INSY 5336 001
Python Programming
Fall 2019
Final Term Project (100 points)
Due Date: December 1, 2019 11:59 pm CST (no exceptions)

The following guidelines should be followed and will be used to grade your project work:

- All code to be implemented and submitted as a jupyter notebook (.ipynb) file.
- This is an individual homework assignment, no group submissions will be accepted. If you discuss in groups, please write your code individually and submit.
- Sample runs shown in the question should be used as a guide for implementation. However extensive testing needs to be done on your code to deal with all test cases that might possibly be executed.
- The instructions for running of each cell and the expected results should be documented in the cell preceding the code using markdown language.
- Every code segment in the jupyter notebook cells should be well documented with comments. Use # in the code to provide comments and they should explain the algorithm and what the code segment is doing.
- Error checking in your code is very important and differentiates a high quality programmer from a low quality one. Hence you should account for invalid user inputs, infinite loops, out of range results, etc. and resolve them by appropriate error messages. The homework will be graded for robustness of your code.
- Please read each assignment carefully. Note that you need to test your code with example input files. I will be using my own test input file to test your code. DO NOT hard code file names in your program.

This is a project to scrape data from the web and store the results in a text file.

1. (100 points) The CNN Money's Market Movers website (https://money.cnn.com/data/hotstocks/) tracks the most active stocks on a real time basis. Specifically, the most active, the top gainers and top losers are listed at any instance in time. You will first write Python scripts that collect the list of most actives, gainers and losers from the above website. Next, your programs should take the ticker symbols of these companies and build a csv file (called stocks.csv) with data about each stock from the website: https://www.bloomberg.com/quote/GE:US which gives the quote for ticker symbol GE as an example. The data to be collected from the Bloomberg site should include:
   OPEN price
   PREV CLOSE price
   VOLUME
   MARKET CAP

   Your code should list the names of the companies in the order and categories listed in the website: https://money.cnn.com/data/hotstocks/ and ask the user to choose a company to get the data on. Once the user chooses the company of interest, your program should display its corresponding data (Open, Prev Close, Volume and Market Cap).

Sample Runs (user input in RED):
This is a program to scrape data from the https://money.cnn.com/data/hotstocks/ for a class project.

Which stock are you interested in:

Most Actives:

AMD Advanced Micro Devices Inc
GE General Electric Co
BAC Bank of America Corp
WBA Walgreens Boots Alliance Inc
AAPL Apple Inc
F Ford Motor Co
FCX Freeport-McMoRan Inc
CSCO Cisco Systems Inc
OXY Occidental Petroleum Corp
MU Micron Technology Inc

Gainers:
WBA Walgreens Boots Alliance Inc
MKTX Marketaxess Holdings Inc
NVR NVR Inc
ARNC Arconic Inc
GPS Gap Inc
EQIX Equinix Inc
ULTA Ulta Beauty Inc
TTWO Take-Two Interactive Software Inc
M Macy's Inc
NWSA News Corp

Losers:
FCX Freeport-McMoRan Inc
WYNN Wynn Resorts Ltd
COTY Coty Inc
CNP CenterPoint Energy Inc
ABC AmerisourceBergen Corp
MRO Marathon Oil Corp
ATVI Activision Blizzard Inc
COG Cabot Oil & Gas Corp
XRAY Dentsply Sirona Inc

User inputs: COTY Coty Inc

The data for COTY Coty Inc is the following:

COTY Coty Inc
OPEN: 12.78
PREV CLOSE: 12.84
VOLUME: 2,000,995
MARKET CAP: 9.580B