Financial Analysis Tool

→Problem Statement:-

In the dynamic world of financial markets, investors and analysts need reliable tools to make informed decisions. The stock market is influenced by a myriad of factors, and understanding the historical performance of stocks is crucial for predicting future trends. However, accessing and analyzing stock data can be challenging due to the volume of data and the need for advanced analytical skills. This project aims to address these challenges by developing a Python-based financial analysis tool that fetches, analyzes, and visualizes stock data.

→Objective:-

The objective of this project is to create a user-friendly tool that allows users to fetch historical stock data for a given ticker symbol and date range, and visualize this data along with moving averages to help in analyzing stock performance.

→Scope:-

- **Data Fetching:** The tool uses the Yahoo Finance API to fetch historical stock data for a specified ticker symbol within a given date range.
- **Data Visualization:** The tool generates plots for the closing prices of the stock and overlays moving averages to help identify trends.
- **User Input:** The tool accepts user inputs for the stock ticker symbol, start date, and end date, ensuring flexibility and ease of use.

→Libraries used:-

- **yfinance:**
  - Used to fetch historical stock data from Yahoo Finance.
  - Provides an easy-to-use interface to download stock data for analysis.
- **pandas:**
  - Used for data manipulation and analysis.
  - Essential for handling and processing the stock data, including calculating moving averages.
- **matplotlib:**
  - Used for data visualization.

- Generates plots for the stock's closing prices and moving averages, providing a visual representation of the data.

- **datetime:**

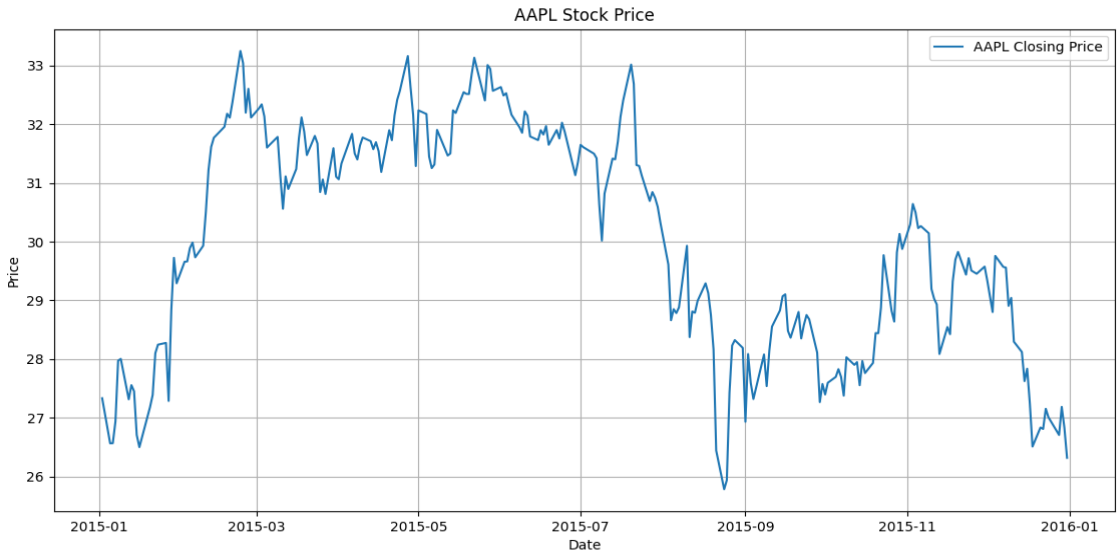
  - Used for handling date inputs.
  - Ensures that user-provided date strings are correctly formatted for the data retrieval process.

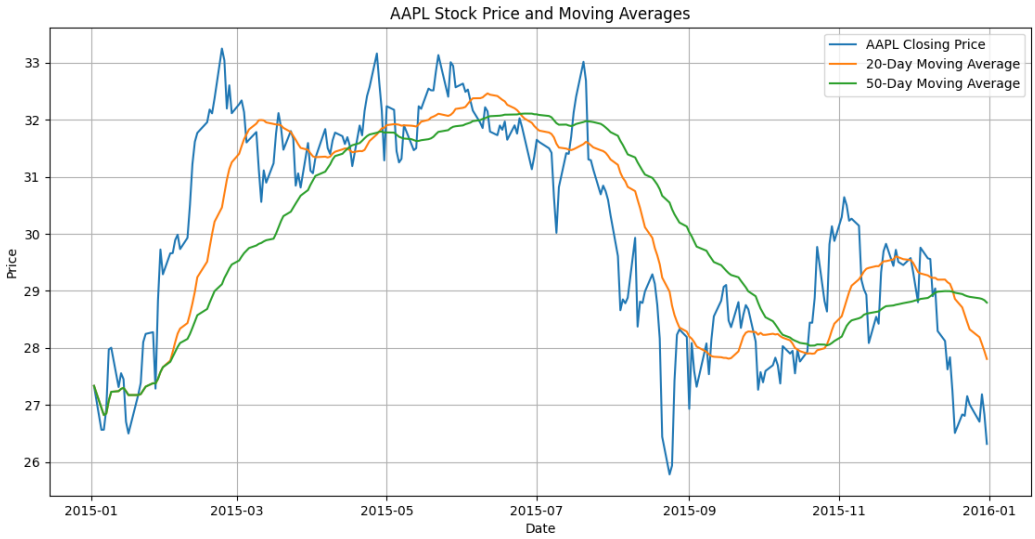
→Features:

1. **Interactive User Input:** The tool prompts the user to input the stock ticker symbol and date range for the analysis.
2. **Closing Price Plot:** A line chart of the stock's closing prices over the specified date range.
3. **Moving Averages Plot:** Additional lines representing the 20-day and 50-day moving averages, aiding in trend analysis.

→Implementation Snippets:-

```
Enter stock ticker symbol (e.g., AAPL, MSFT): AAPL
Enter start date (YYYY-MM-DD): 2015-01-01
Enter end date (YYYY-MM-DD): 2016-01-01
[**********************100%%**********************]  1 of 1 completed
```




AAPL Stock Price and Moving Averages
AAPL Closing Price
20-Day Moving Average
50-Day Moving Average
Price
Date
33
32
31
30
29
28
27
26
2015-01
2015-03
2015-05
2015-07
2015-09
2015-11
2016-01