**MSDS 6306: Introduction to Data Science**

# Live session unit 11 assignment

**Due: No late acceptance; 1 week from the live secession**

**Monday class (Section: 404): 6:30pm, April 3 (Monday)**

**Wednesday class (Section: 405): 6:30pm, April 5 (Wednesday)**

Calculation Questions (using R and Git) - Use R and Git to calculate the following:

**NOTE:** Submit a HTML or WORD file with the github link that contains codes and markdown document, which shows the result. I will look through your HTML/Word file to check out the code and its result. Then, I will check out github link to see if you have a code(s) and markdown document

Open SP500.R file and complete TODO and Fill In as follows:

1. Half of you will be assigned to find a series that is less volatile than the S&P 500, the other half a series that is more volatile.
2. Download the data.
3. Calculate log returns.
4. Calculate volatility measure.
5. Calculate volatility over entire length of series for various three different decay factors.
6. Plot the results, overlaying the volatility curves on the data, just as was done in the S&P example.

**Deliverable**

1. Submit a word or HTML file that is generated from your markdown file. It should have a github link.
2. Your Github page should have a markdown file and R code if you complete SP500.R:
   1. Upload the Markdown file containing your code, analysis, and discussion to GitHub. Post a link to the Markdown file.
   2. The markdown document should have code for entering the data, calculating log returns, calculating volatility measure, and calculating volatility for the entire series using three different decay factors.
   3. Also needs to have code for a plot (and the plot itself) with the data and volatility overlaid.

Link to my homework 11 GitHub repository: <https://github.com/dmhigdon/DDS-HW11>