**FINN 6216 Homework Assignment #5**

**Same rules as for previous assignments**

1. Recover the last year’s price data for the following 10 stocks: F, GM, IBM, MSFT, AAPL, AMZN, SPY, XOM, PFE, BA. Use February 2, 2018 as the most recent business day. Assume that you have a long position of $1,000,000 worth of shares in each of these stocks. Use the last year’s price data to compute 251 historical price shifts, using the relative shift method as covered in the first class. Compute the sample covariance matrix. Now use Principal Components Analysis to tell me the top two risk factors of this position (You should find an eigenvalue/eigenvector routine in Matlab or some other package). What *percent of variability* is accounted for by these two factors? Compute 99% historical VaR of your position using just these two factors, and also by using all 10 stocks, and compare.

**This homework assignment is due Thursday, February 22.**