Stock Price Analysis Project Documentation

Overview:

This project entails a comprehensive analysis and visualization of stock prices for Apple, Google, and Meta from September 7, 2017, to September 7, 2022. The primary objective is to explore relationships and correlations among the stock prices of these three companies. The analysis encompasses open and close stock prices, max high and min low stock prices, adjusted close stock prices, and volume of stock trades on a year-by-year basis.

Problem Statement:

The challenge is to unravel the intricate relationships within the stock prices of Apple, Google, and Meta over the specified period. This involves a detailed breakdown of open and close stock prices, identification of maximum high and minimum low stock values, analysis of adjusted close stock prices, and exploration of trading volumes. The task is to synthesize these data points into meaningful insights that inform strategic decision-making for investors and stakeholders.

Requirements:

1. **Open and Close Stock Prices (Year by Year Analysis):** Display the open and close stock prices for Google, Meta, and Apple, offering a year-by-year breakdown for enhanced analysis.
2. **Max High and Min Low Stock Prices (Year by Year Analysis):** Showcase the maximum high stock price and highlight the minimum low stock price for Google, Meta, and Apple in a year-wise format.

3. **Adjusted Close Stock Prices (Year by Year Analysis):** Visualize the adjusted close stock prices for Google, Meta, and Apple, breaking down the information by year to identify trends and patterns.

4. **Volume of Stock Trades (Year by Year Analysis):** Illustrate the trading volume for Google, Meta, and Apple, exploring volume trends over the specified period, delineated by years.

5. **Key Performance Indicators (KPIs):** Develop KPI measures for Average Open, Close, High, Low, Adjusted Close, and Volume, consolidating measures for Google, Meta, and Apple into single KPIs. Include a slicer for date flexibility, allowing users to focus on specific time frames.

Measure:

1. **Average Open Stock Price:** Calculated by averaging the open stock prices of Google, Meta, and Apple.
2. **Average Close Stock Price:** Derived from the average close stock prices of Google, Meta, and Apple.
3. **Average High Stock Price:** Obtained by averaging the high stock prices of Google, Meta, and Apple.
4. **Average Low Stock Price:** Calculated through the average low stock prices of Google, Meta, and Apple.
5. **Average Adjusted Close Stock Price:** A measure reflecting the average adjusted close stock prices of Google, Meta, and Apple.
6. **Average Volume:** Derived from the average trading volumes of Google, Meta, and Apple.

Goal:

Our goal is to provide a nuanced understanding of the stock market dynamics for Apple, Google, and Meta. By presenting year-by-year analyses of open, close, high, low, and adjusted close stock prices, along with trading volumes, we aim to empower stakeholders with actionable insights. Additionally, the creation of key performance indicators (KPIs) facilitates a streamlined view of average stock prices and trading volumes, aiding in the identification of trends and patterns for informed decision-making.

Steps in Project:

- Raw Data Overview
- Connecting Data with Power BI
- Data Cleaning
- Data Processing
- Data Visualization/ Charts Design
- Report/ Dashboard Building
- Insights

Insights:

- **Key Performance Indicators (KPIs):**
  - Average Adjusted Close Stock Price: $394
  - Average High Stock Price: $400
  - Average Low Stock Price: $391
  - Average Open Stock Price: $395
  - Average Close Stock Price: $396
  - Average Volume: 172 million shares

- **Findings:**
  1. Meta consistently maintains the highest open stock prices, surpassing Apple and Google.
  2. The overall trend indicates elevated open stock prices throughout the 2021.
  3. Meta exhibits the highest close stock prices, outpacing both Apple and Google.
  4. Across the board, close stock prices show a notable increase in the year 2021.
  5. Meta boasts the highest high stock prices in comparison to Apple & Google.
  6. The overall trend signals an upswing in high stock prices, particularly in 2021.
  7. Apple and Google record the lowest low stock values when compared to Meta.
  8. Overall, the year 2021 registers higher low stock prices across the companies.
  9. Meta leads in close adjusted stock prices, surpassing both Apple and Google.
  10. The general trend reveals a surge in close adjusted stock prices, especially in 2021.
  11. Apple holds the highest trading volume, exceeding both Meta and Google.
  12. The overall volume peaked in the year 2020 across the considered companies.

Conclusion:

In conclusion, the analysis of stock prices for Meta, Apple, and Google unveils consistent trends. Meta stands out with the highest open, close, and high stock prices, particularly in the notable upswing of 2021. Apple, on the other hand, dominates in trading volume, reaching its peak in 2020. These insights provide valuable perspectives for investors and stakeholders, guiding strategic decision-making in the dynamic stock market landscape.