THE BUMPY RIDE OF TESLA STOCKS

Introduction

Tesla, Inc. is an American electric vehicle and clean energy company based in Palo Alto, California. Tesla's current products include electric cars, battery energy storage from home to grid-scale, solar panels and solar roof tiles, as well as other related products and services.

In this report, analysis was done by using the last 5 years' **Tesla stock dataset** and data cleansing, preparation was also done before visualizing it with the help of **pyplot** and **mplfinance** libraries.

Data Preparation and Cleaning

Data reading and manipulating data by importing various required libraries and **handling the null value to clean** and ready data for further analysis.
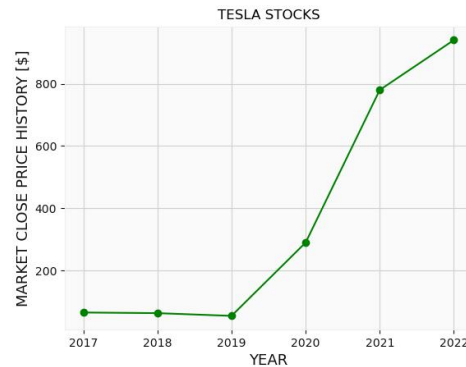
Trend Analysis of Tesla Stocks

The total number of stocks present in this data frame is **12528**

Here in this above line chart, the trend line shows the highest stock price in the entire time (Year) duration. In this data frame, the year 2022 which **trend close** had reached **more than 1200**. Then dropped into the range of 800 to 1000.
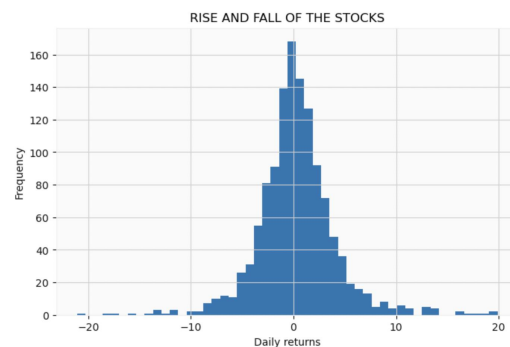
Mean Analysis Stock Volume

Mean analysis is nothing but aggregate average of the open, close, volume of given stock grouped by Year.


```
------------------MEAN ANALYSIS BY YEAR FOR OPEN, CLOSE & VOLUME------------------
            Open         Close        Volume
year
2017   65.512750    65.474221    3.258114e+07
2018   63.436693    63.461984    4.306053e+07
2019   54.605627    54.706040    4.579461e+07
2020  289.108428   289.997067    7.530795e+07
2021  779.839286   779.994482    2.738758e+07
2022  945.137620   940.136427    2.791428e+07
---------------------------------------------------------------------------------
```
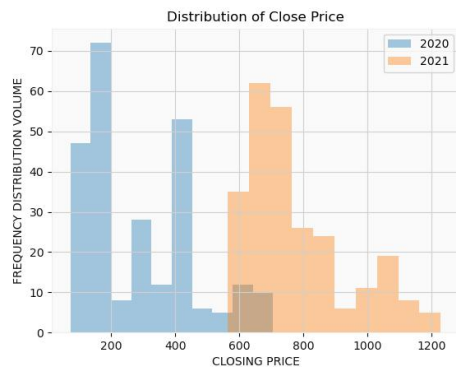
By looking into the graph, we can say Tesla stocks have been started gaining high profit in the year 2020 due to the release of the new model Tesla X. The electric car maker sold **936,000** vehicles last year, up **87%** from its 2020 sales. In the year **Feb 2022**, the open and close had the highest mean distribution.

The revenues of the stockholders, traders and market price of the stock can also be determined by using the **predictive analysis**. In the above bar graph, the daily returns of the Tesla stock had been measured by **distributive frequency**, here we can observe that frequency of rising value of stocks is **high**. So we plot out the

histogram using the .**hist** method and we specify the number of bins we want. The thicker our histogram is the more volatile the stock.

Comparison Analysis Between Years

The distribution or range of any value in data can be easily determined by the frequency of closing price certain range with the help of histograms represented using the **seaborn** library.

In the above histogram figure, we can observe the closing price of the year **2021** is **higher** but closing price **frequency distribution is also high comparatively in the year 2020.**

By using **a histogram**, we can easily compare the uniquely distributed data for multiple independent variables.

Market Cap Analysis

OHLC-Chart(Open-High-Low-Close Chart) is typically used to illustrate price movement over time.

- **MOVING AVERAGE**

Moving average is a stock indicator that is commonly used in technical analysis. Moving average help smooth out the price data by creating a constantly updated average price filtering out the minor fluctuations in price.

Mplfinance can calculate the moving average and plot it along with stock price if the number of periods is provided as an argument. Moving average of single or multiple periods can be plotted in the same chart.

- RSI

In the plot above, we can observe a pattern in that the TSLA price moves as the RSI suggests. When it is o**verbought (RSI ≥ 70)** the price is in for correction and vice versa.

In the above candle chart, we can easily predict the trend of the stocks whether to buy or sell the stocks based on moving average lines and also RSI determined values. By analyzing the year **FY21-22** we can easily find out the stocks of Tesla have been in up-trend and reached it higher stock market value up to $**1200**

Conclusion

In conclusion, the stock of Tesla Inc has been the increased value it is per stock price with time.

I have also found that in recent years the price of TESLA stock has increased very hugely.

References & Outcomes

- https://www.kaggle.com/datasets/varpit94/tesla-stock-data-updated-till-28jun2021
- https://pandas.pydata.org/docs/user_guide/index.html
- https://matplotlib.org/3.3.1/users/index.html
- https://github.com/saiharishs/Applied_Data_Science/tree/Assignment-1