Homework assignment 1

Due: September 24, 2018

Instruction: Review the class materials, and then go over the detailed step by step example provided on the course website, titled “Lesson1\_Rcodes”, using the data provided in “Lesson1\_datafile”. Read carefully the questions, and submit the assignment by email to [dkenett1@jhu.edu](mailto:dkenett1@jhu.edu)

1. Download the daily prices for the period January 1, 2000 to December 31, 2016, for the following stocks (these are the company names, and the stock identifiers, known as tickers, are in parenthesis, which is what you will need to use to download the data): Apple (AAPL), IBM (IBM), Microsoft (MSFT), Intel (INTC), and Amazon (AMZN).
2. For each stock, calculate the daily simple return.
3. For each stock, calculate the daily log return.
4. For each stock, calculate the annual return (hint: this can be done in several ways, and you can check what happens when you download the data on a year by year basis).
5. Prepare a summary table, that for each stock will have the following information: mean, standard deviation, skewness and kurtosis – for the simple return, and for the log return. Thus, since there are 5 stocks, you should prepare a table that has a total of 8 rows, and 5 columns.
6. What is the daily return of the portfolio made up of these five stocks? What is the average, standard deviation, skewness and kurtosis of the portfolio return?
7. Follow the example provided in “lesson1\_Rcodes” to test whether the daily simple return and log return time series, of each stock separately, and that of the portfolio, follow a normal distribution.