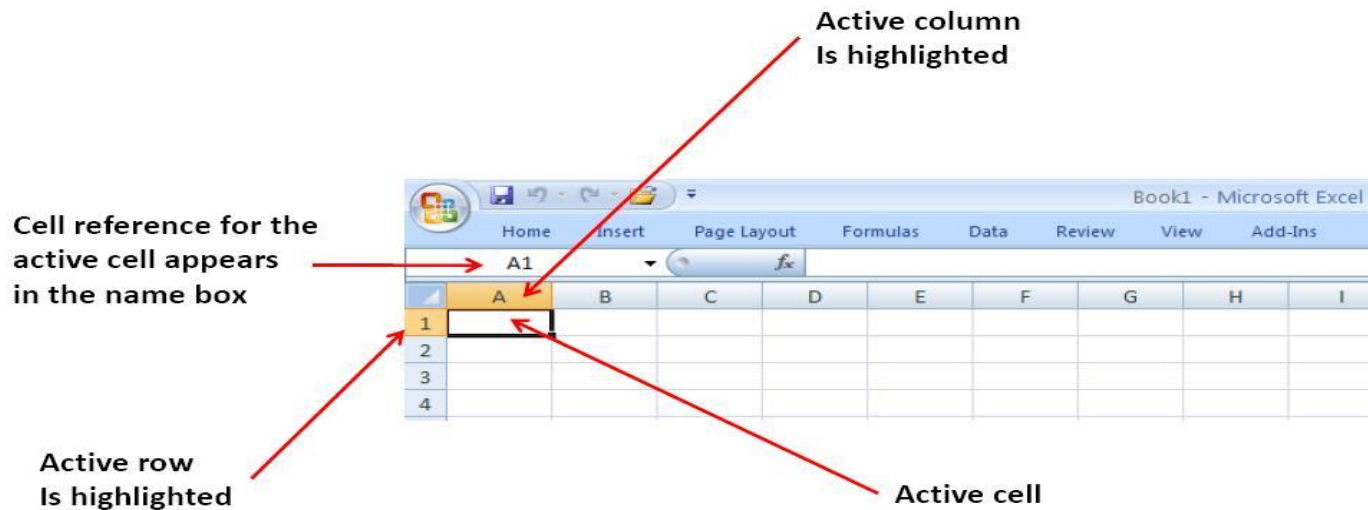


Identify Excel Components



The active cell

- ▶ Cell Address shows where the pointer is located in the worksheet
- ▶ Cell Address is composed of Column Number followed by Row Number
- ▶ For Example A1 means Column A and Row 1
- ▶ Total Rows : 65536
- ▶ Total Columns : 256



Work Book vs. Work Sheet

- ▶ A workbook is a spreadsheet file. By default, each workbook in Excel contains three pages or worksheets.
- ▶ The term spreadsheet is often used to refer to a workbook, when in actual fact, spreadsheet refers to the computer program, such as Excel.

Types of Data

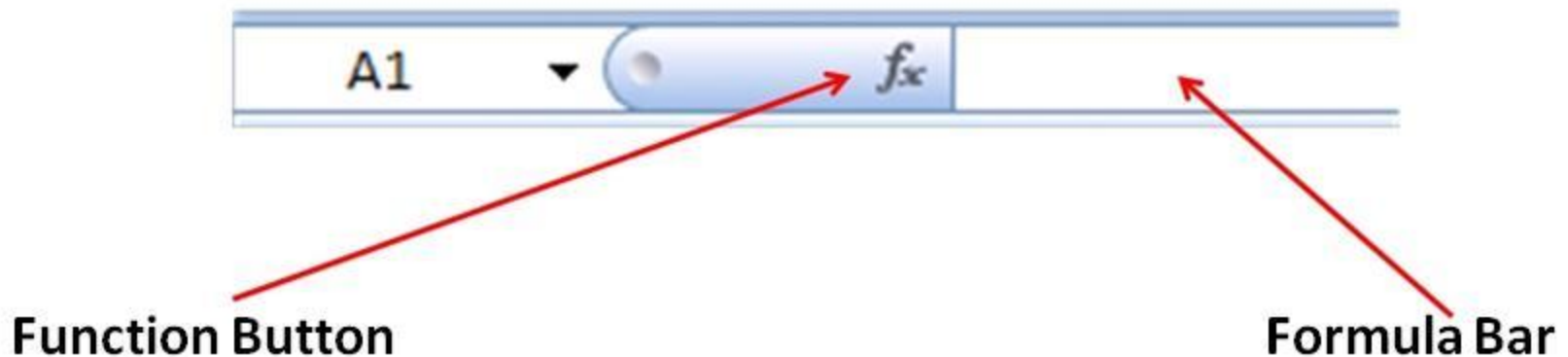
- ▶ Numeric (Numbers only)
- ▶ Alphabetic (A single letter or String)
- ▶ Alphanumeric (Letters and Numbers together)
- ▶ Dates (Calendar)
- ▶ Formula (Arithmetic operations ex. $+$ $-$ $*$ $/$ $^$)
- ▶ Function (Simple or Complex data operation ex. Sum Max Count ..etc)

Functions

- ▶ Excel supplies more than 350 functions organized into 10 categories:
 - ▶ Database, Date and Time, Engineering, Financial, Information, Logical, Lookup, Math, Text and Data, and Statistical functions.
- ▶ You can use the Insert Function button on the Formula bar to select from a list of functions.
- ▶ A series of dialog boxes will assist you in filling in the arguments of the function and this process also enforces the use of proper syntax.

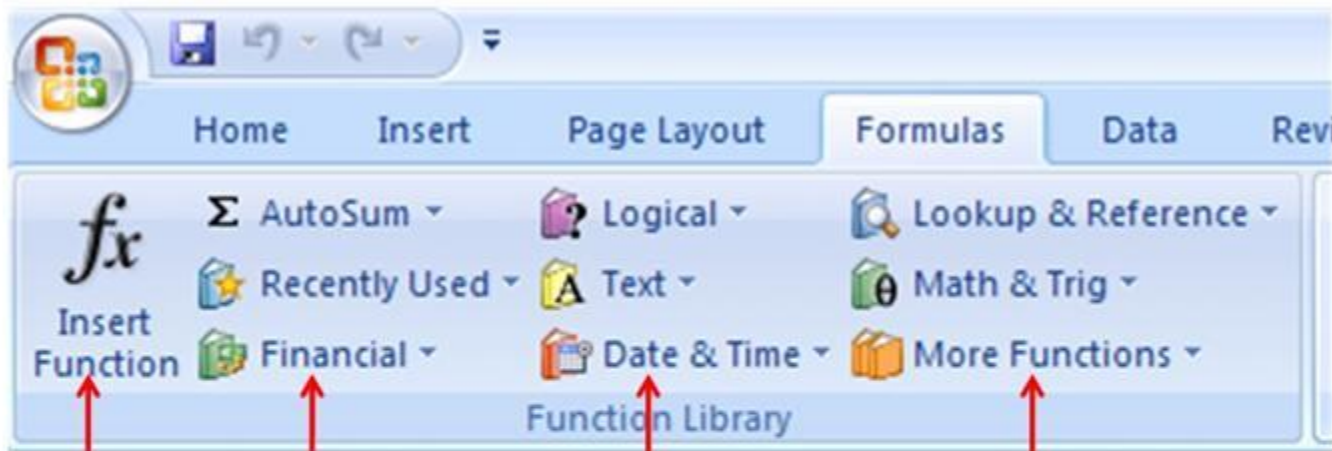
f_x marks the spot!

- ▶ Office Excel 2007 offers two methods to insert predefined functions into your spreadsheet
- ▶ The first method is the use of the Function Button next to the Formula Bar:



f_x marks the spot! (Cont)

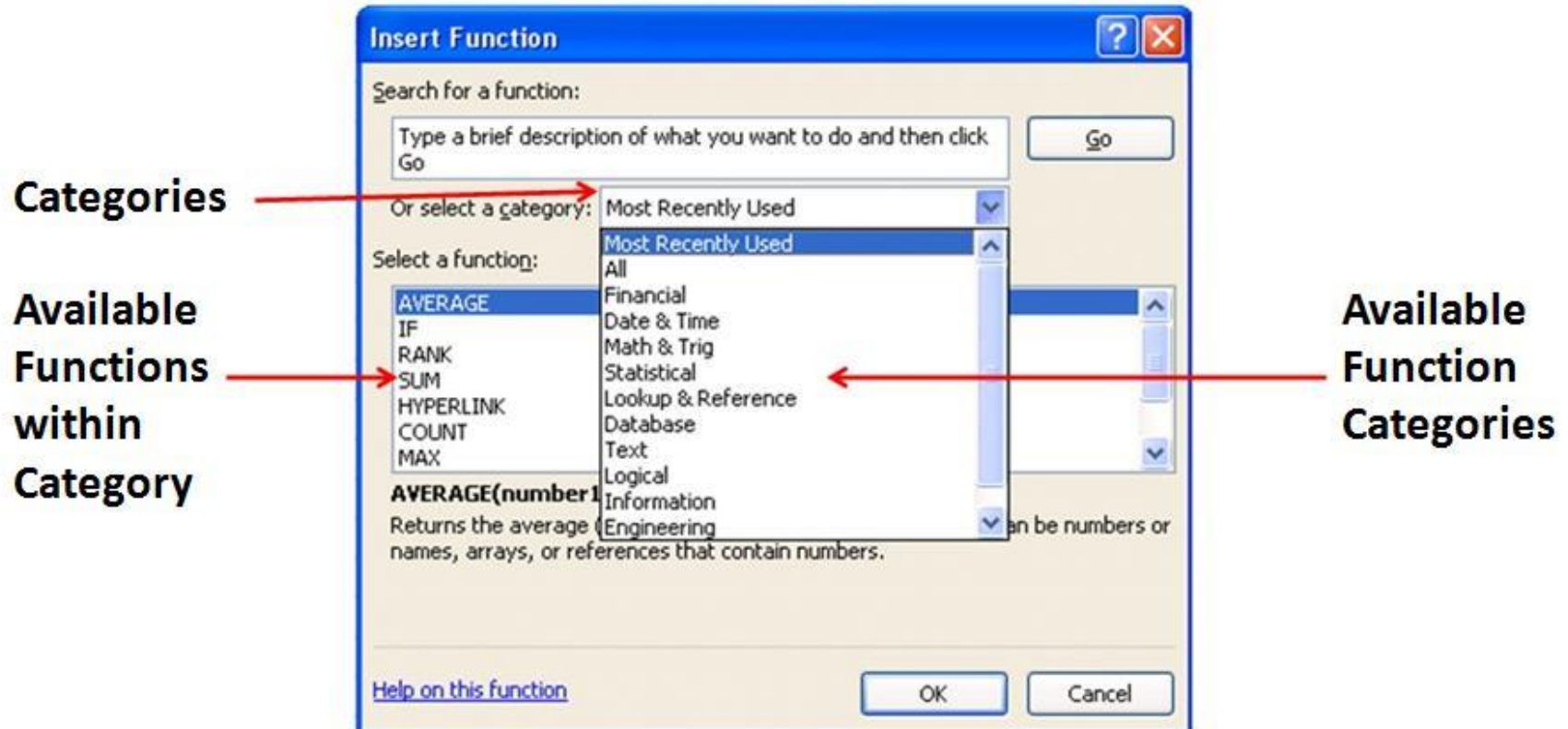
- ▶ The [second method](#) is the use of the Formulas tab and the Function Library:



**Insert "Function Window"
(like the Function Button)**

Specific Group Types of Functions

Inserting a Function



The Insert Function Window is identical to that of previous versions of Excel. If you aren't familiar with this window, the functions are grouped into categories and listed accordingly.

Functions YOU should know

Statistical Functions

- ▶ MAX - find the greatest value in a range.
- ▶ MIN - find the lowest value in a range.
- ▶ AVERAGE - determine the average within a range (sum divided by number of values).
 - ▶ COUNT - determines the number of cells in a range containing a numeric value (counts them).
 - ▶ COUNTA - counts the cells with text as well as numeric values (non blank cells).

Functions YOU should know

Arithmetic Functions

▶ SUM - syntax method:

1. Locate the pointer in the cell where you need the sum
2. Type =Sum(
3. Select the range of numeric values either through pressing Shift+Cursor key or dragging the mouse pointer. Cell addresses of the selected range will be displayed as A3:C3
4. Type) and press Enter key to complete the formula. Sum will be shown immediately after pressing the Enter key.

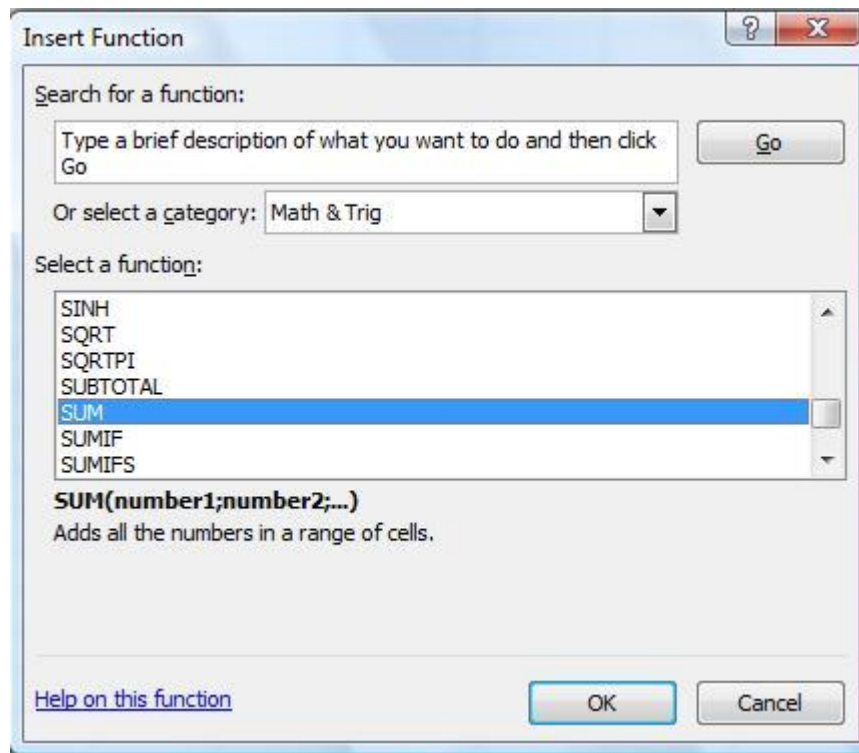
► SUM - Excel function method:

1. Enter the following data into cells D1 to D6: 114, 165, 178, 143, 130, 165.
2. Click on cell D7 - the location where the results will be displayed.
3. Click on the Formulas tab of the ribbon menu.

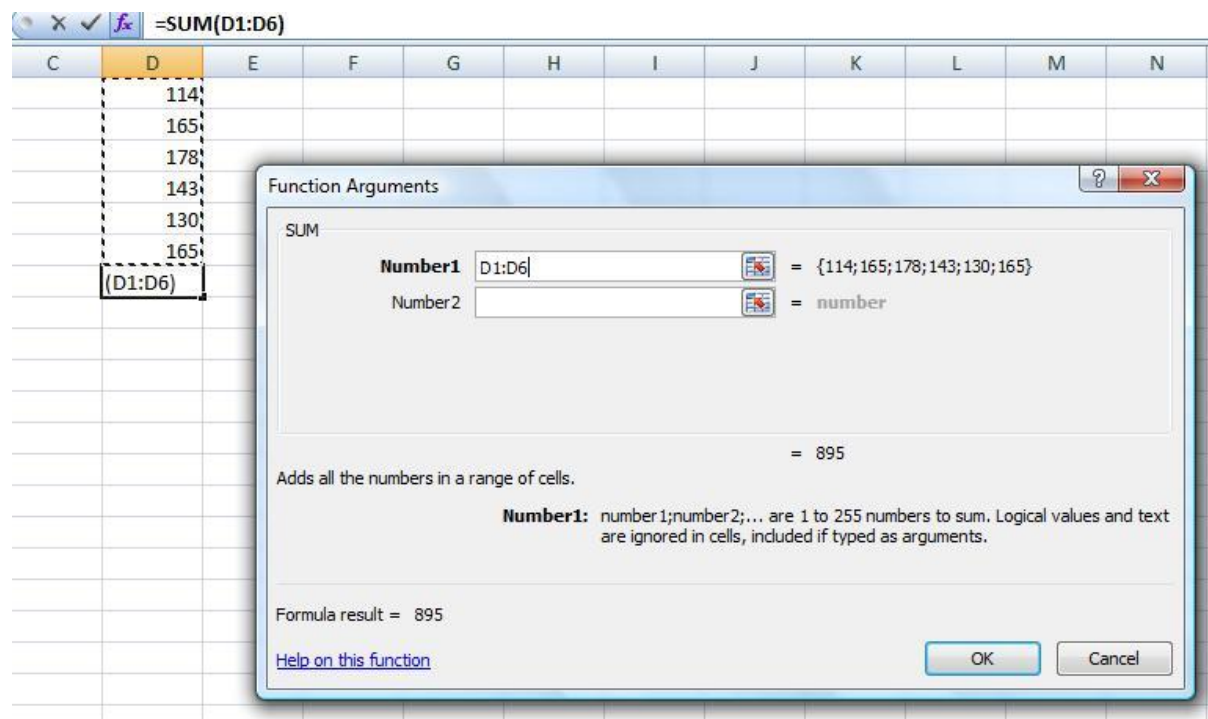
f_x =SUM(D1:D6)		
D	E	F
114		
165		
178		
143		
130		
165		
895		

Using the SUM Function to add numbers in Excel

4. Choose Math & Trig from the ribbon to open the function drop down list.
5. Click on SUM in the list to bring up the function's dialog box.



6. In the dialog box, click on the Number1 line.
7. Drag selected cells D1 and D6 in the spreadsheet.
8. Click OK.
9. The answer 895 should appear in cell D7.



-
- ▶ STDEV - function estimates standard deviation based on a sample (range of numeric values).
 - ▶ Locate the pointer in the cell where you need to calculate the standard deviation.
 - ▶ Type =STDEV(
 - ▶ Select the range of numeric values either through pressing Shift+Cursor key or dragging the mouse pointer. Cell addresses of the selected range will be displayed as A3:E3
 - ▶ The formula looks like =STDEV(A3:E3)
 - ▶ Press Enter key.
 - ▶ Result is shown immediately after pressing the Enter key.

-
- ▶ SQRT - function is used to calculate square root of a number.
 - ▶ Locate the pointer in the cell where you need to calculate square root
 - ▶ Type =SQRT(
 - ▶ Select the cell for which square root is calculated for example cell A3.
 - ▶ The formula looks like =SQRT(A3)
 - ▶ Press Enter key.
 - ▶ Calculated square root value is displayed immediately after pressing the Enter key.

-
- ▶ SIN - function is used to find the Sine trigonometric ratio of an angle.
 - ▶ Click on the cell where SIN value is required
 - ▶ Type =SIN(

▶ Click on the cell (angle) for which Sin value is needed. The angle is considered in Radians =SIN(A3. If measurement unit of angle is degree, then the angle should be multiplied by $\text{Pi}/180$ as =SIN(A3*3.143/180
 - ▶ Type) and press Enter key. Sin value for the given angle is displayed.

-
- ▶ COS and TAN - functions are used to find the cosine and tangent (trigonometric) ratios of an angle respectively.
 - ▶ Method same as of SIN function

Functions YOU should know *(cont)*

Logical Functions

- ▶ IF - a decision making function used to determine the truth value for a condition.
- ▶ AND - determines the truth value for a group of arguments as a whole (all must be true to be true)
- ▶ OR - determines the truth value for a group of arguments separately (only one must be true)

IF General form:

=IF(logical_test, value_if_true, value_if_false)

- ▶ Locate the pointer in the cell where IF function is required.
- ▶ Type =IF(D5>=50,"Pass","Fail")
- ▶ D5 is the cell address whose value is compared with 50. If its value is greater than or equal to 50, the Pass is displayed otherwise Fail is displayed.

Percentage –

Example: A student scores 453 marks out of 750, find %age result?

1. Locate the pointer in the cell where you need the percentage
2. Type =
3. Click on the numerator value then type /
4. Click on the value denominator value. The formula will look like =D18/E18. Now press Enter key
5. To convert the result into percentage format, right click on the cell > format cells > Number Tab > Percentage > OK

Tax –

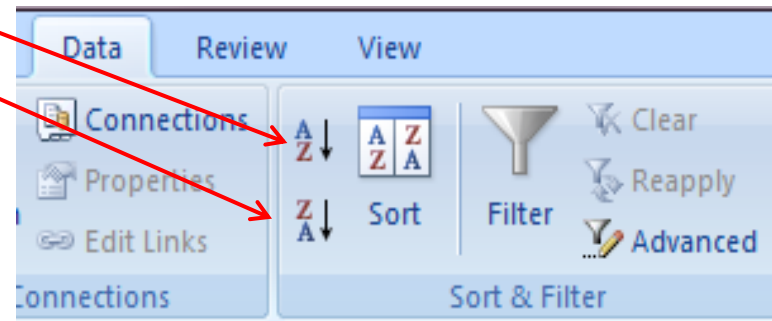
Example: A company imports some goods of SR 100,000. Find 3% Tax.

1. Locate the pointer in the cell where you need the Tax amount
2. Type $=3/100*$
3. Click on total amount, the formula is shown as $=3/100*D21$
4. Press Enter key, 3% tax of the total amount is displayed.

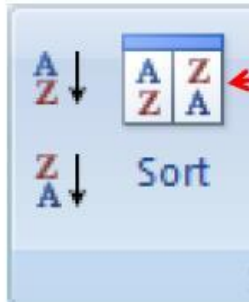
Sorting Data

Sorting data means rearranging records in ascending or descending order based on any Field / Column

- ▶ TO sort the data do the two steps:
 - ▶ select data in worksheet to be sorted.
 - ▶ from the Data tab ,select either :
 - ▶ Ascending
 - ▶ Or Descending

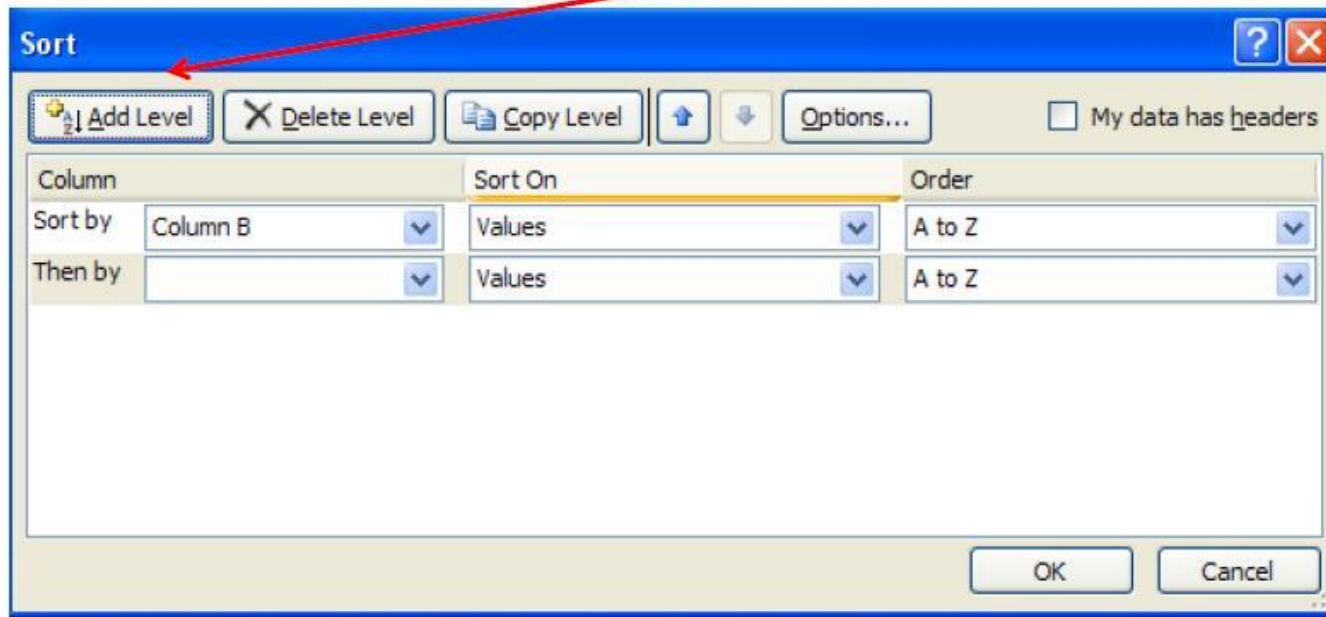


Multiple key sorting



Pressing this button

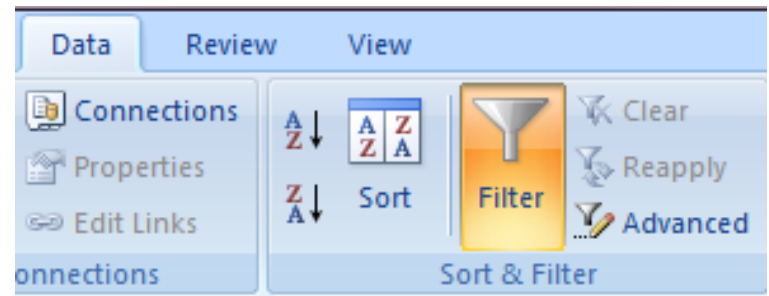
will give you this dialog window for setting-up multiple levels of sorting.



Filtering Data

Filtering is a quick and easy way to find and work with a subset of data in a range. A filtered range displays only the rows that meet the criteria

- ▶ Unlike Sorting ,Filtering doesn't rearrange a range –filtering temporarily hides rows you don't want displayed.
- ▶ TO filter the data do the two steps:
 - ▶ select data in worksheet to be filtered.
 - ▶ from the Data tab ,select Filter



	A	B	C	D
1	Last Name	First Name	Status	Rank
2	Holmes	Sarah	SW	FR
3	Littleton	Rachel	EL	JR
4	Rada	Alexander	NR	SR
5	Howell	Donna	EL	SO
6	Haines	Heidi	EL	FR
7	Drawbaugh	Mark	NR	NK
8	See	Amy	EL	SO
9	Fincham	Tiffany	UK	SR
10	Salzmann	Ashley	EL	JR

Clicking on the “drop-down arrow”
for a column

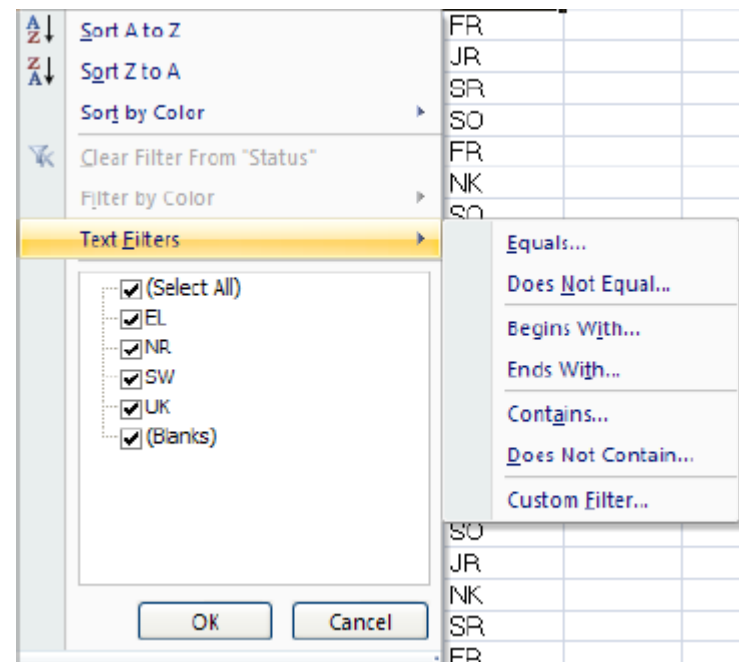
will display the filtering options window.

Filtering options for the 'Rank' column:

- Sort A to Z
- Sort Z to A
- Sort by Color
- Clear Filter From "Rank"
- Filter by Color
- Text Filters
 - ☒ (Select All)
 - ☒ FR
 - ☒ JR
 - ☒ NK
 - ☒ SO
 - ☒ SR
 - ☒ (Blanks)

Buttons: OK, Cancel

- ▶ By using Text Filters, you can specify a condition [to filter data by] that would normally take a great deal of time when you use the simple sort /remove method.

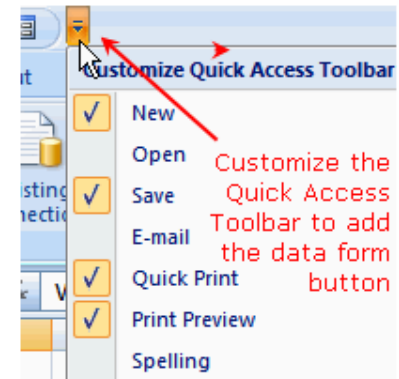


Data Form

- ▶ Excel can generate a built-in data form (data form: A dialog box that displays one complete record at a time. You can use data forms to add, change, locate, and delete records.) for your range. The data form displays all of your column labels in a single dialog box, with a blank space beside each label for you to fill in data for the column. You can enter new data, find rows based on cell contents, update existing data, and delete rows from the range.
- ▶ Microsoft chose not to include the Form button on the ribbon in Excel 2007.
- ▶ The first step to using the data entry form, therefore, is, to add the Form button to the Quick Access Toolbar so that we can use it.

Data Form (cont)

- ▶ Add the Data Form to the Quick Access Toolbar.
- ▶ Click on down arrow at the end of the Quick Access Toolbar to open the drop down menu.
- ▶ Choose More Commands from the list to open the Customize the Quick Access Toolbar dialog box.
- ▶ Click on down arrow at the end of the Choose commands from line to open the drop down menu.



Data Form *(cont)*

- ▶ Choose All Commands from the list to see all the commands available in Excel 2007 in the left hand pane.
- ▶ Scroll through this alphabetical list to find the Form command.
- ▶ Click on Add button between the command panes to add the Form command to the Quick Access Toolbar.
- ▶ Click OK.
- ▶ The Form button should now be added to the Quick Access Toolbar.

Data Form (cont)

- ▶ Select records (range of data).
- ▶ Click on the Form button.
- ▶ A form is displayed containing all the fieldnames. You can add, delete, or find records.

	A	B	C	D	E	F	G	H	I
1	Last Name	First Name	Status	Rank					
2	Holmes	Sarah	SW	FR					
3	Littleton	Rachel	EL	JR					
4	Rada	Alexander	NR	SR					
5	Howell	Donna	EL	SO					
6	Haines	Heidi	EL	FR					
7	Drawbaugh	Mark	NR	NK					
8	See	Amy	EL	SO					
9	Fincham	Tiffany	UK	SR					
10	Salzmann	Ashley	EL	JR					
11	Fletcher	Stephanie	SW	SR					
12	Brick	Jamie	EL	SO					
13	Winters	Shari	EL	JR					
14	Carter	Scott	NR	FR					
15	Prickett	Janine	NR	SR					
16	Pell	Richard	EL	JR					
17	Brand	Adrianne	EL	SO					
18	DiGiovine	Daniel	SW	SO					
19	Costello	Michael	EL	JR					
20	Kromer	Thomas	EL	NK					
21	Miller	Kyle	SW	SR					
22	Seiffert	Craig	EL	FR					

Promise_Query ?

Last Name: Holmes 1 of 199

First Name: Sarah

Status: SW

Rank: FR

New

Delete

Restore

Find Prev

Find Next

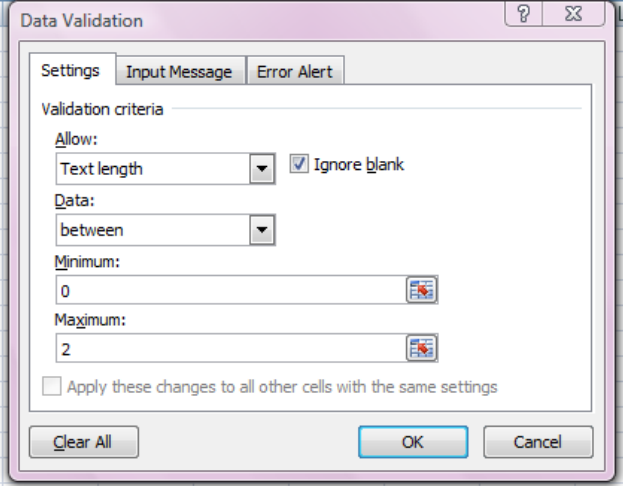
Criteria

Close

Data Validation

Ensuring valid data entry is an important task. You may want to restrict data entry to a certain range of dates, limit choices by using a list, or make sure that only positive whole numbers are entered. Providing immediate help to instruct users and clear messages when invalid data is entered is also essential to make the data entry experience go smoothly.

	A	B	C	D	E
1	Last Name	First Name	Status	Rank	
2	Holmes	Sarah	SW	FR	
3	Littleton	Rachel	EL	JR	
4	Rada	Alexander	NR	SR	
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6	Haines	Heidi	EL	FR	
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12	Brick	Jamie	EL	SO	
13	Winters	Shari	EL	JR	
14	Carter	Scott	NR	FR	
15	Prickett	Janine	NR	SR	
16	Pell	Richard	EL	JR	
17	Brand	Adrianne	EL	SO	
18	DiGiovine	Daniel	SW	SO	
19	Costello	Michael	EL	JR	
20	Kromer	Thomas	EL	NK	



The image shows the 'Data Validation' dialog box in Microsoft Excel. The 'Settings' tab is selected. Under 'Validation criteria', the 'Allow:' dropdown is set to 'Text length'. The 'Data:' dropdown is set to 'between'. The 'Minimum' value is 0 and the 'Maximum' value is 2. The 'Ignore blank' checkbox is checked. The 'Apply these changes to all other cells with the same settings' checkbox is unchecked. The 'Clear All' button is on the bottom left, and 'OK' and 'Cancel' buttons are on the bottom right.

-
- ▶ Select one or more cells to validate.
 - ▶ On the Data tab, click Data Validation, and then click the Settings tab.
 - ▶ To specify the type of validation that you want, do one of the following:
 - ▶ Any value, whole number, decimal, List, Date, Time, Text Length or Custom
 - ▶ In Custom, any criteria can be given e.g. ≥ 3000

Create charts in Excel

- ▶ Charts, or graphs, provide visual representations of the data.
- ▶ A chart may be embedded in an existing worksheet, or can be created on a separate chart sheet with its own tab in the workbook.

Creating a chart



If you want to insert a chart ... try INSERT.



The Chart Ribbon has the types listed as icons!

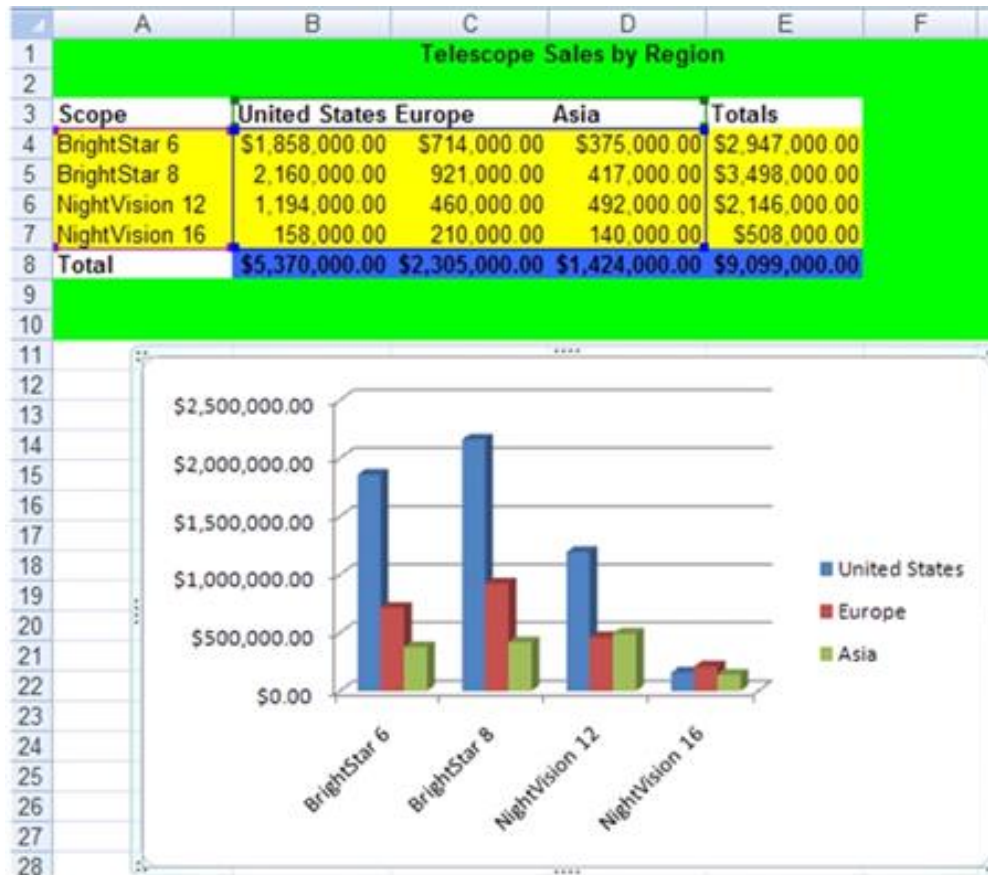
Method of chart creation

1. Select the data range (same as data series).
 - ▶ Tip: Including Column Headings will save you time.

	A	B	C	D	E
1	Telescope Sales by Region				
2					
3	Scope	United States	Europe	Asia	Totals
4	BrightStar 6	\$1,858,000.00	\$714,000.00	\$375,000.00	\$2,947,000.00
5	BrightStar 8	2,160,000.00	921,000.00	417,000.00	\$3,498,000.00
6	NightVision 12	1,194,000.00	460,000.00	492,000.00	\$2,146,000.00
7	NightVision 16	158,000.00	210,000.00	140,000.00	\$508,000.00
8	Total	\$5,370,000.00	\$2,305,000.00	\$1,424,000.00	\$9,099,000.00

2. Select the chart type.
3. Insert and designate the chart location.
4. Choose the chart options.
5. Change the chart location and size.

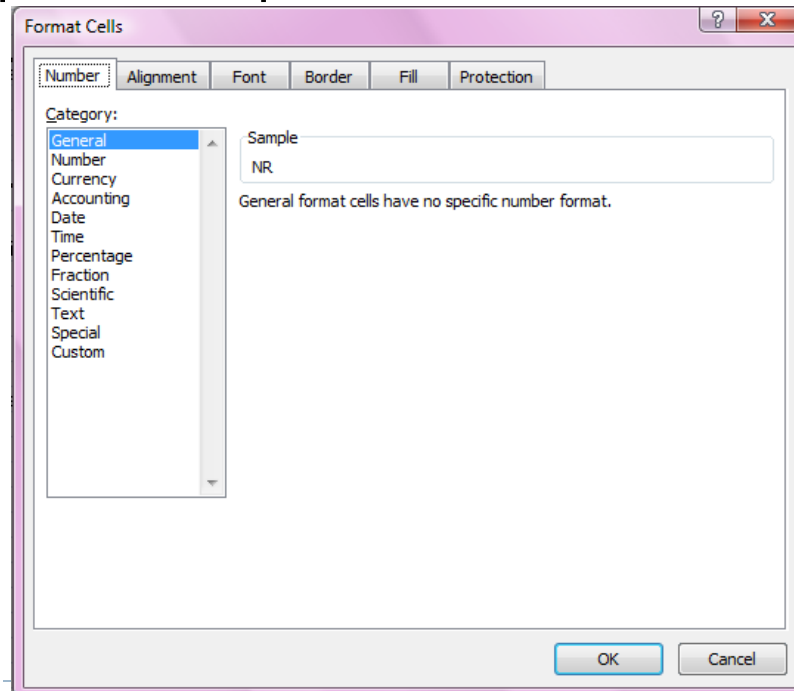
Chart in sight



Formatting Cells

The arrangement of data for storage or display is called formatting. To format cell(s), select the cell(s) to be formatted and follow the steps:

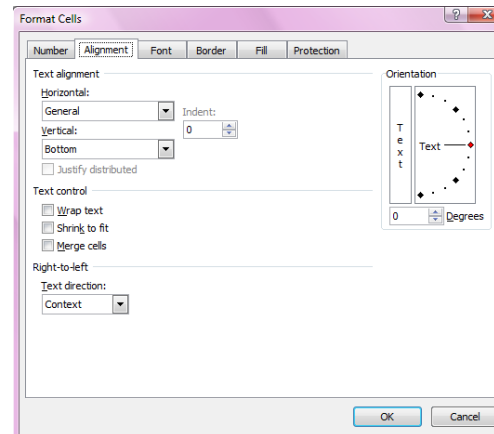
1. Right click on the selected cells and select the Format cells menu item.
2. The following dialogue box is displayed , you can configure all formatting options and press the Ok button.



Formatting Cells (cont)

There are six tabs in the Format Cells dialog box: Number, Alignment, Font, Border, Patterns, and Protection.

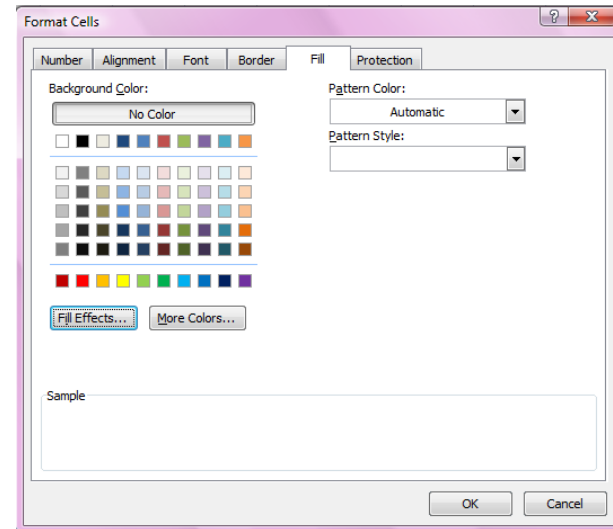
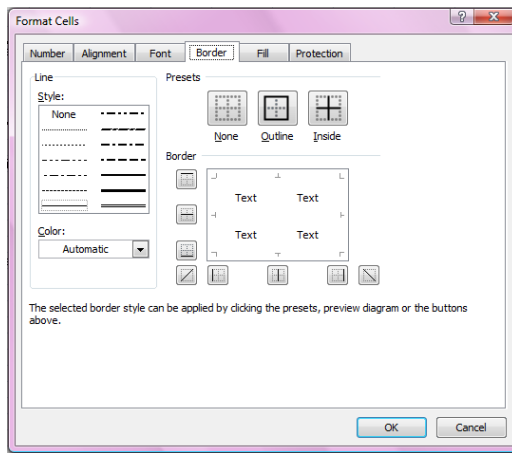
1. Number Tab: This tab contains options regarding formats of numbers. These are General, Number, Accounting, date, time, Percentage, Fraction, Scientific, text, Special and custom. By default, the general format. The user can select any format as per requirement.
2. Alignment Tab: It contains options to align text horizontally (left, center, right, justify etc), vertically (left, center, right, justify etc), orientation of text, merging of cells etc.



3. Font Tab: Here the user can select a specific font type, size of text, colour and underline text etc.

Formatting Cells (cont)

4. **Border Tab:** To surround the cells with border (lines), border option is used. It contains line types, lines colors, and options to draw border on left, right, top and bottom etc.

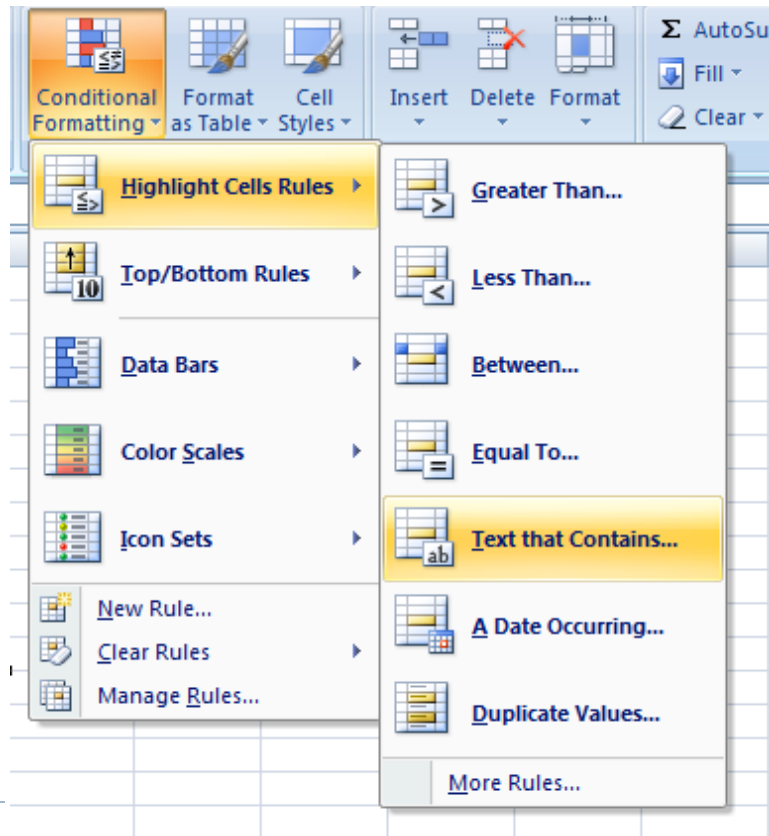


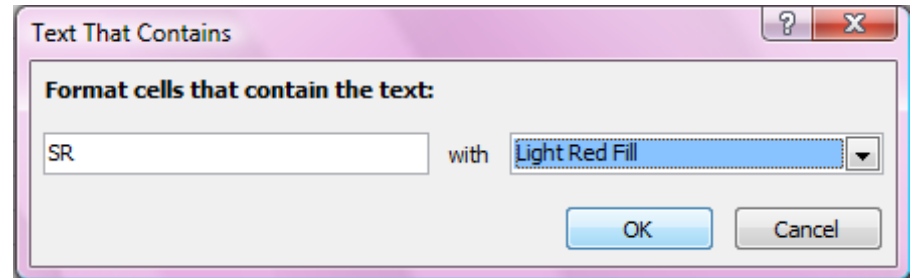
5. **Fill Tab:** It has the patterns and colors shown in the dialogue box.
6. **Protection Tab:** It has two options Locked and Hidden but these options work only when the worksheet is protected. To protect the sheet, click on [Review tab > Protect Sheet](#)

Conditional Formatting

Conditional Formatting is based on fulfillment of a condition. If the condition is true, formatting takes and no action otherwise.

1. Select the cells in which conditional formatting is required.
2. Click the Conditional Formatting button under the Home tab, Styles section.
3. Select your rules. For this example, The rule was that any text Equal to SR was red.



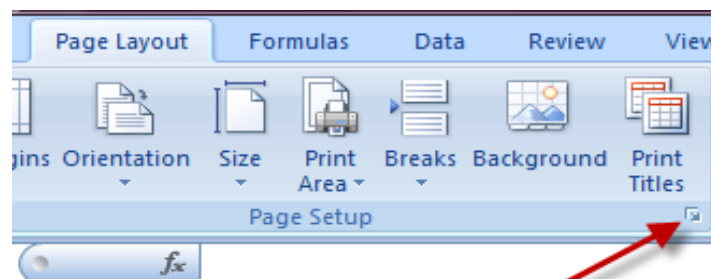


Here is what a portion of the finished spreadsheet looks like.

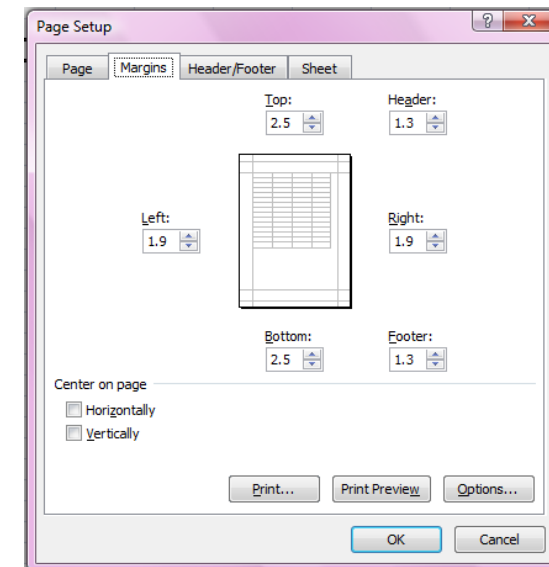
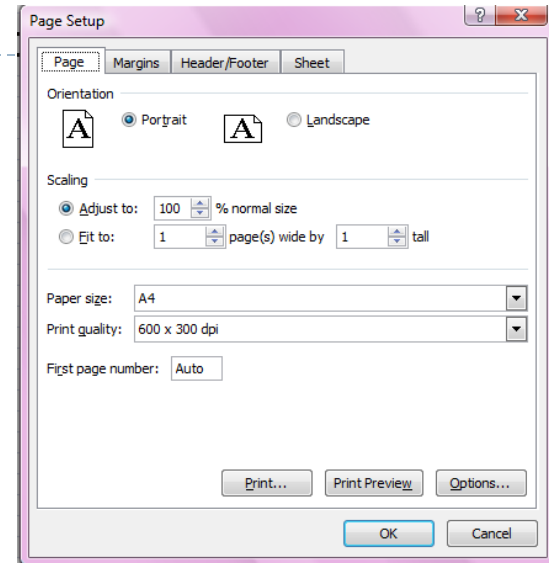
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7	Drawbaugh	Mark	NR	NK	
8	See	Amy	EL	SO	
9	Fincham	Tiffany	UK	SR	
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16	Pell	Richard	EL	JR	
17	Brand	Adrianne	EL	SO	
18	DiGiovine	Daniel	SW	SO	
19	Costello	Michael	EL	JR	

Page Setup

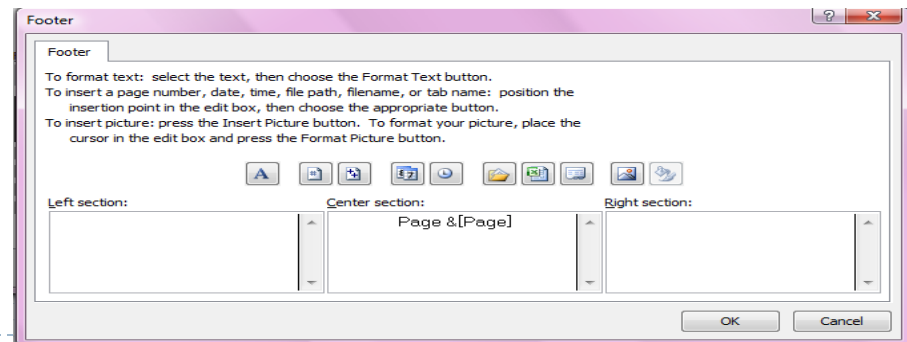
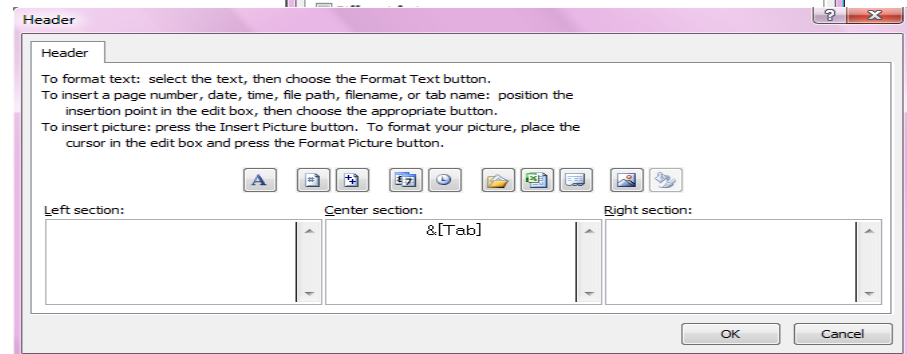
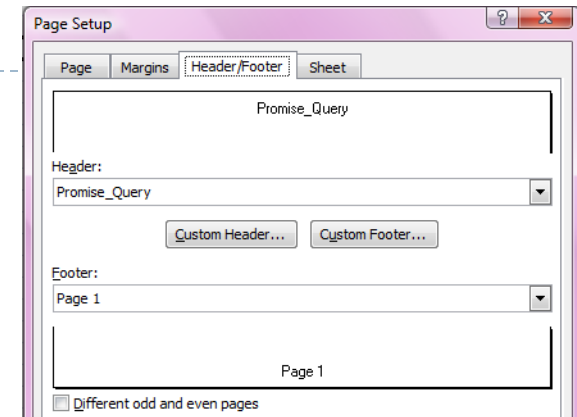
- ▶ Under the Page Layout tab.. You've noticed that a lot of the options are there as separate buttons, allowing you to quickly set one aspect, without the need for the Page Setup dialogue box.
- ▶ if you really need to get into the Page Setup dialogue box:
 - ▶ Under the Page Layout tab ,A Page Setup section on the ribbon have a little arrow in the bottom right hand corner of the section , click on the arrow ,the page setup dialogue box was displayed.





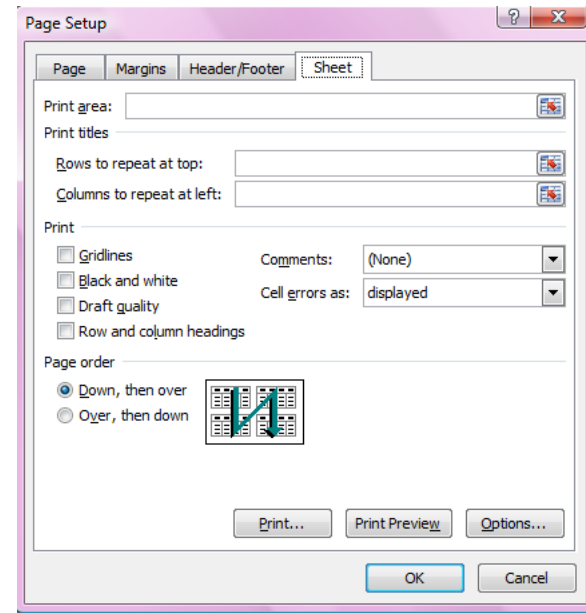
- ▶ The page setup dialogue box contains four tabs i.e., Page, Margins, Header/Footer and Sheet.
- ▶ Page Tab: In Page Tab, orientation(i.e., Portrait / Landscape), Scaling and Paper Size can be selected.
- ▶ Margins Tab: Margin means the blank space from any edge to the text. Margins are on all four sides i.e., Top, Bottom, Left and Right. Other than these four, margin from header and margin from footer can also be adjusted.



- ▶ Header/Footer Tab: In Microsoft Excel, headers and footers are lines of text that print at the top (header) and bottom (footer) of each page in the spreadsheet.
- ▶ In Excel, Header and footer both areas are divided into three i.e., Left Section, Center Section and Right Section. In these section the user can type any text like title and insert page#, time date etc.
- ▶ Write your text in the desired left/center/right section(s) and the click OK.



- ▶ **Sheet Tab:** This tab contains four major options:
 - ▶ **Print Area:** A Particular area in the sheet can be selected for printing. When print command is given, complete sheet is not printed, only selected area is printed. To select Print Area click on  in front of Print Area. Then select rows and columns and click on 



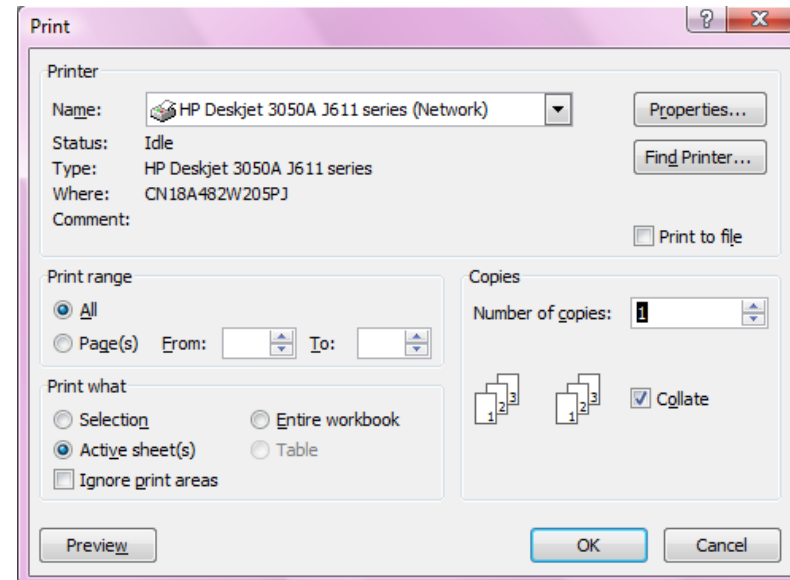
-
- ▶ Print Titles: Here you can select the rows/columns to be repeated in every page. Procedure is same as above for print area.
 - ▶ Print: Here are different options to print gridlines, row and column headings etc. These are turned on/off as per requirements.
 - ▶ Page Order: There are two main options: Down, then over means the pages are printed from top to bottom and the next series is started if there are horizontally more pages in the sheet. Over, then down means that horizontally all pages are printed first and vertically next series is started then.

Printing Sheet

To Print a worksheet
you press the Office
Button first, and then
select “Print” option
icon ... but before you
do, you should double
check your work!



- ▶ The Print dialogue box is displayed. It contains five important options Printer, Properties, Print Range, Copies and Print What:
- ▶ Printer: From here you can select printer of your own choice among the printer installed on your computer.
- ▶ Properties: Properties of printer like paper size, quality of output etc. are set from here.
- ▶ Print Range: Print range means how much pages of sheet are required to be printed i.e. all pages or some pages.
- ▶ Copies: Copies means how much times the same page to be printed.
- ▶ Print What: It contains three options i.e. Selection (selected area of sheet is printed only), Entire workbook (all sheets of workbook are printed) and Active Sheet (the sheet which is active that is printed only.)



The End.....

