**Week 12 Final Project**

**Summary**

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The statistical/hypothesis question for the analysis was whether there was a relationship between interest rates, stock market index, and stock prices of Apple and Toyota.

Through the exploratory data analysis, I was able to gain insight into the distribution and relationship of the variables in the dataset. I visualized the data using histograms, scatter plots, and other analytical tools, and calculated summary statistics and measures of correlations.

Overall, I found that there was a week negative correlation between interest rates and the stock market index, with higher interest rates leading to a slightly lower stock market index. I also found a strong positive correlation between stock prices of Apple and Toyota, indicating that changes in Apple stock prices were likely influencing changes in Toyota stock prices.

In terms of variables that could have helped in the analysis, I may have benefited from additional data on macroeconomic factors such as inflation, unemployment, and GDP (Gross Domestic Product). These variables could have helped me better understand the relationship between interest rates and stock market index and provide additional context for the analysis.

One challenge I faced during the analysis was dealing with outliers. I had to make decisions on how to handle outliers’ points, keep and no remove outliers, which could skew the analysis.

In conclusion, the EDA provided valuable information into the relationship between interest rates, stock market index, and the stock prices of Apple and Toyota. However, there were some limitations to the analysis, including outliers and assumptions that may not always hold true. Future analysis could benefit from additional data and a more nuanced understanding of the underlying relationship between variables.