**Assignment #6**

**Objective**

Learn how to use Jupyter Notebooks, become familiar with the Numpy package. This assignment is not meant to span an entire week as previous assignments have done. This is because you have had a project due this week and we want to take time to solidify your python learning. However, we need something new to go over next week!

**Due**

Tuesday at 9am on Feb 13th. Please upload your completed notebook to your class github repository. Please note that unlike previous assignments you have until Tuesday to complete this assignment.

**Background**

To make this assignment a bit easier, we will be using Jupyter notebooks. We can easily install Jupyter with a few commands. Because we will be covering several other Python packages for data wrangling we will go ahead and install other packages as well. Please, run the following command to install Jupyter, and several other packages we will be using in the next few weeks:

On Windows and Mac:

python -m pip install --user numpy scipy matplotlib ipython jupyter pandas sympy nose

On Linux:

python3.6 -m pip install --user numpy scipy matplotlib ipython jupyter pandas sympy nose

After this is done you should be able to launch a jupyter notebook server on your local machine by running the following command.

On Windows:

(Unfortunately, the pip installer may not place the jupyter notebook binary in your system path. A quick way to run it is to specify the complete path)

C:\Users\{username}\AppData\Roaming\Python\Python36\Scripts\jupyter-notebook.exe

Be sure to replace {username} with your Window’s username.

On Linux and Mac:

jupyter notebook

Next we need to ensure that all necessary Jupyter kernals are installed. To do this run the following commands.

On Windows and Mac:

python –m pip install ipykernel

python –m ipykernel install –user

On Linux:

Python3.6 –m pip install ipykernel

Python3.6 –m ipykernel install –user

**Tasks**

* Install the required packages and software, as described in the background section above.
* Change directories to a new Assignment06 directory in your Hort 503 GitHub project.
* Launch the Jupyter notebook application and create a new Python 3 notebook.
* Give your notebook the name ‘Assignment06’. This will automatically create a file in the working directory named **Assignment06.ipynb.**
* Complete the following tutorials within your jupyter notebook:
  + <https://www.datacamp.com/community/tutorials/python-numpy-tutorial>
  + You can skip the section titled “How to Install Numpy” as we’ve already done this.
  + Each time there is a section of code in the tutorial then enter it into your Jupypter notebook and verify that your output is the same. In some cases, you’ll see a blue **Solution** button below the code. For these code examples some parts of the code are hidden (with underscores) and you should determine what the proper code should be. Try to solve these problems on your own and only click the Solution button if you get stuck.
  + Be sure to type the code into Jupyter and do not cut-and-paste.
* Once completed, commit your Assignment06.ipynb file to your GitHub repository.