Analytical Applications in FinTech

Term Project

*Submission requirement:*

1. Create two Python code files. One for Question 1 and another one for Question 2.
2. Create two Word files. One for Question 1 and another one for Question 2. Paste the chart outcomes of the questions in the corresponding Word files.
3. Name your Python code files and Word files as your first name-last name-Q-number of the question (for example, for the first question, your file name is Warren-Buffett-Q-1)
4. For question 1, submit online 1) A Word file has the results of the charts, 2) a Python code file, and 3) the data files.
5. For question 2, submit online 1) A Word file has the results of the charts, 2) a Python code file.

Project:

1. DJIA vs. Stock

The Dow Jones Industrial Average (DJIA) is a stock market index. Select a US public company in which the first letter of the company’s name is the same as that of your first name. Download the daily stock price data for DJIA and your selected company DJIA in the last five years for the following tasks:

1. Create a line chart that shows the DJIA adjusted price over time. (2.5 points)
2. Create a line chart that shows the DJIA adjusted price as compared with your selected company’s adjusted stock price. For this chart, use dual axes. (2.5 points)
3. Compute the daily returns for the DJIA, and display these in a histogram. (2.5 points)
4. Create a scatter chart showing the relationship of the DJIA daily return to the daily returns of your selected company. (2.5 points)
5. A company has two divisions that have provided historical and project income statements. The data can be found in diva-incstmt.csv and divb-incstmt.csv.
6. **Clean the data** **first.** (2.5 points)

Then create the following charts to visualize the data:

1. A stacked bar chart of historical and projected sales over time that includes both divisions’ sales. The X-axis must be the Year. (2.5 points)
2. A clustered bar chart of sales over time that includes both divisions’ sales. The X-axis must be the Year. (2.5 points)
3. Two separate pie charts, one for each division, showing the different kinds of expenses forecasted for 2021. (2.5 points)

(Tip: the code to read diva-incstmt.csv is : dfdiva = pd.read\_csv('diva-incstmt.csv', skiprows=5, usecols=[0,1,2,3,5]) )