***Time Series Analysis of S&P 500 Stock Market Data for Four Tech Giant Companies***

**Problem Statement:**

In this project, I have conducted a comprehensive time series analysis of S&P 500 stock market data for four prominent tech giant companies: Apple,Amazon, Google,Microsoft. The objective of this analysis is to gain insights into the daily returns of these companies' stocks and compare their price trends using various plots.

**Project Overview:**

**Data Collection:** I collected historical daily stock market data for the selected companies from reliable sources such as Yahoo Finance or Alpha Vantage.

**Data Preprocessing:** The collected data underwent preprocessing steps, including handling missing values, adjusting for stock splits, and ensuring data consistency.

**Time Series Analysis:**

*Daily Returns Analysis:* I calculated and analyzed the daily returns of the stocks for each company. Daily returns provide valuable insights into the volatility and performance of the stocks.

*Price Comparison:* Using various plots such as line plots, candlestick charts, and box plots, I compared the price trends of the stocks over the specified time period. This comparison helps in understanding the relative performance of the companies' stocks and identifying potential investment opportunities.

**Visualization:** I utilized popular data visualization libraries such as Matplotlib and Seaborn to create informative and visually appealing plots that highlight key findings from the analysis.

**Expected Deliverables:**

* Jupyter Notebook containing the complete code and detailed explanations of the analysis process.
* Visualizations showcasing the daily returns and price comparison of the stocks.
* Documentation outlining the methodology, findings, and recommendations.

**Expected Outcome:**

By the end of this project, I aim to provide actionable insights into the daily returns and price trends of the selected tech giant companies' stocks. This analysis will not only help in understanding the historical performance of the stocks but also aid investors in making informed decisions regarding their investment portfolios.