1. Importing Required Libraries:

In this section, we import the necessary libraries for the script. yfinance is imported as yf to provide a simple way to access historical stock data from Yahoo Finance. pandas is imported as pd to handle data processing tasks. mplfinance is imported as mpf to enable the visualization of stock data as candlestick charts.

2. Data Extraction:

This section defines the function extract_stock_data(), which takes in three parameters: symbol, start_date, and end_date. Inside the function, the yf.download() function from the yfinance library is used to retrieve historical stock data for the specified symbol, within the specified start_date and end_date range. If the data extraction is successful, it is returned. Otherwise, an error message is printed, and None is returned.

3. Data Processing:

In this section, the function calculate_average_volume() is defined. It takes in a data parameter, which is the stock data obtained from the extraction step. The function first checks if the data is None, indicating an error during data extraction. If data is not None, it calculates the average volume by accessing the 'Volume' column of the data DataFrame and applying the mean() function. If the calculation is successful, the average volume is returned. Otherwise, an error message is printed, and None is returned.

4. Data Visualization:

This section defines the visualize_stock_data() function. It takes in the data parameter, which is the stock data obtained from the extraction step. The function checks if the data is None, indicating an error during data extraction. If data is not None, it uses the mpf.plot() function from the mplfinance library to generate a candlestick chart visualization of the stock data, including volume bars. The chart is displayed using the 'yahoo' style.

5. Usage:

Here, We used “si” as an input variable to take the stock symbol as input and using upper() we made sure that input gets converted to upper char. Before sending it to yahoo api.

Start_date and end_date are already set about 1 year apart but we can change them if we need to. After processing the data we would also be able to get an average value from that time period.