Tesla Stock Price Prediction with Machine Learning

Dataset: Yahoo Finance (TSLA)

- Import Python libraries and dataset

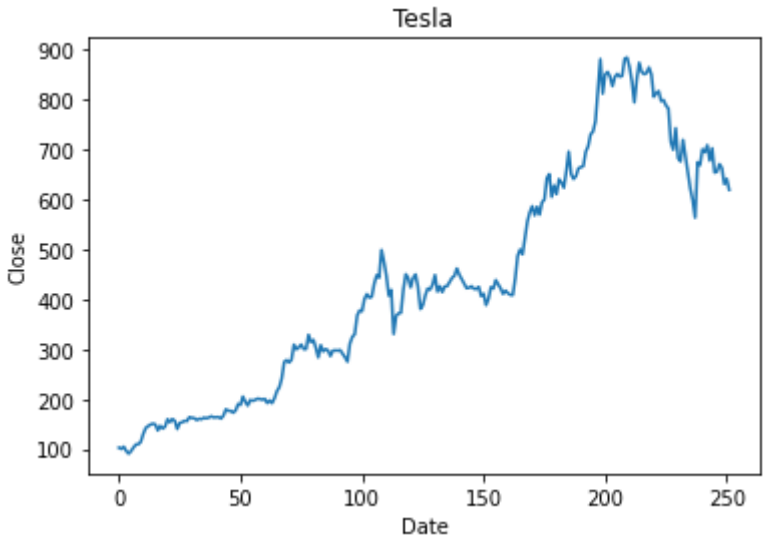
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from fbprophet import Prophet

data = pd.read_csv("TSLA.csv")
data.head()
```

	Date	Open	High	Low	Close	Adj Close	Volume
0	2020-03-27	101.000000	105.160004	98.806000	102.872002	102.872002	71887000
1	2020-03-30	102.052002	103.330002	98.246002	100.426003	100.426003	59990500
2	2020-03-31	100.250000	108.592003	99.400002	104.800003	104.800003	88857500
3	2020-04-01	100.800003	102.790001	95.019997	96.311996	96.311996	66766000
4	2020-04-02	96.206001	98.851997	89.279999	90.893997	90.893997	99292000

- Visualize the close column that represents the close prices for each day

```
close = data['Close']
ax = close.plot(title='Tesla')
ax.set_xlabel('Date')
ax.set_ylabel('Close')
plt.show()
```



- Create DataFrame with two columns- Date and close

```
data["Date"] = pd.to_datetime(data["Date"], infer_datetime_format=True)
data = data[["Date", "Close"]]
```

- Rename columns

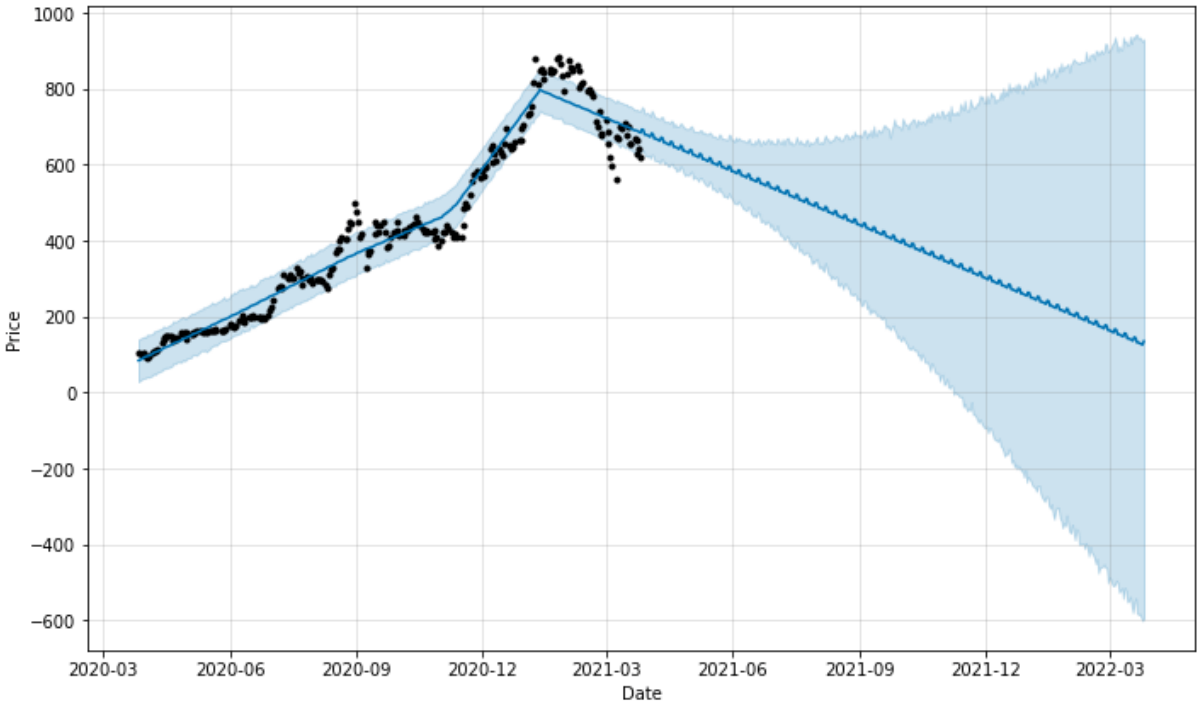
```
data = data.rename(columns={"Date" : "ds", "Close" : "y" })
```

- Predict stock prices of Tesla

```
model = Prophet()
model.fit(data)
predict = model.make_future_dataframe(periods=365)
forcast = model.predict(predict)
forcast[["ds", "yhat", "yhat_lower", "yhat_upper"]].tail()
```

	ds	yhat	yhat_lower	yhat_upper
612	2022-03-22	131.630090	-585.268250	931.611531
613	2022-03-23	129.584278	-583.545636	935.285420
614	2022-03-24	127.202999	-593.418911	930.525966
615	2022-03-25	125.492270	-601.302243	924.233573
616	2022-03-26	134.596307	-595.884292	930.702026

```
graph = model.plot(forcast, xlabel="Date", ylabel="Price")
```



It is seen that Tesla's stock prices will decrease in future.