Excel Chart
In Excel, you can create *embedded charts* or *chart sheets*. *Embedded chart* exists as an object on the same worksheet with the plotted data. *Chart sheet* exists on a separate sheet in the workbook.

Since all charts are linked to the data they plot, the chart changes with any changes made in the plotted data. Also, *hidden columns or rows are not shown on the chart by default*. This can be changed by unchecking the “Plot visible cells only” option on the **Chart** tab under **Tools > Options**.

Chart Items
This is a bar chart with two data series (MAC and PC).
Using the Chart Wizard
Excel charts can be easily created with the Chart Wizard. Highlight the data that needs to be plotted (including the series and category labels). Then, click on the Chart Wizard button OR go to Insert > Chart.

Step 1: Selecting Chart Type
- Select the desired chart type under the Standard Types tab.
- Some commonly used charts and their usage are described below:
  - **Column** – To show data changes over a period of time or to illustrate comparisons among items. Categories are organized horizontally, and values vertically.
  - **Bar** – Similar to Column chart, but categories are organized vertically, values horizontally.
  - **Line** – To show trends in data at equal intervals.
  - **Pie** – To show the proportional size of items that make up a data series to the sum of the items. It shows ONLY ONE data series.
  - **XY (Scatter)** – To show the relationships among the numeric values in several data series. This chart shows uneven intervals (or clusters) of data.
Step 2: Defining Chart Source Data

- Under the **Data Range** tab, series are plotted **in rows** (expense category) by default (left). It can be changed to plot the series **in columns** (months) if desired (right).

**NOTE:** Data range with non-adjacent cells can be selected by holding the *Ctrl* key.

- Under the **Series** tab, **data series** can be added or removed. **Data series** is a group of related data points that are plotted in a chart. Each data series in a chart has a different color or pattern, and is represented in the chart legend.

Series name and values for the selected series on the left

Category axis labels, shared among all data series
Step 3: Selecting Chart Options

Some standard options for the selected chart type can be modified:
1. Title
2. Axes
3. Gridlines
4. Legend
5. Data Labels
6. Data Tables

Step 4: Selecting Chart Location

Select the worksheet you want the chart to be on

NOTE: The above steps can be re-visited by a right-click on the chart (or plot) area
Adding Data to the Chart

- Under Chart > Add Data, specify the range and check the desired options
- By using color-coded ranges (for embedded chart only)

1. Enter the new data adjacent to the existing one (Jun-03)
2. Select the chart area to display the color-coded ranges
3. Drag the appropriate color-coded handle to include the new data (The cursor will change from + to +)

Drag the purple handle to include the Jun-03 column

New data range included
Selecting Chart Items
Before formatting a chart item, it has to be selected by one of the following methods:
1. To display the name (and value) of a chart item, rest the pointer over it. Left-click on the chart item to select it.
2. On the Chart toolbar (turned on from View > Toolbars > Chart) in the Chart Objects box, choose the desired chart item.

Formatting Chart Items
After a chart has been created, the chart area, chart title, axis values and titles, legend, plot area, each data series or even individual data points can be formatted:
1. Double-click on the chart item to open the Format window
2. a) Select the chart item
   b) Right click, choose Format XXX
      (OR Go to Format > Selected XXX)

Most chart items have Patterns (including Border & Area) and/or Font formatting. Under the Font tab, the option for auto-scaling font size with the chart size is available. The following items have other special option:
- Formatting Chart Area
  - Object positioning: Setting the preference for the embedded chart under the Properties tab.
  - Background pattern: Select the area color or get further Fill Effects options under the Patterns tab.

There are 4 Fill Effect options:
1. Gradient
2. Texture
3. Pattern
4. Picture
• **Formatting Axis** –
  - formatting the tick marks (*Patterns* tab)
  - setting the orientation of axis labels (*Alignment* tab)
  - Setting maximum/minimum value, major/minor units on the axis, and specifying where the y-axis crosses with the x-axis (*Scale* tab)
  - Switching the axis to logarithmic scale, putting the values on the axis in reverse order, or making the X-axis cross at the maximum y-value (*Scale* tab)
  - selecting the option for linking the number formatting of the axis values to that on the worksheet (*Number* tab)
- **Formatting Data series** -
  - Formatting the line and markers *(Patterns tab)*
  - Setting a secondary axis for one or more data series *(Axis tab)*
  - Adding and formatting X and/or Y error bars *(Error Bar tab)*
  - Selecting the option for displaying value and labels on each data point *(Data Labels tab)*

- Changing the series order displayed in the legend *(Series Order tab)*
- Setting the gap width and the amount of overlap categories *(Option tab)*

1. Select the display type
2. Specify the error amount
3. 1. Highlight the series you want to move
    2. Click the “Move Up” / “Move Down” button
4. Set the amount of overlap within each category
5. Set the gap width among categories
**Inserting and Formatting Trendlines**

*Trendlines can be added to any data series in the unstacked 2-D area, bar, column, line, stock, xy (scatter), or bubble charts.*

To add a trendline:
1. Select a data series
2. Right-click on the series and select Add Trendline OR go to Chart > Add trendline

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Once the trendline is inserted, the Format Trendline dialog box can be brought up by double-clicking on the trendline.