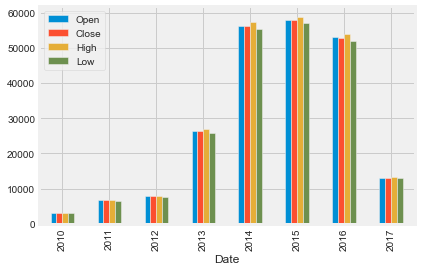
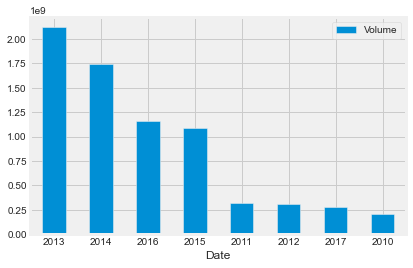
Basic analysis

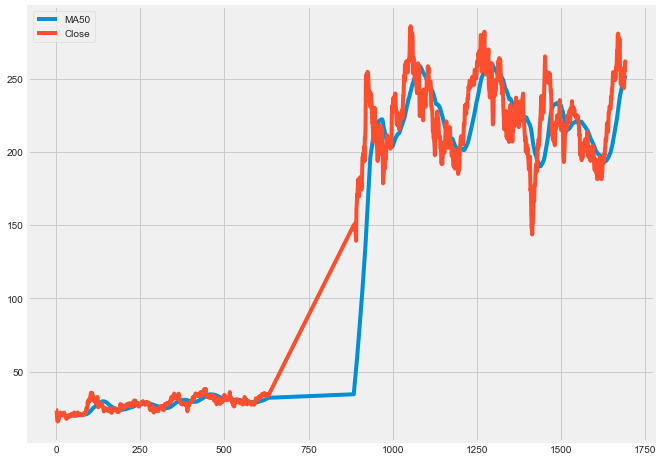
Let us see how prices had been chaning from 13-17.



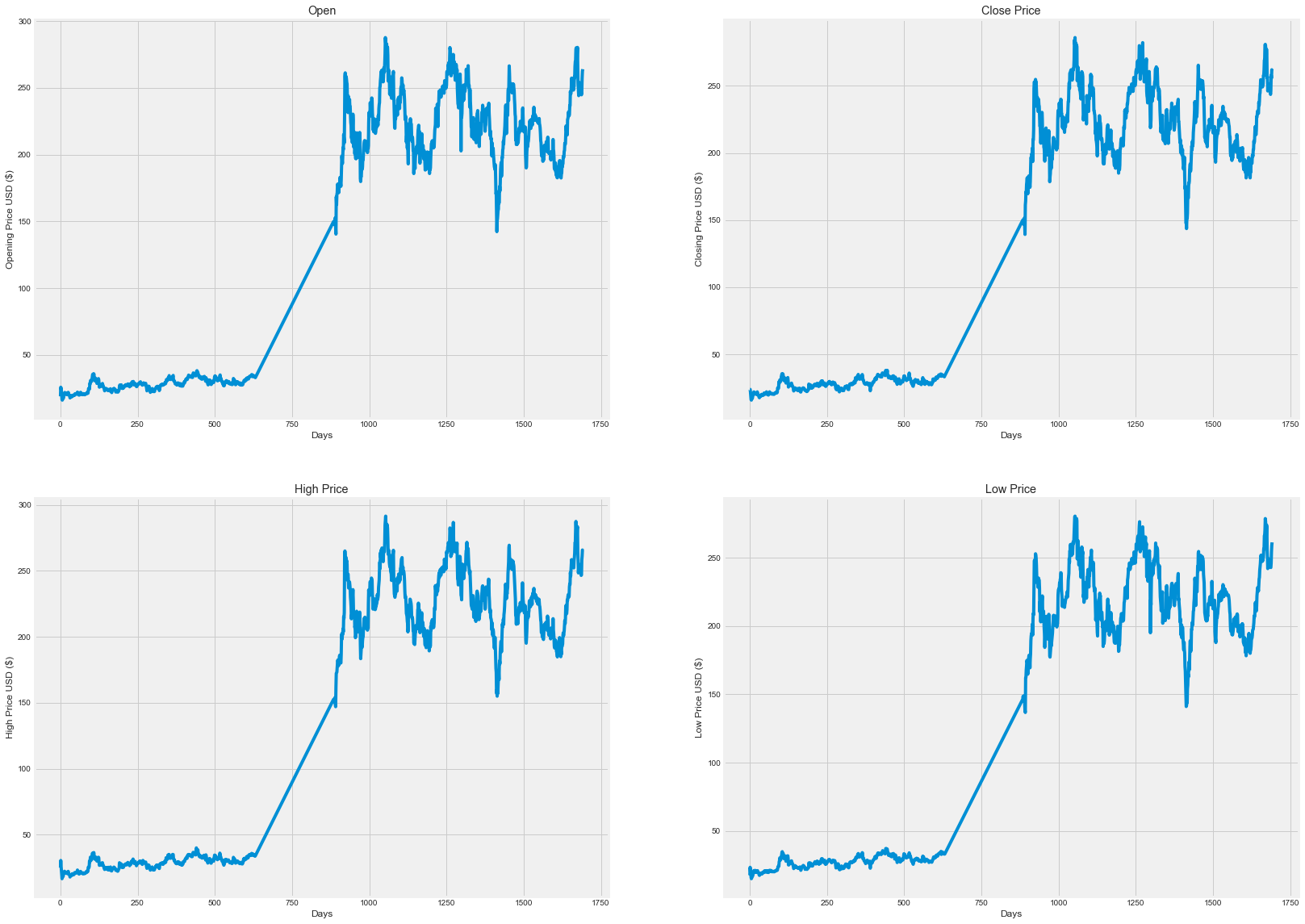
We may assume that 2014-2016 were very succesful period for Tesla because at tha time Elon Musk dreamed of Mars colonisation, whereas Tesla Model X and Model 3 were realesed.



However, volume of traded securities show that people began intersted in Tesla in 2013 and Tesla therefore realesed many secutiries.



Now, let us look how close price looks in comparison with moving average. We build formula: where A-average in period, n- amount of periods.



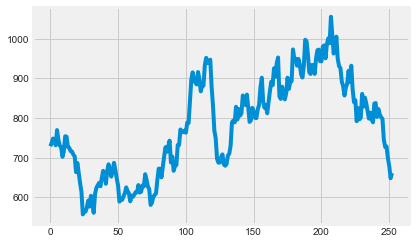
For more clarificaiton, I also added a simple time series of Tesla’s stock price which calculated in days for its more detailed volatility.

Monte Carlo Simulation

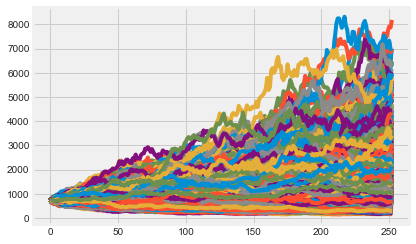
To undestand Method of Monte Carlo let us imagine a square with random lenght L, and points are changing from 0 to L in it. Therefore, we now can generate a random sample with 2 numbers . Hence, we get . Repeating this procedure many times we will have a greater amount of point fillings our square. The final number of points in the square will therefore characterise the area of the square.

To perfom Monte Carlo Simulation, I used Yahoo Finance and integrated it into my analysis.

Now, time to build our simulation on the stock. Initally, we are going to build a simple model with a random value generator:

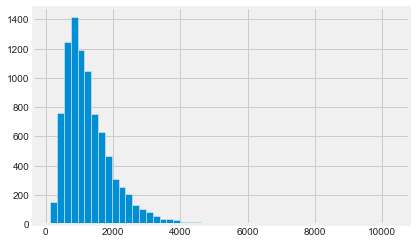


However, If I randomly choose 10000 values with n-250- trading days-1 to close the year with a good profit.



So, what this pictures tell us?

We see in this graph, that there is a possible realisation after the already realised path of the prices. Now we can go further for better prediction tools. Consequently, we should use logarithmic returns:



It can be interpreted as there is no seasonality, yet no any trend, just a general price changes with estimated future price of around 1284, while 10% chance that price will 535 and 10% that it will peak up to 2250 (calculations were made in Python).

Conclusion

The main question for a potential investor is should he invest into it?

Tesla used to be a company with the largest market cap in the car industry whereas they implemented many innovations into their automobiles. However, we also need to be really careful as it can be a bubble that may exploit if Tesla will make some crucial mistake in their management/engineering. Moreover, reading the news we already know that the industry and its factory are not really good in comparison with Germans for example. So, we probably cannot predict prices fluctuations in short/even medium terms, but for people who are looking for a long-term investment Tesla might take a little place in their portfolio because Tesla brank has become widely known worldwide and a personality of Elon Musk plays one of the most vital.

Note, this analysis might be very inaccurate and I kindly suggest to think rationally before investing into something.