**Assignment #7: Building Data Visualizations Using Python**

**Part 1: Write Python programs to build the charts**

* Create two different graphs with data excerpted from an earlier assignment or a different dataset.
* At least one graph should include at least two records' of data (e.g. a line chart with two or more lines) with appropriate legends.
* The two graphs should use different formats (e.g. a line chart and pie chart).
* At least one python script should request a range of values (e.g. a range of years) or one or more selected values from the user and validate the user's response before creating the graph. If data are not available that meet the user's request, issue an appropriate message to the user.

**Part 2: Prepare a report about the graphs**

Use the editor of your choice to write a report and include the images of the graphs. Submit the report as a PDF file.

Include the following information for each chart or graph that you include:

* The URL where you obtained the data
* Write at least one paragraph to describe what your graph shows: for example ...
  + Can you draw any conclusions by learning from the data? (e.g. "*New York City first graders scored higher on reading tests in year x than they did in year y"*)
  + Can you draw any conclusions about the integrity of the data? (*e.g. "This graph reveals many outliers so I believe these data would require more research and validation to be useful.")*
  + Who might find your graphs useful? (e.g. "*This pie-chart about the results of a local election in Upstate New York would be of interest to a future candidate for this post.*")

**Resources:**

* [Class Programming Notes](https://cs.nyu.edu/courses/fall19/CSCI-UA.0060-001/notes/dbw_readings_pythonDataViz_fa19.html)
* [Class resource notes](https://cs.nyu.edu/courses/fall19/CSCI-UA.0060-001/notes/dbw_resources_python_pyplot_notes_fa19.html)
* [Matplotlib Gallery](http://matplotlib.org/gallery.html) for inspriation!

**What to turn in:**

Post the following to NYU/Classes:

Be sure to compress all of your files into one .zip file for submission. Include both the assignment number and your netid in each filename, e.g. *asg9\_de123\_script.py* etc..

1. The datafile you used for your graphs.
2. The python programs that you wrote to create the graphs.
3. Be sure to list your data source as a comment in your python program as well as in your report in Part 2.
4. The report in PDF format that you prepared in Part 2 above which includes images of the graphs.