Step-1: Import necessary libraries and data exploration on given data.

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
sns.set()
plt.style.use('fivethirtyeight')

data = pd.read_csv("Microsoft.csv")
print(data.head())
```

```
        Date       Open       High        Low      Close  Adj Close     Volume
0  02-01-2015  46.660000  47.419998  46.540001  46.759998  41.193840   27913900
1  05-01-2015  46.369999  46.730000  46.250000  46.330002  40.815037   39673900
2  06-01-2015  46.380001  46.750000  45.540001  45.650002  40.215973   36447900
3  07-01-2015  45.980000  46.459999  45.490002  46.230000  40.726925   29114100
4  08-01-2015  46.750000  47.750000  46.720001  47.590000  41.925045   29645200
```

Step-2: Data Visualization

+ Code ──── + Text

```
plt.figure(figsize=(10, 4))
plt.title("Microsoft Stock Prices")
plt.xlabel("Date")
plt.ylabel("Close")
plt.plot(data["Close"])
plt.show()
```
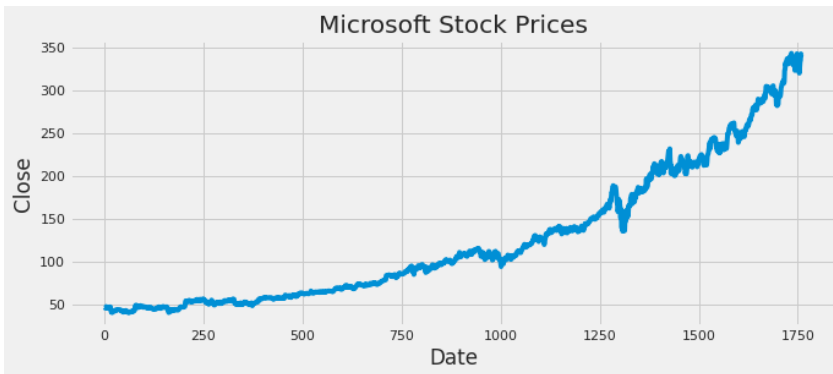

Step-3: Finding Co-relation between data

```
print(data.corr())
sns.heatmap(data.corr())
plt.show()
```

```
               Open       High        Low      Close  Adj Close     Volume
Open       1.000000   0.999868   0.999853   0.999722   0.999721  -0.076698
High       0.999868   1.000000   0.999782   0.999844   0.999845  -0.070757
Low        0.999853   0.999782   1.000000   0.999863   0.999856  -0.083634
Close      0.999722   0.999844   0.999863   1.000000   0.999991  -0.078120
Adj Close  0.999721   0.999845   0.999856   0.999991   1.000000  -0.078150
Volume    -0.076698  -0.070757  -0.083634  -0.078120  -0.078150   1.000000
```
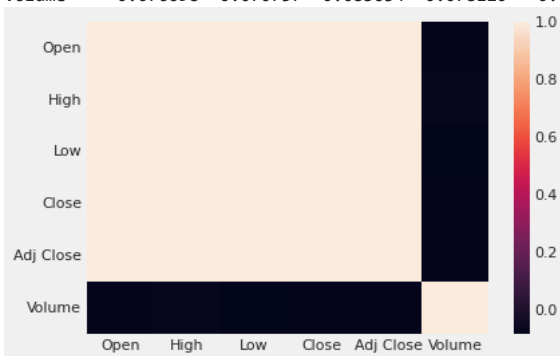

Step-4: Splitting Data into train and test data

```
x = data[["Open", "High", "Low"]]
y = data["Close"]
```

```
x = x.to_numpy()
y = y.to_numpy()
y = y.reshape(-1, 1)

from sklearn.model_selection import train_test_split
xtrain, xtest, ytrain, ytest = train_test_split(x, y, test_size=0.2, random_state=42)
```

Step-5: Applying machine learning model

```
from sklearn.tree import DecisionTreeRegressor
model = DecisionTreeRegressor()
model.fit(xtrain, ytrain)
ypred = model.predict(xtest)
data = pd.DataFrame(data={"Predicted Rate": ypred})
print(data.head())

        Predicted Rate
    0       106.029999
    1       231.600006
    2       257.170013
    3        88.000000
    4       104.269997
```