Group Project (30%)

Teams of 4 or 5.

In your team, select a publicly traded stock and perform an evaluation of the company in terms of various financial analytics.

The following rules apply for the selection of the stock:

1. The stock must be publicly traded on a North American exchange (i.e. NYSE, TSX, NASDAQ, etc.)
2. The stock must have paid a dividend in each of the last three years (2020, 2021, and 2022)
3. Amazon, Apple, and Microsoft are not eligible for selection, due to their use throughout the course in various examples.
4. Stock selections are first come, first served. If a company is already claimed, a team will be asked to select another one. Selected stocks will be periodically updated to Blackboard.

Your analysis will be divided into 8 parts:

1. Business Summary (3 marks)

Identify the history of the organization and comment on its current operations. What is the organization currently doing? Research and discuss the macroeconomic environment and business cycle, as well as the current industry environment. Identify top industrial competitors and the approximate market share of each organization.

2. Valuation (4 marks)

Determine the company value using the capital asset pricing model (CAPM) and the dividend growth model. For CAPM, you may use the Beta value indicated on Yahoo Finance (please indicate the date the Beta value was taken).

3. Ratio Calculation (5 marks)

Calculate financial ratios based on the financial statements of the most recent available year. Calculate the six discussed profitability ratios, the three discussed liquidity ratios, the price-to-earnings ratio, dividend payout ratio, debt-to-equity, and the organization's sustainable growth rate. You must perform these calculations yourselves and include them in your report, even if the ratios are present in the financial statements. If, for any reason, a ratio cannot be calculated, indicate the missing data that prevents the data from being calculated.

4. Technical Analysis & Monte Carlo Simulation (5 marks)

Perform technical analysis in Python on the 2022 values stock you have selected. Create the Bollinger Bands for the stock. Also perform Monte Carlo simulation on the stock. Develop the simulation using stock prices from January 1, 2022 through December 31, 2022, and simulate the stock price for January 1, 2023 through December 31, 2023. Perform 10,000 simulations, and calculate the average and standard deviation of the return on the stock.

5. Stock Signals (3 marks)

Identify the buy and sell signals for the stock from January 1, 2022 through December 31, 2022, using Simple Moving Average and Exponential Moving Average techniques. For both cases, use 30 days for the short-term moving average and 90 days for the long-term moving average.

6. Forecasting (3 marks)

Using Facebook Prophet, generate a prediction of the stock price. Use January 1, 2022 through December 31, 2022 to create the model, then create the projection for January 1, 2023 through December 31, 2023.

7. Recommendation (2 marks)

Indicate, in your opinion based on analysis, whether a potential investor should buy, sell, or hold this stock.

8. Presentation (5 marks)

Summarize all of your work and present. Maximum 10 minutes.

Your submission should be 1 Word document, 1 Excel Document, 1 Python Notebook, 1 PowerPoint file, and a copy of the financial statements you used in your analysis (PDF preferred). All files must be submitted by 12:00 PM (Noon) on Thursday, April 20.

Ensure **ALL** external references are cited. Components of the project will be run through SafeAssign on Blackboard, and unreasonable references which are uncited **WILL** be considered a violation of academic integrity policy.