MIS 3335 – Data Analysis Using Python
Homework 6 – Working with Dates

This is an individual assignment and must be completed separately by each student. Group work is not permitted.

► HERE IS WHAT I WANT YOU TO DO:

Your assigned task is to complete the data operations described below using pandas, Python, and the Jupyter Notebook. The data file for this assignment is named "IBM.csv" and is available on Blackboard with the other course data. ***Submit your notebook at the appropriate link in Blackboard***. Do not submit the data file.

► HERE IS WHY I WANT YOU TO DO IT:

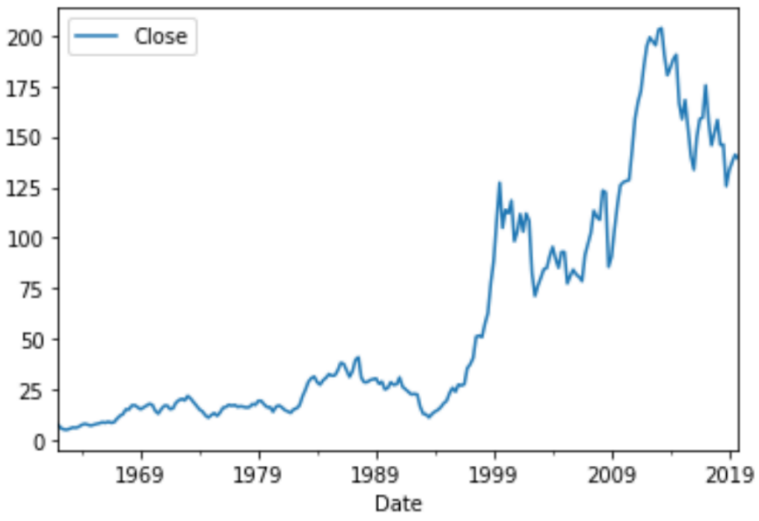
In addition to the skills we have practiced to this point, this assignment will give you more experience with the following concepts:

- Reading data that contains date values.
- Creating a simple plot.
- Aggregating and otherwise working with date values.

► HERE'S HOW TO DO IT:

This dataset contains all daily stock data for IBM (stock trading symbol is … wait for it … ***IBM***) since January 1962. Use pandas in the Jupyter Notebook (overall quality = 10 pts) to do the following:

1. (5 points) Read the data from the csv file and store it in a data frame object named 'ibm.' Make the date column the index and be sure to parse the dates, just to be safe.
2. (8 points) Get the data representing the quarterly means of each column and store it in a new object called "ibm_qtr."
3. (10 points) Plot the closing price (y-axis) versus the quarter designation (x-axis) using the plot() method built into the data frame object. Because the quarter designation is the index of "ibm_qtr," plot() will default to using it as the x-axis, so you don't have to worry about it. Just specify the y-value.



4. (7 points) Create another set of data representing the weekly totals of each column and save it in a new object called "ibm_wk."
5. (10 points) Using print() statements, display the 3 smallest and 3 largest volume weeks in the weekly data. [A couple of dataframe methods used in HW 5 will be helpful here.]

```
                 Open       High        Low      Close  Adj Close  Volume
Date
1965-11-28  35.900000  36.166667  35.754167  35.783333   9.284139  598400
1967-01-01  36.728125  37.012500  36.559375  36.831250   9.567860  798400
1969-04-06  46.900000  47.000000  46.562500  46.737500  12.279013  918400

                 Open       High        Low      Close  Adj Close     Volume
Date
1992-12-20   70.28125   71.21875   67.65625   68.81250  41.871697  175357600
1995-09-17  119.96875  121.00000  116.87500  118.53125  76.334987  169902800
1996-04-21  138.96875  141.31250  134.43750  136.43750  88.282109  145222800
```

Be sure to follow our conventions for comments, Notebook sections, and other code organization issues. Submit your completed notebook at the specified Blackboard link before the deadline.

Solve the problem(s) before you start writing code.

► HERE IS WHAT YOU SHOULDN'T WORRY ABOUT:

There is nothing obvious to mention here. Just be sure to answer the questions that were asked.