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EE-551 W1 Final

Necessary Pacakges: sudo pip3 install < >

Pandas, pandas\_datareader, statistics, matplotlib.pyplot, numpy, datetime, time, and pysqlite3

And separately install sqlite3 browser

This project was used as a data analysis of stocks.

Specifically, this made use of the data available on yahoo finance.

Using pandas and pandas\_datareader, you can pull historical data for a given stock into a data frame.

I made user interaction by asking for input from user for the stock ticker symbol and the date range for the data.

I was able to make use of the data to obtain an array of daily returns. The logic here is that given a list of Adjusted Closes, Daily Returns is calculated by dividing the Adj Close by the Previous Close (preceding Adj Close). In order to do this, I sliced the Adj Close array from the first onwards to omit the first close price (since there is no preceding, it doesn't give us a daily return). Then I sliced it again omitting the very last element to create two equally sized arrays to create the previous close array. The return statement performs the manipulation to these two arrays to yield daily returns.

Other functions include values for monthly variance, conditional monthly variance, and monthly volatility. Given more time, I could research more financial functions and attempt them as well (I am not well versed in the equations).

I also used the data obtained and implemented sqlite3 database.

In stocksDatabase.py I populate a database with the stocks historical data. I think it was useful to connect python to a database and show use here. More functionality could also be further delved into in the future here.

Fixes:

Originally, I was unaware of pandas and pandas\_datareader, so I tried obtaining the historical stock data from yahoo finance website for any stock seen in importRequests.py. I noticed that all the URL’s for the .csv files followed the form:

https://query1.finance.yahoo.com/v7/finance/download/" + ticker + "?period1=" + p1 + "&period2=" + p2 + "&interval=1d&events=history. So, I made those variables inputs, converted time to Unix, and made use of the requests package to pull the .csv file and save it to my computer, Unfortunately, the csv would be filled with errors about cookies, and invalid types. Not sure what went wrong. Then I found pandas\_datareader. Although you can’t view the data, you can use its values which worked.

Errors:

Can’t get matplotlib to work and plot data. Would love to use this data and maybe have visuals.

Applications:

Can be used in future to compare stocks at given time ranges. Would be interesting to compare stocks during COVID-19 and during other times.