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Professor Ryan

CS 110 A

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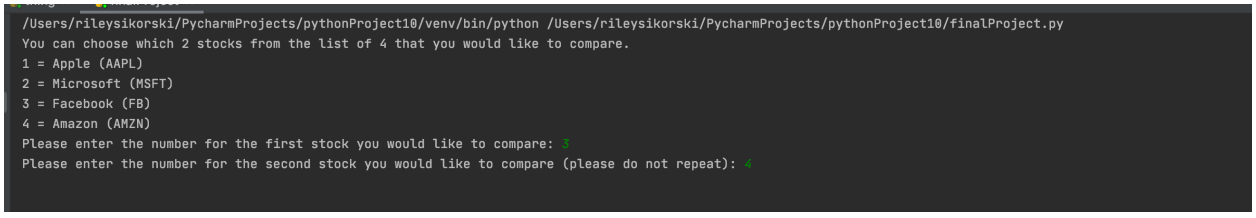
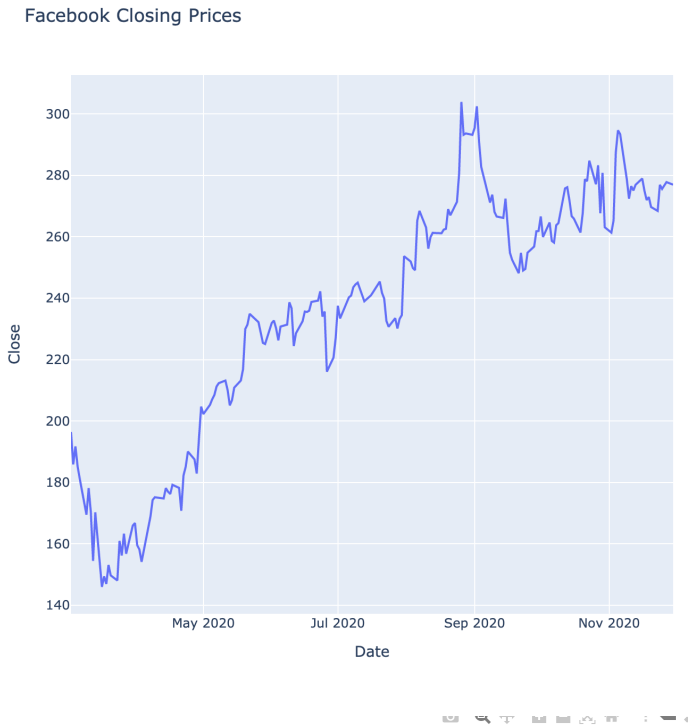
CS 110 Final Project Report

Section One; "Overview and Summary of Project"

The program that I have created answers the question, "How do the closing prices of two stocks over the last 10 months, as affected by the pandemic, compare?" It takes two stocks (chosen by the user) and graphs their closing prices from March 1, 2020 to December 1, 2020. The purpose of this program is to allow the user to compare and analyze how the two stocks have performed throughout the worldwide Covid-19 pandemic. Once the program begins running, it prints out a list of 4 stock options - Apple(1), Microsoft(2), Facebook(3), and Amazon(4). The user is prompted to choose their first stock, by typing in the number that correlates to the company they wish to graph. Then, they are asked to choose their second, again by typing in the correlating number. The user is asked not to choose the same number twice.



After both stocks are chosen, the closing prices for both are graphed, allowing the user to compare and analyze them. Below is a picture of the output that would result if the input were that the user typed in "3" and "4", meaning that they chose to compare Facebook to Amazon.

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/Users/rileysikorski/PycharmProjects/pythonProject10/venv/bin/python /Users/rileysikorski/PycharmProjects/pythonProject10/finalProject.py
You can choose which 2 stocks from the list of 4 that you would like to compare.
1 = Apple (AAPL)
2 = Microsoft (MSFT)
3 = Facebook (FB)
4 = Amazon (AMZN)
Please enter the number for the first stock you would like to compare: 3
Please enter the number for the second stock you would like to compare (please do not repeat): 4
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Target Audience

The target audience for this program would be any American looking to see how the current pandemic has affected popular companies. Many Americans hold stock in major corporations, whether it be companies included in this program or others. This program shows directly how Apple, Microsoft, Facebook, and Amazon have performed during the pandemic. Any stockholder of these companies can use this program to analyze them directly. Using this program to analyze the effects that the current pandemic has had on these popular companies will provide an idea of how other companies, or even the market as a whole, have been affected. Therefore, this program can help people to see how companies they hold stock in have performed over the last few months, or it can allow them to use the graphs to estimate how other companies that they hold stock in have performed during the pandemic. This program can also be used by others who just want to see the effects that the pandemic has had on major global companies.

Specific Programming Techniques Used

This program uses several specific programming techniques. It uses a decision structure to determine which stocks to graph. The user is asked to input which stocks they would like to compare. The variable “first” is set equal to the number that they input (correlating to the first stock they wish to graph). Then, the program uses if and elif statements to see which value “first” is equal to, and to determine which of the four stocks should be graphed first. Then, the same thing is done with the variable “second,” relating to the second stock that will be graphed. If and elif statements are used to determine which stock is graphed second. The values that the user inputs for both variables “first” and “second” are ints, and that is why both inputs must have eval() in

front of them. The data used to graph the stocks was collected using the yfinance library. This python library allows you to collect data on stocks and their historical prices. I used plotly, another python library, to graph the data that was collected using yfinance.

Challenges

A challenge that I faced was figuring out how to allow the user to choose which stocks to compare. Originally, I wanted to allow the user to compare any two stocks of their choice. However, I could not figure out a way to write code that would allow getting information from yahoo finance on any stock. Therefore, I wrote the code that would get data from yahoo finance on the four stocks included in my program. This allows the user to still choose which 2 stocks they want to compare, however, they are only choosing from four instead of from any stocks.

Future Extensions

A possible extension for this program would be to allow the user to choose which metric they would like to graph. The program that I wrote graphs the closing prices of the two stocks. This extension would allow the user to choose to graph closing price, opening price, daily high price, etc. Another possible extension would be to allow the user to choose how many stocks they would like to compare, instead of just the two. For example, if the user wanted to compare all four they could. Or if they only wanted to graph one of the four stocks, they could do that as well. A third possible extension would be to allow the user to graph multiple metrics for each stock. For example, if the user wanted to graph both opening and closing price for each stock, they would be able to do so.

I pledge my honor that I have abided by the Stevens Honor Code.

Riley Sikorski