Excel 2016: Charts and Graphs

Goal: Learn about design, layout, formatting, and exporting a chart.

What is the difference between a chart and a graph?
For this class, the two terms are interchangeable.

- A chart is a graphic representation of data, where a line chart is one form.
- The term "chart" and the term "graph" are often used interchangeably, in Excel, we use the term "chart", officially and formally.

Select Data and Create Chart

1. Click on the Insert tab
2. Let's select the source data that we want to depict graphically. Click on the upper left corner of the data. Do one:
   - Press and hold the SHIFT key, then click on the lower right corner of the data.
   - Hold the mouse down after clicking on one corner and drag cursor to opposite corner
   Do NOT select the totals
4. Click on Recommended Charts. In this case, we'll use the Clustered Column chart.
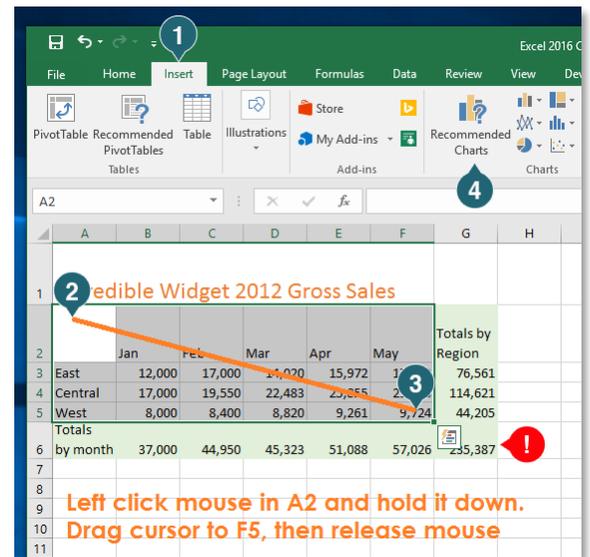
Modify Chart Elements

1. Click on the plus sign and see all the major elements that can be modified. Check / uncheck the boxes to see what happens
2. Click on "Chart Title" and a blue-circle bounding box appears. Erase "Chart Title" and type in your own words.
3. Anything that has open circles on its edge can be resized by clicking & dragging a circle. Try to resize using a corner circle vs a side or bottom circle.
4. The Format Chart Area gives even more options, such as borders, background images, and alternative text to assist visually impaired readers.

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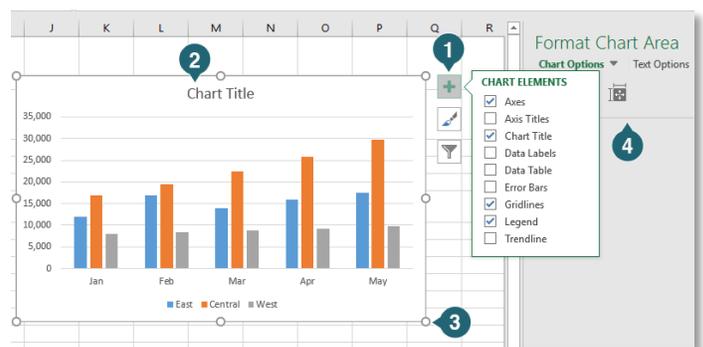
Chart Tools tabs

Click anywhere on the chart and the Chart Tools appear. Click anywhere but the chart and the Chart Tools disappear.

1. From the Design Tab, click on Change Colors, mouse over any color combination and watch what happens to the chart. Click on your favorite.
2. Click on the Chart Styles down arrow, mouse over any style and see those changes. Click on your favorite.

3. Another method to change each element or series one-by-one is to right click on it. Point your mouse to one bar, right click the mouse. In the pop-up menu, click on the paint-bucket Fill icon. Now select a different color.
   Right click on the Chart Title, select Font, change the Font family and size.
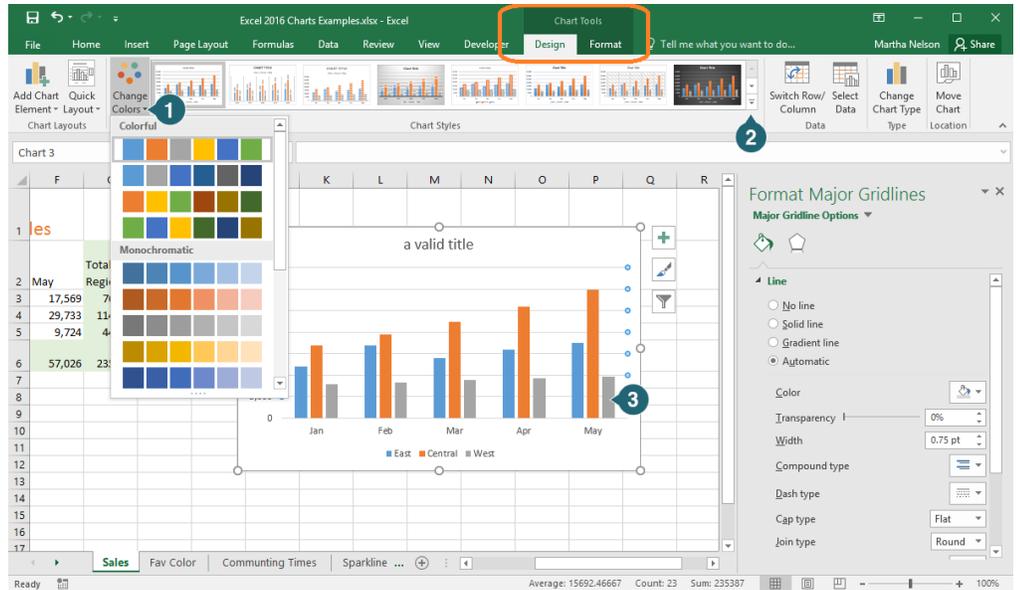
Common types of charts:

- **A Line Chart** are ideal for showing trends. The data points are connected with lines, making it easy to see whether values are increasing or decreasing over time.
- **Pie Chart** make it easy to compare proportions. Each value is shown as a slice of the pie, so it's easy to see which values make up the percentage of a whole. Pie Charts work best if you have only a single column or row of data and when the data is all positive.
- **Column charts are vertical.** Column charts use vertical bars to represent data. They can work with many different types of data, but they're most frequently used for comparing information.
- **Bar Chart** work just like column charts, but they use horizontal bars instead of vertical bars.
  - **Stacking** means you are putting multiple fields together
  - **Clustered** means the fields are side by side,
- **Area charts** are similar to line charts, except the areas under the lines are filled in.
- **Surface charts** allow you to display data across a 3D landscape. They work best with large data sets, allowing you to see a variety of information at the same time.

Parts of a chart (all are modifiable):
- Chart Title
- Vertical Axis - also known as the y axis
- Horizontal Axis - also known as the x axis
- Data Series - related data points in a chart
- Legend - identifies which data series each color on the chart represents.
- Chart area -outside border, axis, title, legend
- Plot area - where the data is represented
- Data Label to identify the details of a data point in a data series.

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Notes about data:
There is a live link between the numeric and text pieces of data to the graph.
Change a piece of data, the graph changes.
Sort the data, the graph changes

Copy Excel charts to Word

MicroSoft online documentation: https://tinyurl.com/yc56dkw3

In Excel, select the embedded chart or chart sheet that you want to copy to a Word document.

1. On the Home tab, in the Clipboard group, click Copy.
   Keyboard shortcut: <ctrl+c>
1. In the Word document, click where you want to paste the copied chart.
2. On the Home tab in Word, in the Clipboard group, click Paste.
   Keyboard shortcut: <ctrl v>
3. Click Paste Options next to the chart, and then do one of the following:
   o To paste the chart with a link to its source data, click Chart (linked to Excel data).
   o To paste the chart and to include access to the entire workbook in the document, click Excel Chart (entire workbook).
   o To paste the chart as a static picture, click **Paste as Picture**.
   o To paste the chart in its original format, click Keep Source Formatting.
   o To paste the chart and format it by using the document theme that is applied to the document, click Use Destination Theme.
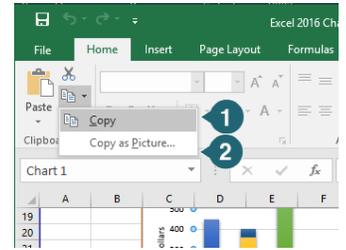
Keep in mind: do you want the graph to be static? Treat your graph as a picture. Do you want it to change every time the data changes? Then keep it as a live link.Sparklines

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Sparklines are a one-cell graph that gives a graphic glimpse of the data.

Select the data, usually a horizontal selection of cells, and see the **Quick Analysis** button pop-up. Click it and then click Sparklines.

Click on one of the three kinds of Sparklines.
- Line,
- Column
- Win/Loss

After choosing a Sparkline, the Sparkline Tools ribbon and a Design Tab, comes up. Options: different line weight, color, high / low points.

Use Zoom slider bar (bottom right corner of Excel) to see the cells better.

The default for a Sparkline is to fit to the right of the data, so here's how to do one at the bottom of the data: We've got our data selected, **Insert tab** > **Sparklines** > **Line**. A pop-up window asks, where do we want the sparklines to be placed? Click in cell where you want it placed and click OK

Awesome data sources:

http://www.statista.com/statistics/268348/us-citizens-favorite-ice-cream-flavors/
https://en.wikipedia.org/wiki/List_of_U.S._states_and_territories_by_population
http://www.indexmundi.com/facts/united-states/quick-facts/illinois/average-commute-time#table
http://data.bls.gov/cgi-bin/surveymost

More about Excel:

Lynda.com through the Library's website (free!)

Goodwill Community Foundation: https://edu.gcfglobal.org/en/excel2016/charts/1/

Excel Jet: https://exceljet.net/lessons/recommended-charts

http://ptgmedia.pearsoncmg.com/images/9780789748621/samplepages/0789748622.pdf

http://www.statisticshowto.com/what-is-a-bar-chart/ ←---

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