Using Excel to Analyze Your Data
PITTSBURGH DATA JAM

1. Compiling a table with your data

Starting a table in excel is easy. Say you want to see how the unemployment rate in Pittsburgh compares to Philadelphia over the past 12 months.

- **Establish independent and dependent variables**

    Independent variable: <u>time</u> (January - December) – **format as columns**

    Dependent variable: <u>unemployment rate</u> (in Pittsburgh and Philadelphia) – **format as rows**

- **Fill in data**, one number in each box

Independent variable will become column

Dependent variable

city	january	february	march	april	may	june	july	august	september	october	november	december
Pittsburgh	5.50%	3.20%	5.10%	4.48%	3.95%	3.22%	2.98%	3.30%	3.43%	4.81%	5.21%	4.21%
Philadelphia	6.49%	6.32%	5.92%	6.12%	5.00%	5.83%	5.39%	5.23%	5.43%	5.89%	6.00%	5.92%

2. Graphing my data

Make graphs (of different types) to see what your data looks like.

- Highlight your entire data set

- Go to the 'Insert' tab at the top of the page and chose from bar, scatter, line, pie, and other graphs. Excel will automatically format your graph according to your table format.
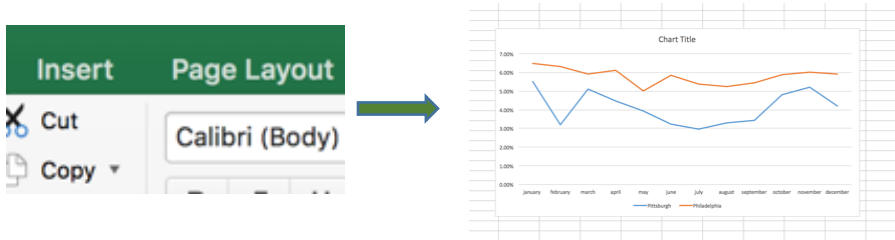
You can customize how the graph looks.

- Left click the graph. On the drop down menu, pick "Select Data."

- A window, like the one to the right, should appear. This window shows all the data being presented in the graph. From this menu you can manually select data and change series names.

3. Further analysis of your data

You can automatically find the **average, maximum value, minimum value, sum, and other operations** of any column or row with a few quick steps.

- To perform any of these operations on a row, select an empty cell that at the end of your data.
- Select the down arrow on the "AutoSum" button, under the "Home" tab. Then, select your chosen operation from the drop down menu. For options like the median, select "More Options" and search through all of excels formulas.
- To apply any operation to a column, follow the same directions; however, this time select the empty cell at the bottom of your data.

Another helpful tool when analyzing data are **lines of best fit, or trendlines**. Trendlines will help you see the overall trend of the data points on a graph. You can add one by completing the following steps.

- On your graph, left click a data point.
- A menu should appear, select the option "Add Trendline."
- The trend line menu should appear. Choose between various types of trend lines that will suit your data set the best.

4. Helpful Hints and tricks

Transposing data: If you decide you need to reformat your data to go the other way, simply copy your existing data found in the first picture, go to an empty cell, left click, click 'Paste Special,' and transpose.
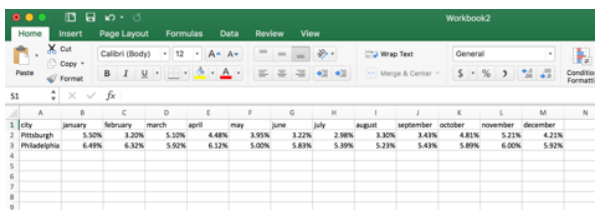
8	city	Pittsburgh	Philadelphia
9	january	5.50%	6.49%
10	february	3.20%	6.32%
11	march	5.10%	5.92%
12	april	4.48%	6.12%
13	may	3.95%	5.00%
14	june	3.22%	5.83%
15	july	2.98%	5.39%
16	august	3.30%	5.23%
17	september	3.43%	5.43%
18	october	4.81%	5.89%
19	november	5.21%	6.00%
20	december	4.21%	5.92%
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Filtering through data tables: When working with big data, it may be helpful to hone into one area of your data set. Using the filter button at the top right corner will allow you to chose what data you want displayed at one time.