```
# Description: This program predicts the price of GOOG stock for a
               #specific day
#              using the Machine Learning algorithm called Support
               #Vector Regression (SVR)
#
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```
#Import the libraries
from sklearn.svm import SVR
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
plt.style.use('seaborn-darkgrid')
```

```
#Load the data
#from google.colab import files # Use to load data on Google Colab
#uploaded = files.upload() # Use to load data on Google Colab
df = pd.read_csv('GOOG.csv')
df
```

	Date	Open	High	Low	Close	Adj Close	Volume

```
actual_price = df.tail(1)
actual_price
```

	Date	Open	High	Low	Close	Adj Close	Volume
19	2021-05-28	2421.959961	2428.139893	2407.689941	2411.560059	2411.560059	1205400
	2021						

```
df = df.head(len(df)-1)
df
```

	Date	Open	High	Low	Close	Adj Close	Volume
0	2021-05-03	2402.719971	2419.699951	2384.500000	2395.169922	2395.169922	1689400
1	2021-05-04	2369.739990	2379.260010	2311.699951	2354.250000	2354.250000	1756000
2	2021-05-05	2368.419922	2382.199951	2351.409912	2356.739990	2356.739990	1090300
3	2021-05-06	2350.639893	2382.709961	2342.337891	2381.350098	2381.350098	1030900
4	2021-05-07	2400.000000	2416.409912	2390.000000	2398.689941	2398.689941	1163600
5	2021-05-10	2374.889893	2378.000000	2334.729980	2341.659912	2341.659912	1300300
6	2021-05-11	2291.860107	2322.000000	2283.000000	2308.760010	2308.760010	1605500
7	2021-05-12	2261.709961	2285.370117	2230.050049	2239.080078	2239.080078	1746700
8	2021-05-13	2261.090088	2276.601074	2242.719971	2261.969971	2261.969971	1333500
9	2021-05-14	2291.830078	2321.139893	2283.320068	2316.159912	2316.159912	1331200
10	2021-05-17	2309.320068	2323.340088	2295.000000	2321.409912	2321.409912	992100
11	2021-05-18	2336.906006	2343.149902	2303.159912	2303.429932	2303.429932	865100
	2021-						

```
#Create the lists / X and y data set
days = list()
adj_close_prices = list()


df_days = df.loc[:, 'Date']
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```
df_adj_close = df.loc[:, 'Adj Close']

#Create the independent data set
for day in df_days:
   days.append([int(str((day.split('-')[2]).replace('0','')))])

#Create the dependent data set
for adj_close_price in df_adj_close:
   adj_close_prices.append( float(adj_close_price) )


print(days)
```

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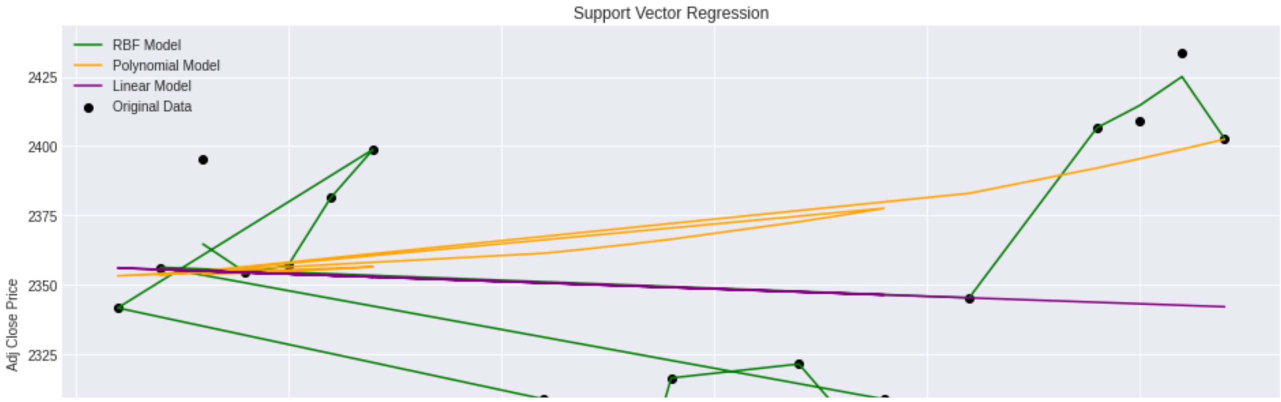
[[3], [4], [5], [6], [7], [1], [11], [12], [13], [14], [17], [18], [19], [2], [21],
```

```
#Create and train an SVR model using a linear kernel
lin_svr = SVR(kernel='linear', C=1000.0)
lin_svr.fit(days,adj_close_prices)#Create and train an SVR model using a polynomial kernel
poly_svr = SVR(kernel='poly', C=1000.0, degree=2)
poly_svr.fit(days, adj_close_prices)#Create and train an SVR model using a RBF kernel
rbf_svr = SVR(kernel='rbf', C=1000.0, gamma=0.15)
rbf_svr.fit(days, adj_close_prices)
```

```
SVR(C=1000.0, gamma=0.15)
```

```
#Plot the models on a graph to see which has the best fit
plt.figure(figsize=(16,8))
plt.scatter(days, adj_close_prices, color = 'black', label='Original Data')
plt.plot(days, rbf_svr.predict(days), color = 'green', label='RBF Model')
plt.plot(days, poly_svr.predict(days), color = 'orange', label='Polynomial Model')
plt.plot(days, lin_svr.predict(days), color = 'purple', label='Linear Model')
plt.xlabel('Days')
plt.ylabel('Adj Close Price')
plt.title('Support Vector Regression')
plt.legend()
plt.show()
```



```
day = [[30]]
print('The RBF SVR predicted:', rbf_svr.predict(day))
print('The Linear SVR predicted:', lin_svr.predict(day))
print('The Polynomial SVR predicted:', poly_svr.predict(day))
```

```
The RBF SVR predicted: [2321.8377539]
The Linear SVR predicted: [2340.35603224]
The Polynomial SVR predicted: [2413.98448669]
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