Week 4 Assignment: Python

This assignment has separate parts so that you can practice the concepts from this week.

Part 1: Web Scraping

1) Write a Python program that asks a User to enter a stock ticker (symbol). For example, the User might enter AAPL for Apple Stock, or TWTR for Twitter Stock etc.

2) The program will directly scrape https://finance.yahoo.com/ and will return the current price of the stock entered by the User.

3) To do this, you will NOT use an API. You will scrape the site, use regular expressions and data cleaning as needed, and will return the current stock price.

4) If you cannot access https://finance.yahoo.com/ you can use any other stock price site.

5) Your Python program will loop and will allow the User to continue to enter stock tickers and to get the current stock price. The User will choose whether to end or continue.

6) Your program will print out the ticker that the User entered and the current price for each ticker that the User chooses until the User quits.

Part 2: Using an API.

Register and get required keys for the AirNow API.

RE: https://docs.airnowapi.org/webservices

- You will need to register.

- You will need to log in.

- You will need a KEY

1) Write a Python program and use either urllib or requests. I also recommend using JSON. Use the AirNow API as well as the correct URL and GET/POST. The AirNow site will generate URL examples that you can use in your code. For example:

http://www.airnowapi.org/aq/forecast/zipCode/?format=application/json&zipCode=80302&date=2017-06-03&distance=25&API_KEY=D9AA91E7-070D-4221-867C-XXXXXXXXXXXXXXX

2) Access the AirNow data for ANY zip code that the User chooses. So, your Python code will ask the User to enter a zip code and will then print AND write the results. The results will be written to OUTFILE.txt. For each zipcode the User chooses, you will again print the results (as a clean dataframe) AND will append the results to the OUTFILE.txt. You can test your code on the following zip codes: 20002, 90210, and 80302.

3) Clean up the data so that your program writes (and prints) the results to a file (OUTFILE.txt) and shows in the results the zipcode, the date, the state, the city, and the AQI results. It is recommended that you create a dataframe of the results. Results should be easy to read and to understand.

4) **The User can enter up to four (4) different zip codes.** The User can quit when they wish, but after four zip codes the program can stop.

Hint: I have given you a lot of code and tutorial information about this topic.

RE: http://drgates.georgetown.domains/ANLY500/AirNowPythonCode.txt

Part 3: Mining Twitter

1) Review the following code:

http://drgates.georgetown.domains/ANLY500/twitter/

2) Run the code for any #YOURCHOICE.

3) Get the code to generate a Word Cloud for your tweet choice.

4) The goal here is to review, understand, and use the code.

Deliverables:

1) This assignment has three parts that are disconnected.

2) Create ONE (1) zip folder. Into that folder, place the Python code for Part 1. Call it, Part1Scrape.py.

3) Into the same zip folder, place the Python code for Part 2. Call it, Part2API.py. For Part 2, you will also generate output called OUTFILE.txt. Include this in the zip and call it OUTFILE.txt.

4) Into the same zip folder, place ONLY your WordCloud pasted into a Word Doc. Call it, WordCloud.doc for Part 3. Remember that for Part 3, I am giving you all of the code. I want you to understand the code and use the code with your own #whatever to create a WordCloud. Therefore, I only want you to submit the resulting WordCloud.

5) Submit the ONE zip folder via email to the TA. cc me. Always put your name in the email. Title the email: **Week 4 Assignment.**