Portfolio Assignment: Improving the stock problem with additional functionality for

Master of Science

Information Communication and Technology

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Introduction

This assignment is a comprehensive code assignment with multiple functionalities that are helpful to produce a final chart result for stocks. The code utilizes python key concepts such as conditional statements, lists and dictionaries, classes and objects as well as reading external files and saving the data to database. Overall, the code is very helpful to visualize how an investor’s stock purchase is going for given stock.

Areas of improvement

Overall, this code is very functional and useful for an investor to visualize how stocks are doing. However, there are some areas of improvement within this code to make it more efficient. First improvement I’d like to make is creating a function for some of the duplicate code such as reading CSV file. We are reading two CSV file and the code is same so we can reduce the code by creating a method that would be used to read both the files.

Feedback implementation

The final code is the result of the feedback received throughout the project. One critical feedback was that the code needs to modularize for readability and efficiency. To accomplish this, I have created a method named loadJSONData to read Json file from multiple places. Additionally, I was inserting stockID and bondId manually by using a ‘counter’. Instead of that, I am now auto-incrementing right when the table is created.

Additional Functionality

As an additional functionality, I have decided to visualize the data using Plotly graphing library. Previously, the code utilized matplotlib but the chart was not very interactive. With Plotly, when hovering over the chart lines, it shows the value. The legends are clickable as well where the user can click and drill down to only one stock line or they can also compare two stock lines over time. The zooming functionality of Plotly is more interactive than matplotlib. In addition to Plotly, the code also has some unit tests to ensure the quality.

The functionality was not hard to implement because the logic was already written for stock calculations. However, figuring out the modes and centering the title took me a while. Plotly documentation online was very helpful and easy to understand. Overall, it was similar to matplotlib but it produces much attractive output.

Link to GitHub: <https://github.com/minnikitti/pythonportfolioassignment>

Screenshots of output

A graph with lines and text

Description automatically generated with medium confidence

A graph with purple lines

Description automatically generated