# CHAPTER 5
MS-EXCEL

## 5.1 File Menu: Save, Save As, Print, Page Setup

Save:

You can save a file to a folder on your hard disk drive, a network location, the cloud, DVD, the desktop, flash drive, or save as another file format such as RTF, CSV or PDF. While you must identify the target location, if it is different than the default folder, the saving process is the same regardless of what location you choose.
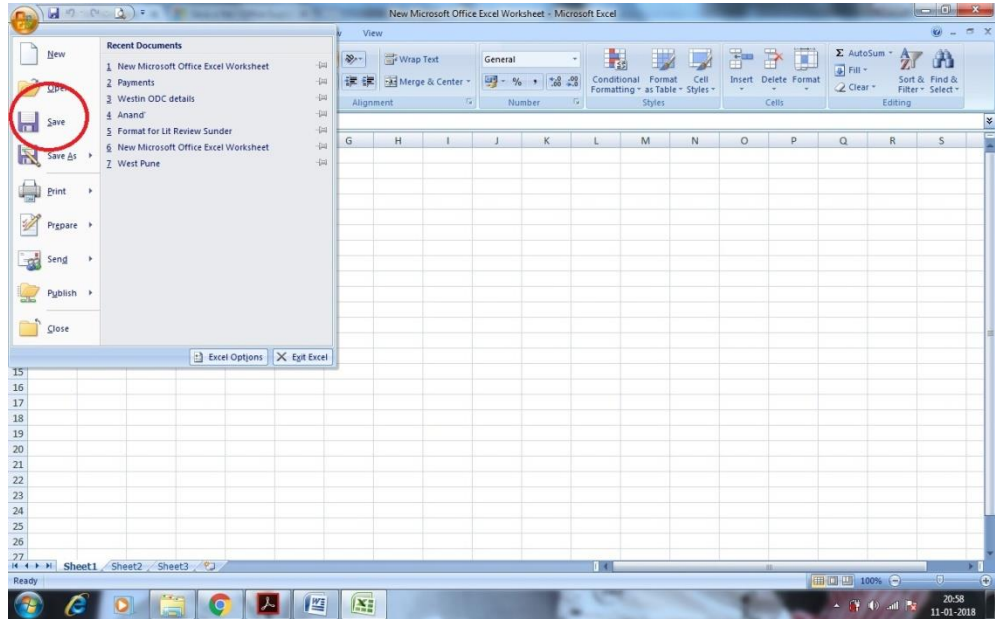
Save as:

When you save a file in a different file format, some features that are supported by the current file format may be lost. You may want to save a copy of your file in the current file format before you save the file in a different file format.
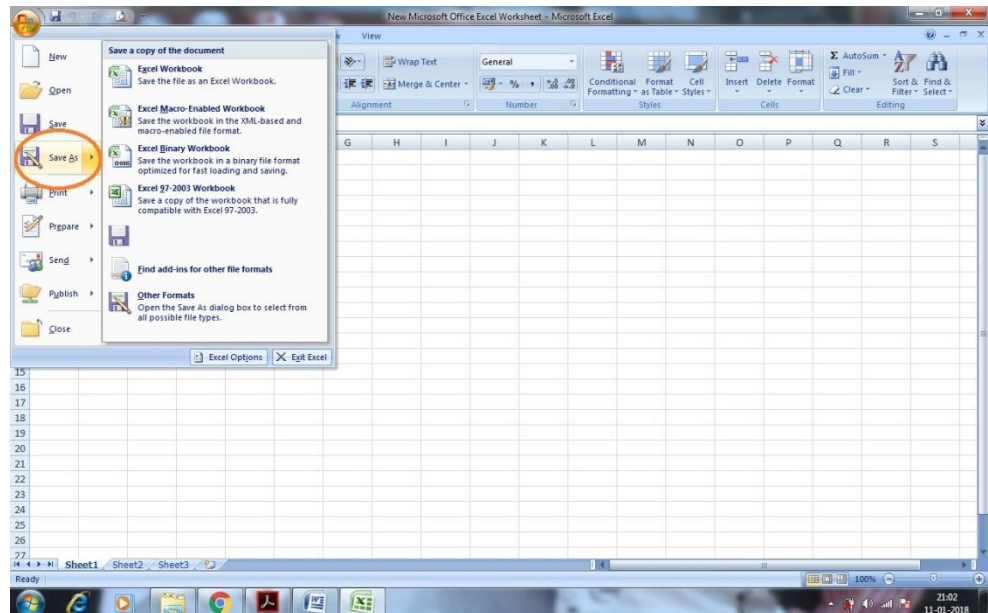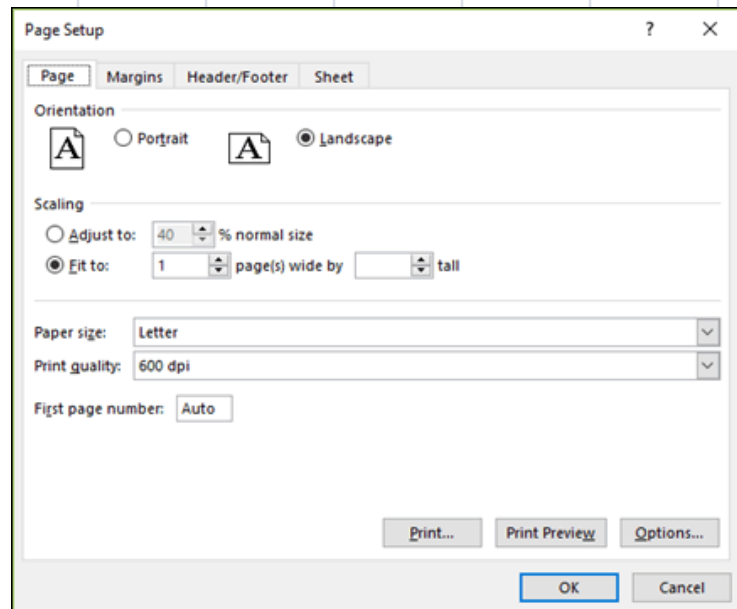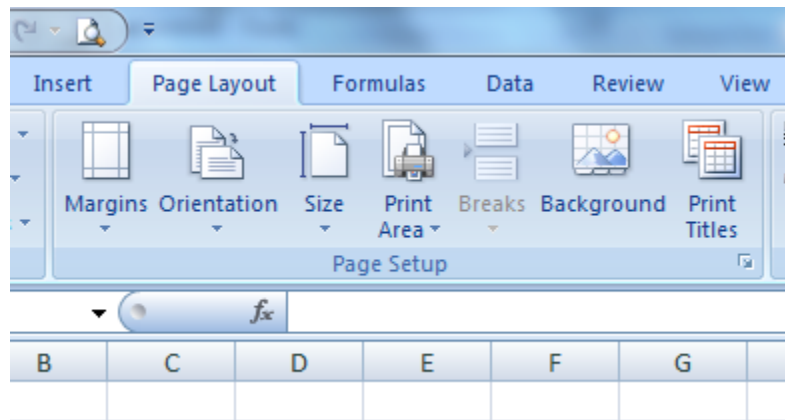
Print:

You can print entire or partial worksheets and workbooks, one at a time, or several at once. And if the data that you want to print is in a Microsoft Excel table, you can print just the Excel table.
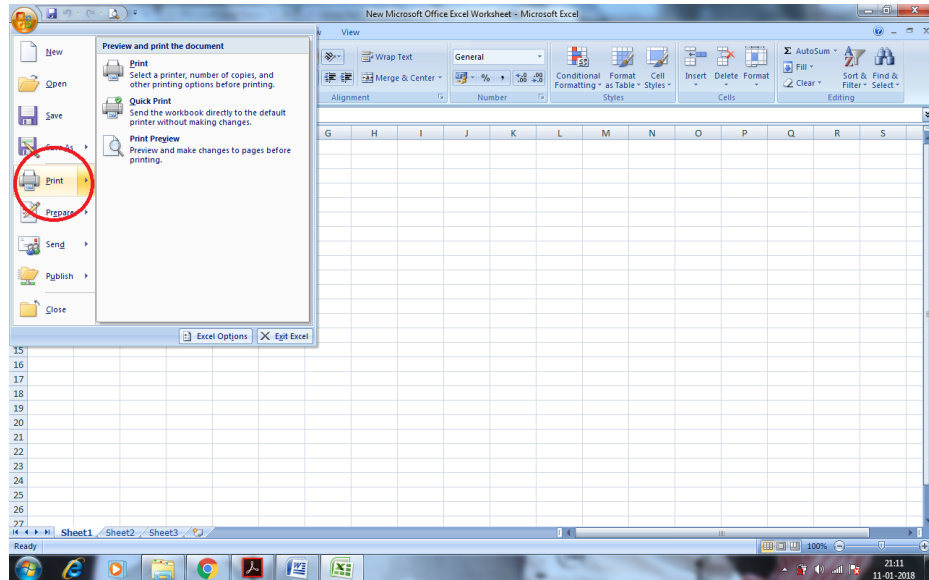

Page Setup:

Page Setup - Sets margins, paper size, orientation and other layout options. Grid lines don't show up when you print?

5.2 Home Menu: Drawing, Find and Replace

Drawing:

That gets activated only after a drawing object is there and you click that and you can draw one by following (Insert > Shapes) You draw one and you will notice Drawing Tools and Format will appear.
Same happens for Pivots, Charts etc. and for them different tabs will appear
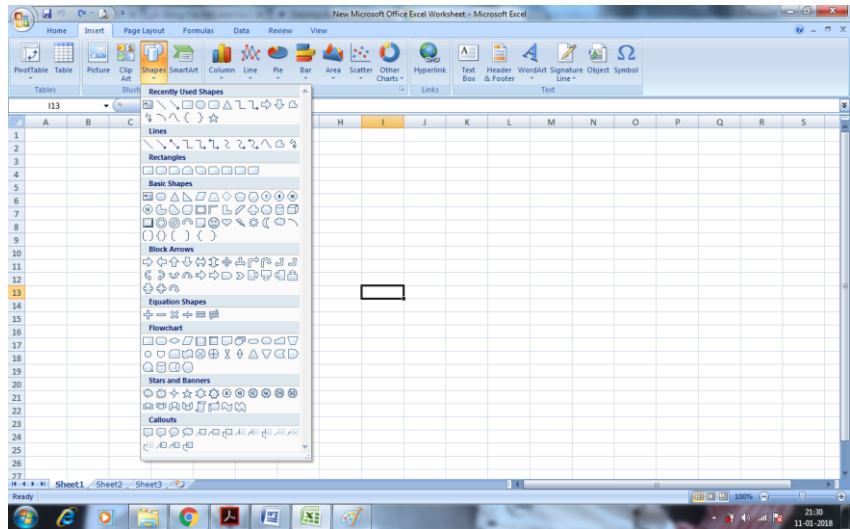
Find and Replace:

Use the Find and Replace features in Excel to search for something in your workbook, such as a particular number or text string. On the Home tab, in the Editing group, click Find & Select. Do one of the following:

• To find text or numbers, click Find.
• To find and replace text or numbers, click Replace
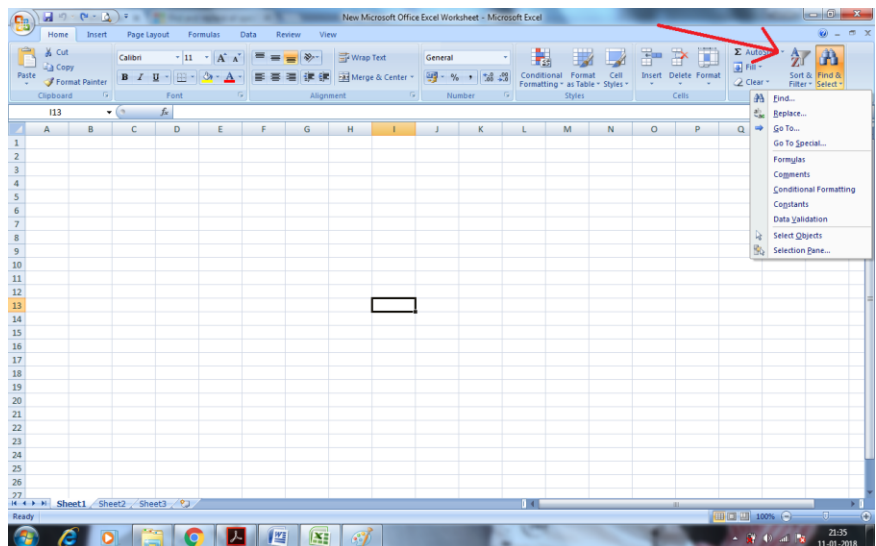
**5.3 Insert Menu: Table, Pictures, Charts, Filter, Hyperlink, Word Art**

Table:

Adding a table to your Excel spreadsheet is a quick and easy way to organize and sort data. Below are the steps on how to insert a table in Microsoft Excel.

1. Open Excel and move to the cell you want to insert the table.
2. Click the **Insert** tab.
3. Click the **Table** button
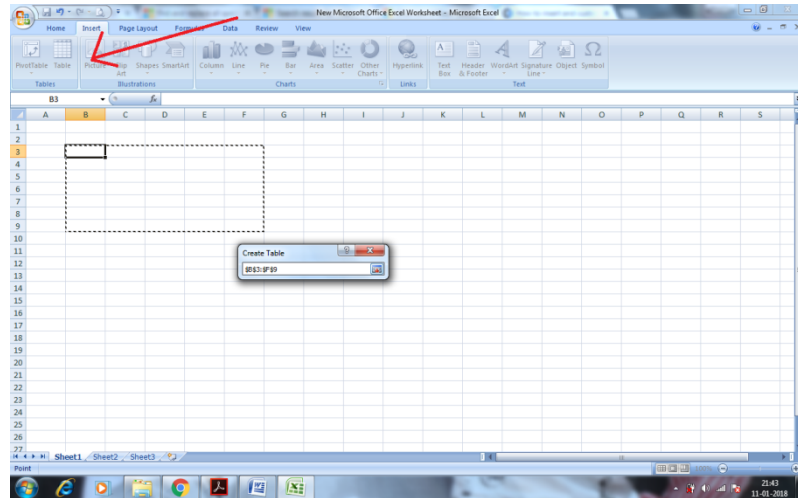
A table typically contains related data in a series of worksheet rows and columns that have been formatted as a table. By using the table features, you can then manage the data in the table rows and columns independently from the data in other rows and columns on the worksheet.
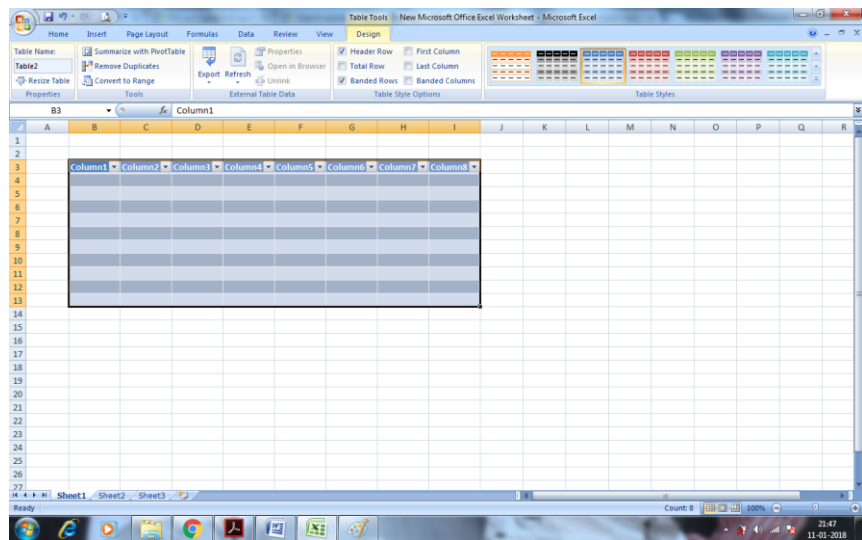
Pictures:

- Go to the Insert tab.
- Click on the Pictures option (it's in the illustrations group).
- In the 'Insert Picture' dialog box, locate the pictures that you want to insert into a cell in Excel.
- Click on the Insert button.
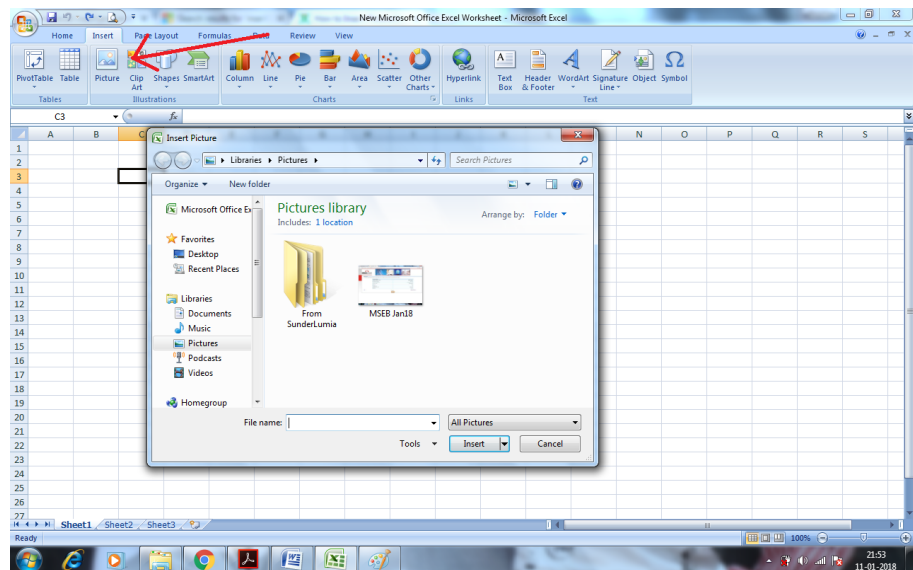
Charts:

Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data and the relationship between different series of data.
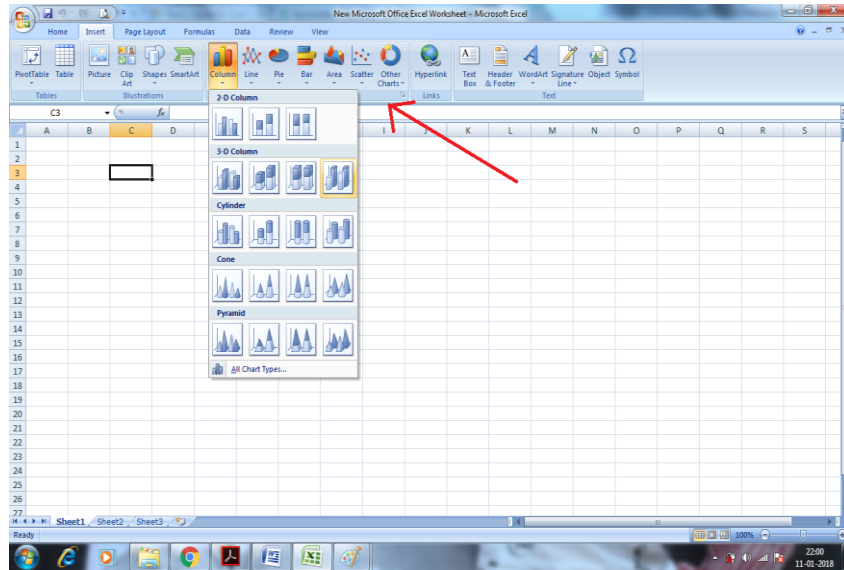
To create a chart in Excel, you start by entering the numeric data for the chart on a worksheet. Then you can plot that data into a chart by selecting the chart type that you want to use on the **Insert** tab, in the **Charts** group.

Insert Chart

Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data and the relationship between different series of data.

To create a chart in Excel, you start by entering the numeric data for the chart on a worksheet. Then you can plot that data into a chart by selecting the chart type that you want to use on the **Insert** tab, in the **Charts**group.

1. Worksheet data
2. Chart created from worksheet data
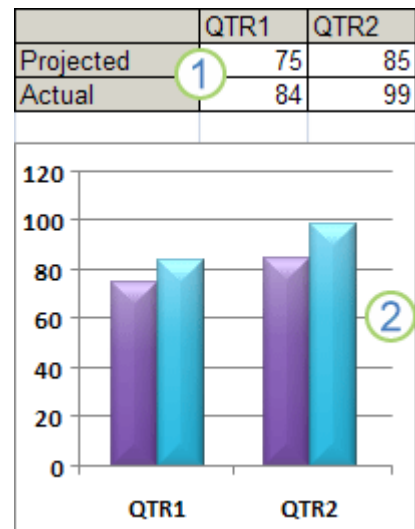
Get to know chart elements

A chart has many elements. Some of these elements are displayed by default, others can be added as needed. You can change the display of the chart elements by moving them to other locations in the chart, resizing them, or by changing the format. You can also remove chart elements that you do not want to display.

1. The chart area of the chart.
2. The plot area of the chart.
3. The data points of the data series that are plotted in the chart.
4. The horizontal (category) and vertical (value) axis along which the data is plotted in the chart.
5. The legend of the chart.
6. A chart and axis title that you can use in the chart.
7. A data label that you can use to identify the details of a data point in a data series.

Create a basic chart

For most charts, such as column and bar charts, you can plot the data that you arrange in rows or columns on a worksheet into a chart. However, some chart types (such as pie and bubble charts) require a specific data arrangement.

1. On the worksheet, arrange the data that you want to plot in a chart.

The data can be arranged in rows or columns — Excel automatically determines the best way to plot the data in the chart. Some chart types (such as pie and bubble charts) require a specific data arrangement.

| Year	Apple	Banana	Orange
2015	750	800	775
2016	725	810	800
2017	75	825	790
	OR		
Fruit	2015	2016	2017
Apple	750	725	75
Banana	800	810	825
Orange	775	800	790

2. Select any cell within the data range that you want to use for the chart.

If you select only one cell, Excel automatically plots all cells that contain data that is adjacent to that cell. If the cells that you want to plot in a chart are not in a continuous range. You can also hide any rows or columns you don't want to plot in the chart.

3. On the **Insert** tab, in the **Charts** group, do one of the following:
   o Click the chart type, and then click a chart subtype that you want to use.
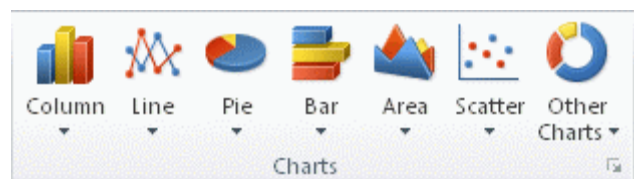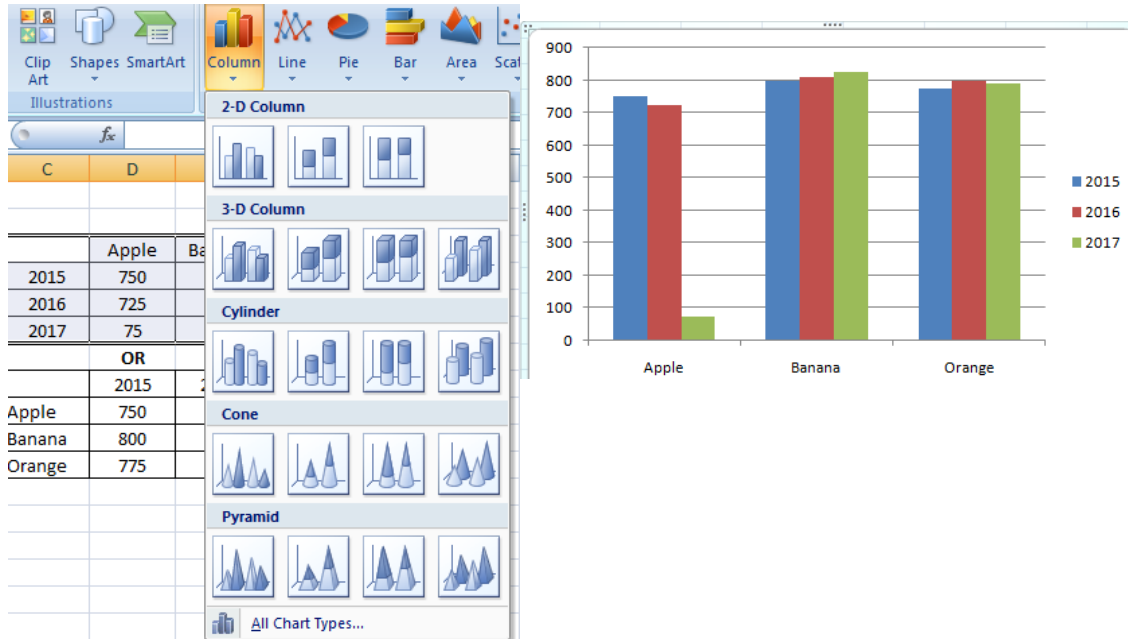
4. By default, the chart is placed on the worksheet as an embedded chart. If you want to place the chart in a separate chart sheet, you can change its location by doing the following:

Click anywhere in the embedded chart to activate it.

This displays the **Chart Tools**, adding the **Design**, **Layout**, and **Format** tabs.

5. Excel automatically assigns a name to the chart, such as **Chart1** if it is the first chart that you create on a worksheet. To change the name of the chart, do the following:
   o Click the chart.
   o On the **Layout** tab, in the **Properties** group, click the **Chart Name** text box.
     If necessary, click the **Properties** icon in the **Properties** group to expand the group.
   o Type a new name.
   o Press ENTER.

Add or remove titles or data labels

To make a chart easier to understand, you can add titles, such as a chart title and axis titles. Axis titles are typically available for all axes that can be displayed in a chart, including depth (series) axes in 3-D charts. Some chart types (such as radar charts) have axes, but they cannot display axis titles. Chart types that do not have axes (such as pie and doughnut charts) cannot display axis titles either.

To quickly identify a data series in a chart, you can add data labels to the data points of the chart. By default, the data labels are linked to values on the worksheet, and they update automatically when changes are made to these values.
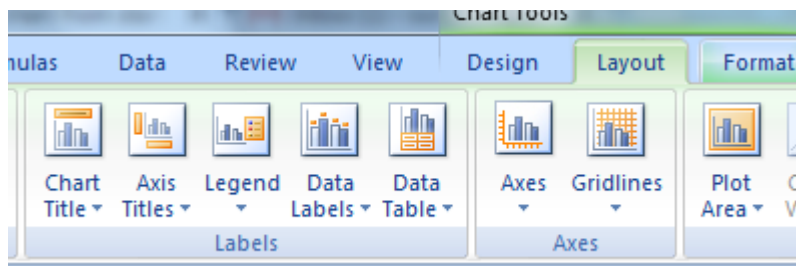
To explain with excel chart

Types of Charts in MS Excel

Let's take a sample and work it out...

	A	B	C	D	E	F
1		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year
2	Flowers	$ 170	$ 240	$ 200	$ 230	$ 840
3	Shrubs	$ 220	$ 280	$ 250	$ 290	$ 1,040
4	Trees	$ 260	$ 340	$ 200	$ 320	$ 1,120

Figure 1: single series of data

|	A	B	C	D	E	F
1		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year
2	Flowers	$ 170	$ 240	$ 200	$ 230	$ 840
3	Shrubs	$ 220	$ 280	$ 250	$ 290	$ 1,040
4	Trees	$ 260	$ 340	$ 200	$ 320	$ 1,120

Figure 2: multiple series of data

All chart types can plot both single and multiple data series **except the Pie Chart**.

The Pie Chart
A Pie Chart can only display one series of data. Excel uses the series identifier as the chart title (e.g. Flowers) and displays the values for that series as proportional slices of a pie. If we had selected multiple series of data, Excel would ignore all but the first series.
There are sub-types of the Pie Chart available. The second chart above is the Pie in 3-D and the third chart is an Exploded Pie Chart; an Exploded Pie in 3-D is also available.
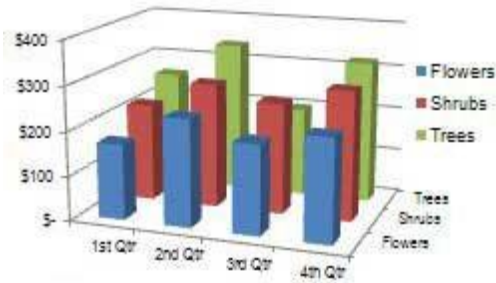
Regular	Pie in 3-D	Exploded Pie Chart
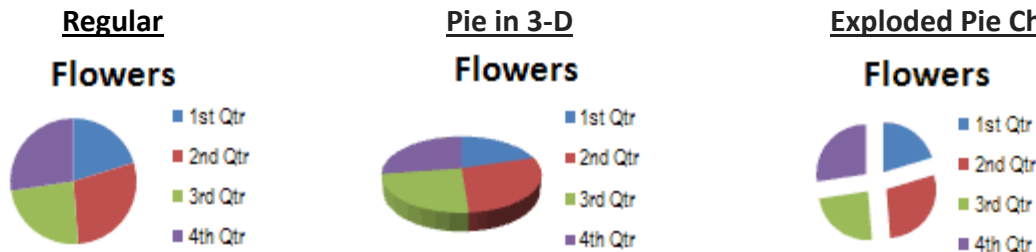
The Column Chart
The Column Chart very effectively shows the comparison of one or more series of data points. But the Clustered Column Chart is especially useful in comparing multiple data series.
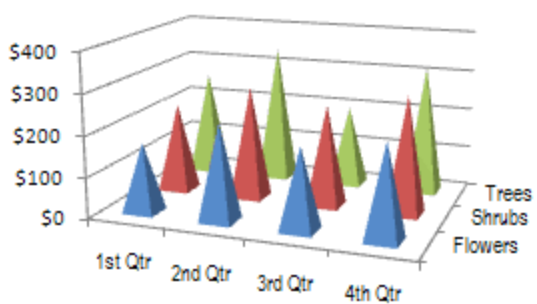
Clustered	Stacked
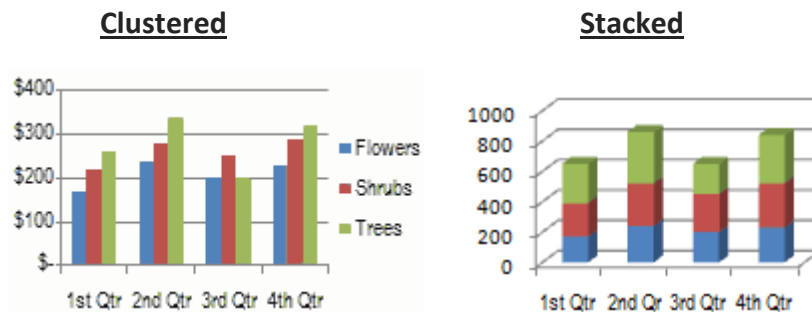
3D Column
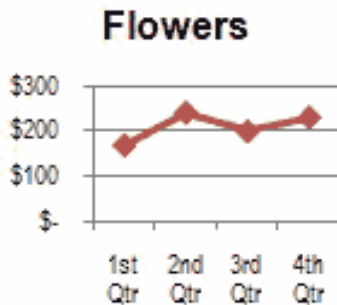

All images © Copyright Keynote Support

3D Pyramid

The Line Chart

The Line Chart is especially effective in displaying trends. In a Line Chart, the vertical axis (Y-axis) always displays numeric values and the horizontal axis (X-axis) displays time or other category.
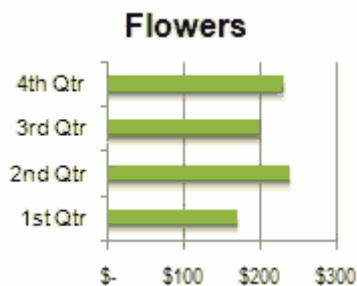
Line chart with marker
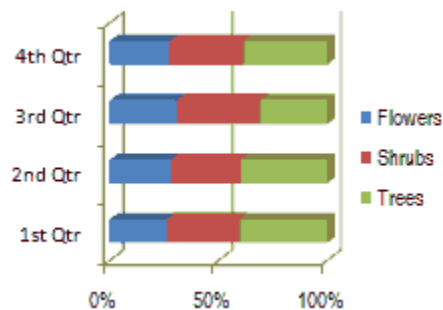

Line chart without marker

The Bar Chart

The Bar Chart is like a Column Chart lying on its side. The horizontal axis of a Bar Chart contains the numeric values. The first chart below is the Bar Chart for our single series, Flowers.
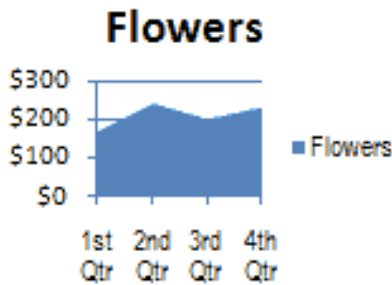
Stocked Bar

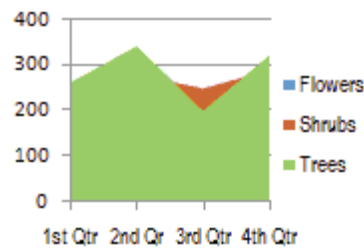**100% Stacked Bar (can compare % difference)**

The Area Chart

Area Charts are like Line Charts except that the area below the plot line is solid. And like Line Charts, Area Charts are used primarily to show trends over time or other category.
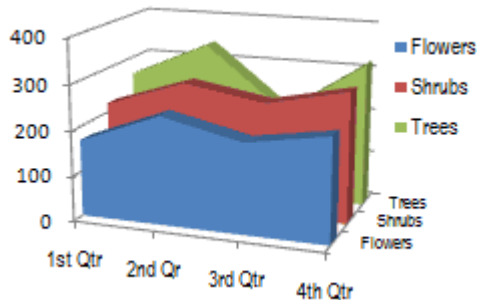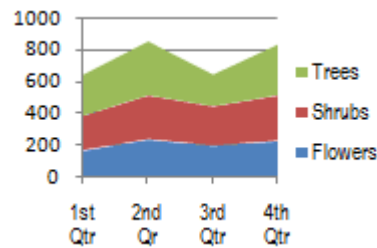
Area Chart (single series)

Area Chart (multiple series)

3D Area Chart


Stacked Area Chart

The Scatter Chart

The purpose of a Scatter Chart is to observe how the values of two series compare over time or other category. To illustrate the Scatter Chart, we will extend the use of the worksheet values shown below:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2	Flowers	$100	$200	$300	$500	$600	$700	$550	$475	$700	$500	$350	$400
3	Shrubs	$200	$250	$400	$600	$700	$760	$650	$550	$775	$600	$275	$200

Scatter chart with only markers
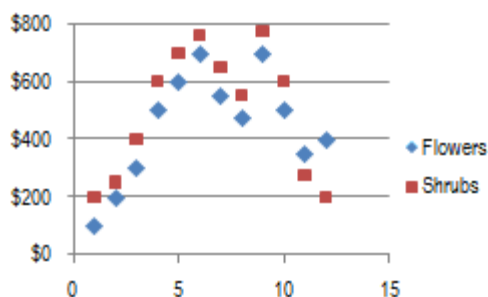
Scatter chart with smooth lines and no markers
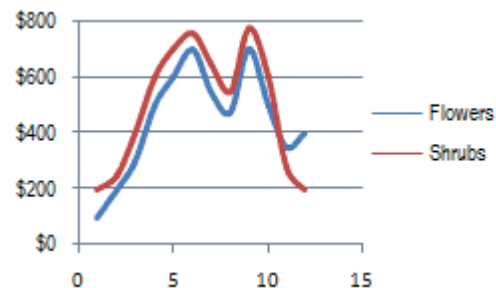
Doughnut Chart

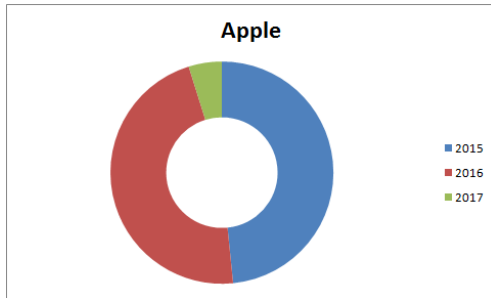A Doughnut chart shows the relationship of parts to a whole. It is similar to a Pie Chart with the only difference that a Doughnut Chart can contain more than one data series, whereas, a Pie Chart can contain only one data series.

Doughnut (Single Series)

Doughnut (Multiple Series)
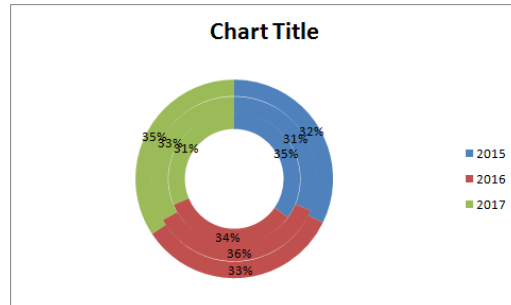
Doughnut exploded view

Bubble Chart

A Bubble chart is like a Scatter chart with an additional third column to specify the size of the bubbles it shows to represent the data points in the data series.
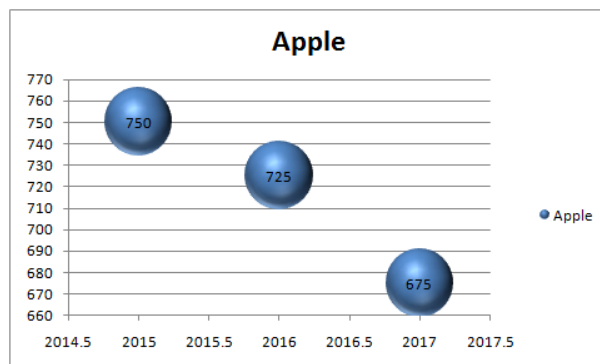
Filter:

By filtering information in a worksheet, you can find values quickly. You can filter on one or more columns of data. With filtering, you can contro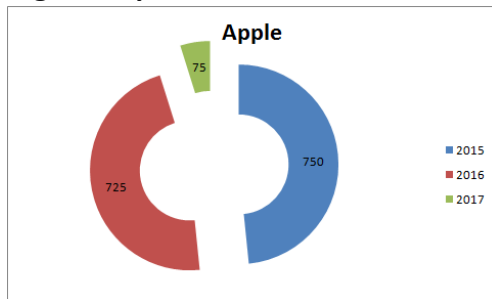l not only what you want to see, but what you want to exclude. You can filter based on choices you make from a list, or you can create specific filters to focus on exactly the data that you want to see.
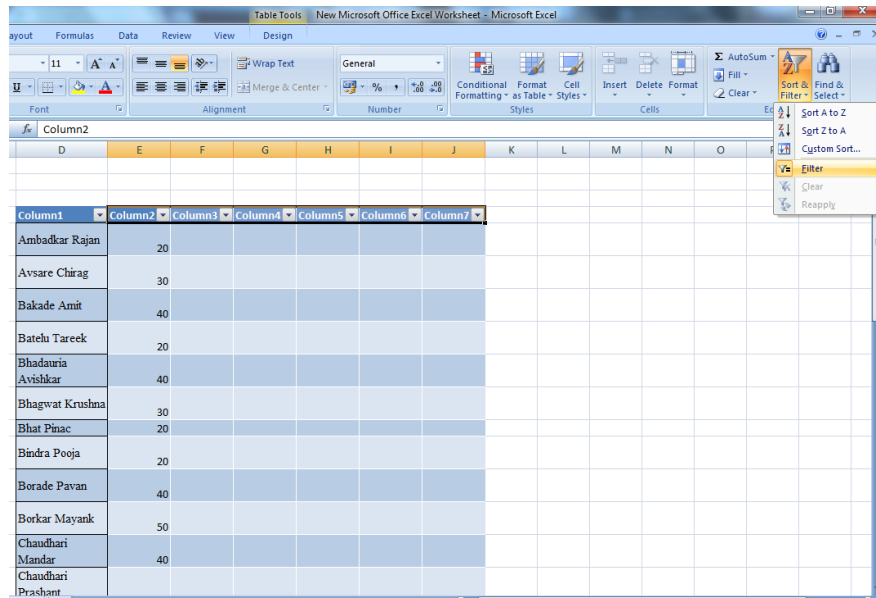
When you filter data, entire rows are hidden if values in one or more columns don't meet the filtering criteria. You can filter on numeric or text values, or filter by color for cells that have color formatting applied to their background or text.
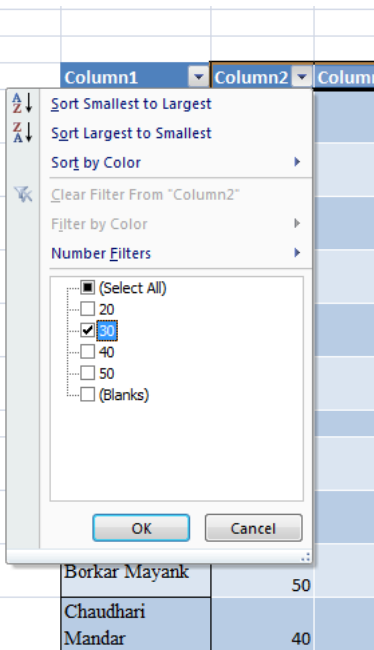
Hyperlink:

The hyperlink function creates a shortcut that jumps to another location in the current workbook, or opens a document stored on a network server, an intranet, or the Internet. When you click a cell that contains a hyperlink function, Excel jumps to the location listed, or opens the document you specified.
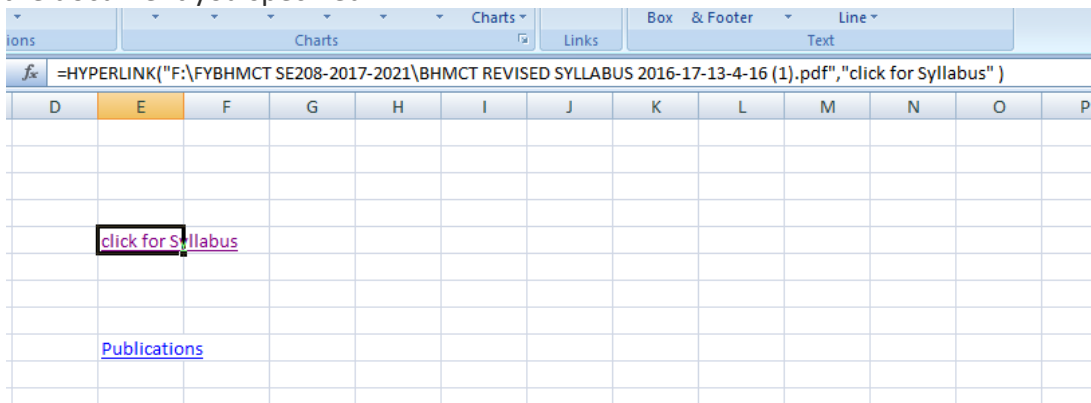
Above link shows a shortcut to F drive \ Folder Name\ File Name followed by shortcut name
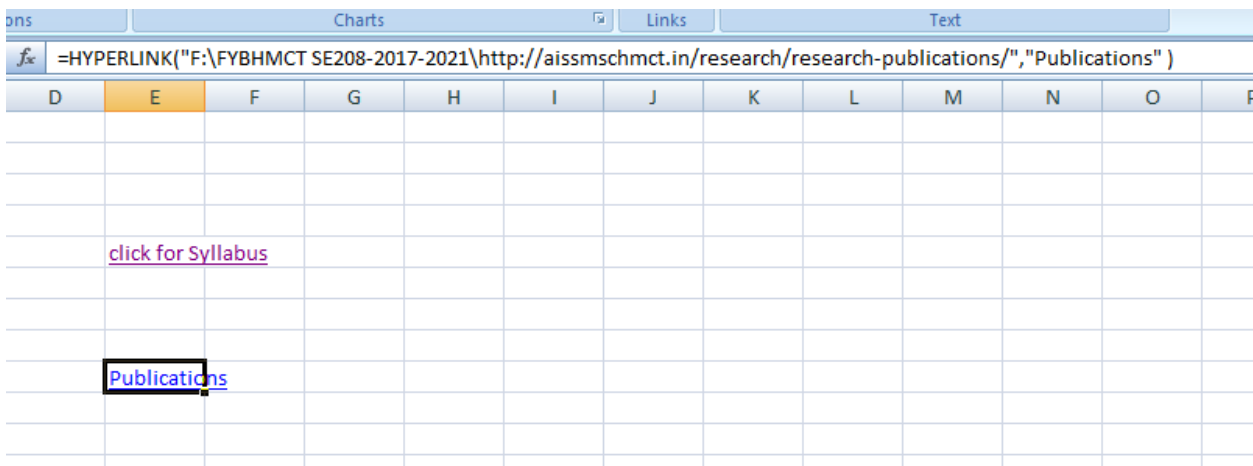
Above link shows a shortcut to Website Link followed by shortcut name
Sample Video

Word Art:

WordArt is a quick way to make text stand out with special effects. You pick a WordArt style from the WordArt gallery, launched from the **Insert** tab, which you can then customize.
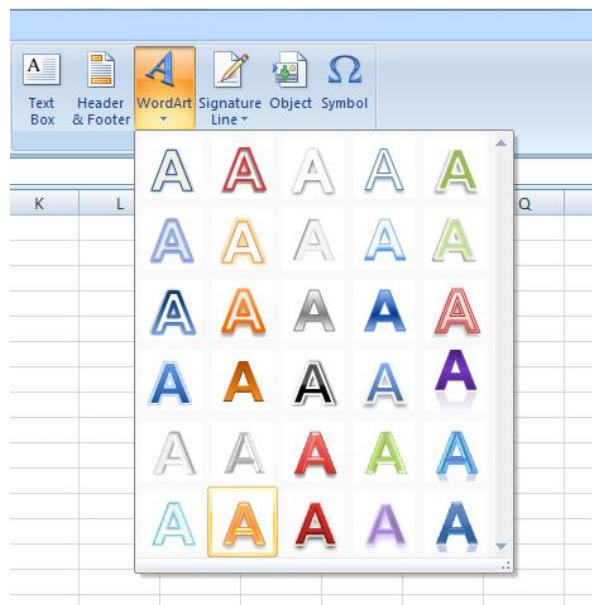
Format option opens after selection is made
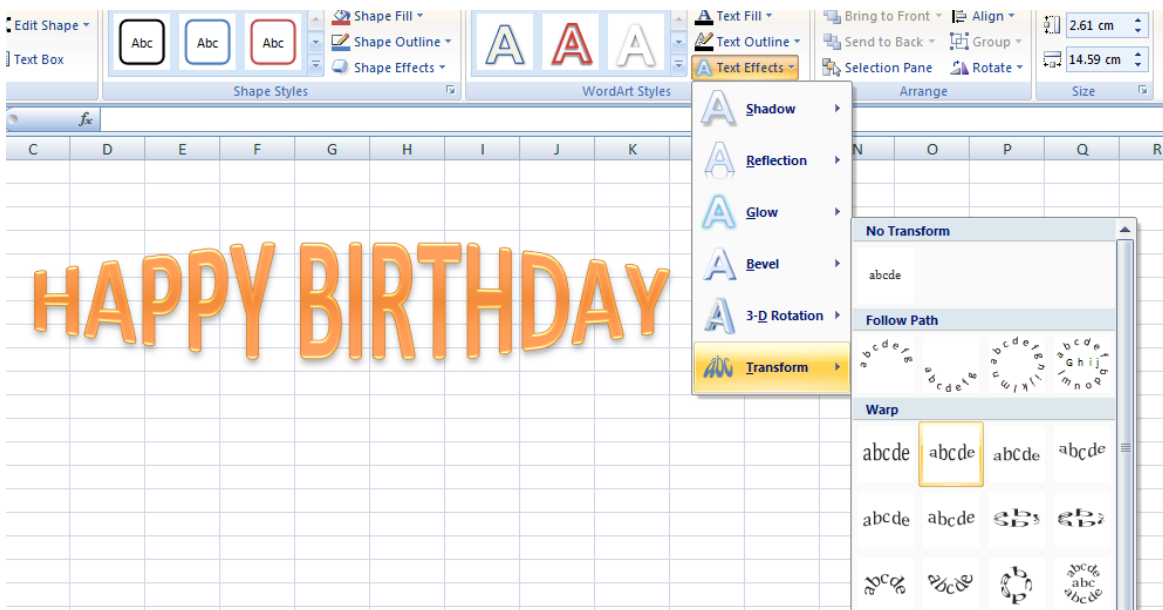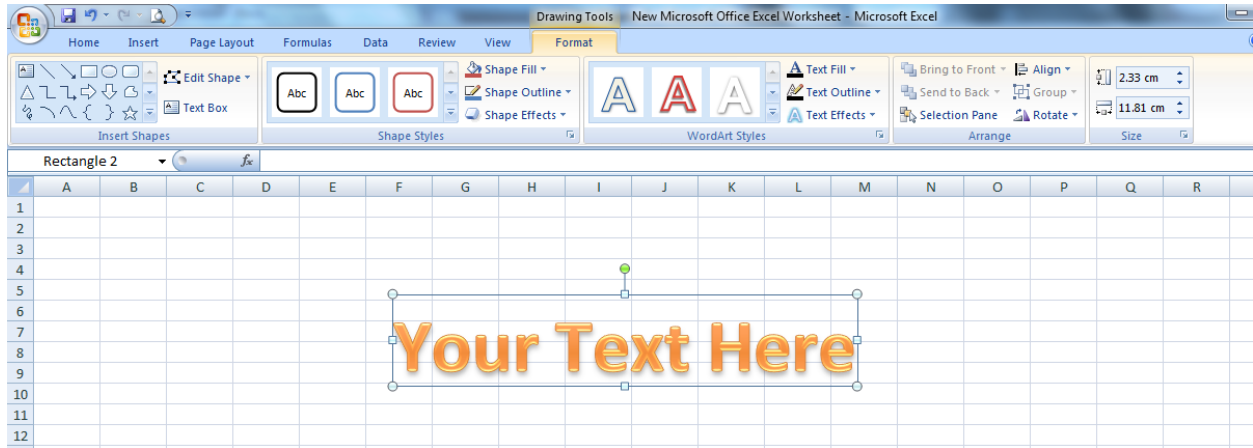
5.4 Page Layout Menu: Print area, Cell Width, Height, Scale
Print Area
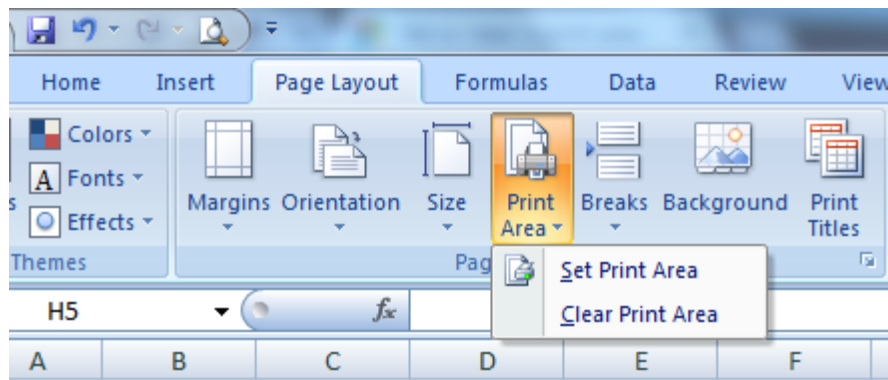
If you print a specific selection on a worksheet frequently, you can define a print area that includes just that selection. A print area is one or more ranges of cells that you designate to print when you don't want to print the entire worksheet. When you print a worksheet after defining a print area, only the print area is printed. You can add cells to expand the print area as

needed, and you can clear the print area to print the entire worksheet. A worksheet can have multiple print areas. Each print area will print as a separate page.
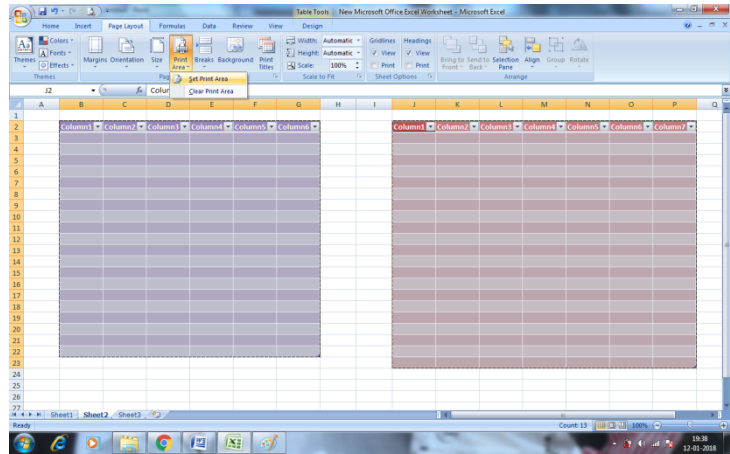
Cell Width

On a worksheet, you can specify a column width of 0 (zero) to 255. This value represents the number of characters that can be displayed in a cell that is formatted with the standard font. The default column width is 8.43 characters

You can specify a row height of 0 (zero) to 409. This value represents the height measurement in points. The default row height is 12.75 points (approximately 1/6 inch or 0.4 cm).
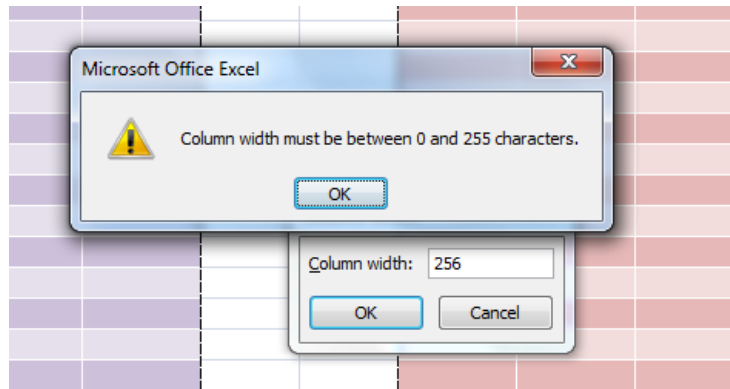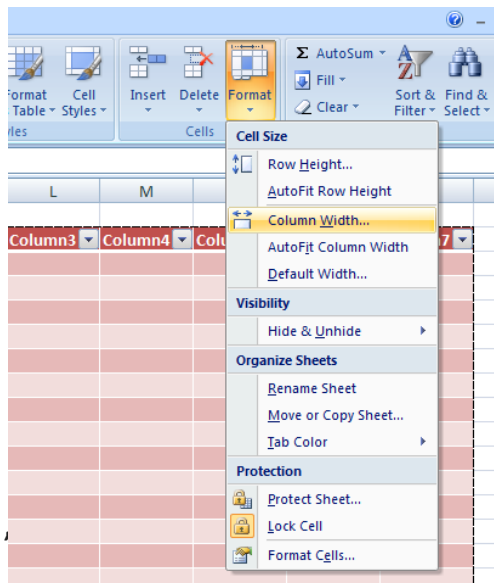
5.5 Formulas Menu: Insert function, AUTOSUM, AVG, PER, MAX, MIN, COUNT, IF, Date & Time, Round

Insert function

Being primarily designed as a spreadsheet program, Microsoft Excel is extremely powerful and versatile when it comes to calculating numbers or solving math and engineering problems. It enables you to total or average a column of numbers in the blink of an eye. Apart from that, you can compute a compound interest and weighted average, get the optimal budget for your events, etc.

AUTOSUM

If you need to sum a column or row of numbers, let Excel do the math for you. Select a cell next to the numbers you want to sum, click AutoSum on the Home tab, press Enter, and you're done. When you click AutoSum, Excel automatically enters a formula (that uses the SUM function) to sum the numbers.
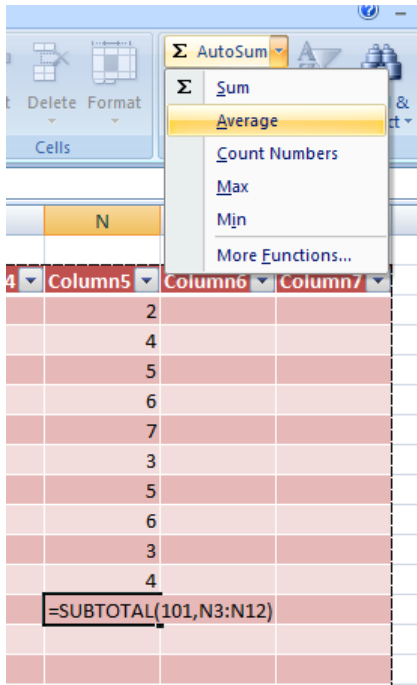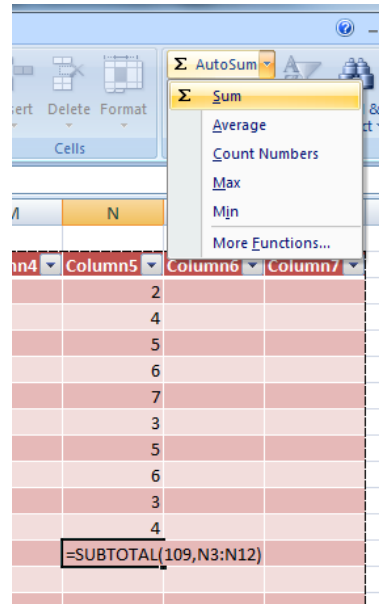
AVG

The AVERAGE function measures central tendency, which is the location of the center of a group of numbers in a statistical distribution. The three most common measures of central tendency are: Average, which is the arithmetic mean, and is calculated by adding a group of numbers and then dividing by the count of those numbers.

PER (Percentile)

To show a number as a percent in Excel, you need to apply the percentage number format. To apply this format, select the cells that need formatting, and then click the **Percent Style** button in the **Number** group on the ribbon's **Home** tab. Of course, it's even faster to use the keyboard shortcut for applying the format, which is Ctrl + Shift + %.

PERCENTILE			f_x =(E2/3)/100			
A	B	C	D	E	F	G
	A	B	C	total	Percentage	
	83	75	70	228	=(E2/3)/100	
	75	80	79	234		
	78	86	76	240		
	80	75	68	223		

MAX
To find the highest value in a range of cells, use the MAX function.

MIN

To find the lowest value in a range of cells, use the MIN function.

A	B	C	total	Percentage
83	75	70	228	76.00%
75	80	79	234	78.00%
78	86	76	240	80.00%
80	75	68	223	74.33%
			223	74.33%

COUNT

Use the COUNT function to get the number of entries in a number field that is in a range or array of numbers. For example, you can enter the following formula to count the numbers in the range A1:A20: =COUNT(A1:A20).

C	total	Percentage
70	228	76.00%
79	234	78.00%
76	240	80.00%
68	223	74.33%
76		
87		
76		
7		

IF

The IF function is one of the most popular functions in Excel, and it allows you to make logical comparisons between a value and what you expect. In its simplest form, the IF function says:

❖ **IF(Something is True, then do something, otherwise do something else)**

So an IF statement can have two results; The first result is if your comparison is True, the second if your comparison is False.

H7			*fx*	=IF(G7>=80%,"A+",IF(G7>=78%,"A",IF(G7>=75%,"B+",IF(G7<75%,"Fail"))))			

A		B	C	total	Percentage	
83	A+	75	70	228	76.00%	B+
75	B+	80	79	234	78.00%	A
78	A	86	76	240	80.00%	A+
80	A+	75	68	223	74.33%	Fail
			76			
			87			
			76			

Date & Time

To enter a date in Excel, use the "/" or "-" characters; To enter a time, use the ":" (colon). You can also enter a date and a time in one cell.

	A	B	C	D	E
A1			fx	6/23/2016	
1	6/23/2016	6:00	6/23/2016 6:00		
2					

Note: Dates are in US Format; Months first, Days second. This type of format depends on your windows regional settings.

Year, Month, Day
To get the year of a date, use the YEAR function.

	A	B	C	D	E
B1			fx	=YEAR(A1)	
1	6/23/2016	2016			
2					

Note: use the MONTH and DAY function to get the month and day of a date.

Date Function
1. To add a number of days to a date, use the following simple formula.

	A	B	C	D	E
B1			fx	=A1+5	
1	6/23/2016	6/28/2016			
2					

2. To add a number of years, months and/or days, use the DATE function.

	A	B	C	D	E	F	G	H	I
B1			fx	=DATE(YEAR(A1)+4,MONTH(A1)+2,DAY(A1)+9)					
1	6/23/2016	9/1/2020							
2									

Note: the DATE function accepts three arguments: year, month and day. Excel knows that 6 + 2 = 8 = August has 31 days and rolls over to the next month (23 August + 9 days = 1 September).
Current Date & Time

To get the **current** date **and** time, use the NOW function.

A1	▼	⋮	✕	✓	*fx*	=NOW()	
	A		B	C	D	E	
1	2/23/2017 10:43						
2							

Note: use the TODAY function to get the current date only. Use NOW()-TODAY() to get the current time only (and apply a Time format).

Hour, Minute, Second

To return the hour, use the HOUR function.

B1	▼	⋮	✕	✓	*fx*	=HOUR(A1)	
	A		B	C	D	E	
1	6:45:17		6				
2							

Note: use the MINUTE and SECOND function to return the minute and second.
Time Function

To add a number of hours, minutes and/or seconds, use the TIME function.

B1	▼	⋮	✕	✓	*fx*	=TIME(HOUR(A1)+2,MINUTE(A1)+10,SECOND(A1)+70)			
	A		B	C	D	E	F	G	H	I
1	6:45:17		8:56:27							
2										

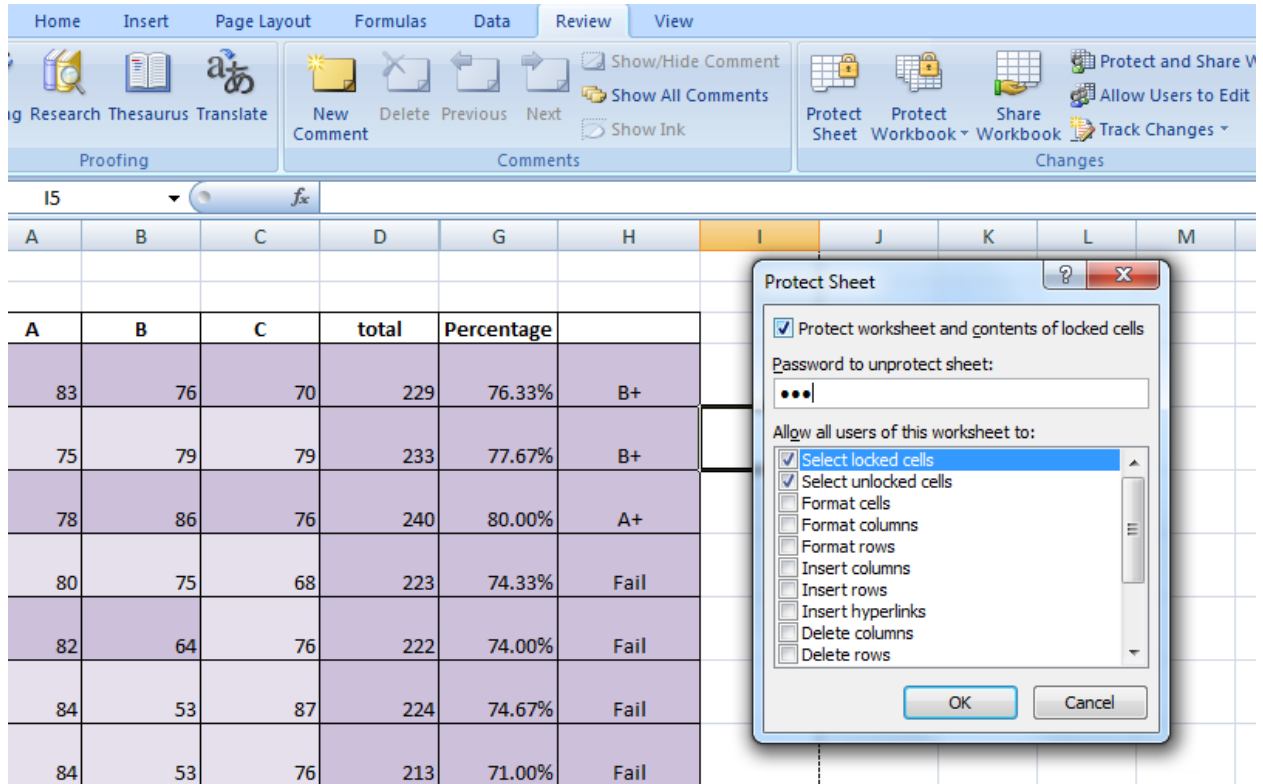Note: Excel adds 2 hours, 10 + 1 = 11 minutes and 70 - 60 = 10 seconds.

Round

Round works by rounding numbers 1-4 down, and rounding numbers 5-9 up. The ROUND function rounds numbers to a specified level of precision. It can round to the right or left of the decimal point. If num_digits > 0, number is rounded to the specified number of decimal places to the right of the decimal point.

	=ROUND(E4,2)			
	D	E	F	G
	total			Percentage
	229	3.333333	=ROUND(E4,2)	
	233	40.8333	40.83	77.67%
	240	54.7555	54.76	80.00%
	223	111.50	112.00	74.33%
		54.57	55.00	
		54.45	54.00	

5.6 Review Menu: Protect sheet

To prevent other users from accidentally or deliberately changing, moving, or deleting data in a worksheet, you can lock the cells on your Excel worksheet and then protect the sheet with a password. Say you own the team status report worksheet, where you want team members to add data in specific cells only and not be able to modify anything else. With worksheet protection, you can make only certain parts of the sheet editable and users will not be able to modify data in any other region in the sheet.