```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

```
df=pd.read_csv("/content/drive/MyDrive/datasets/bitcoin.csv")
df
```

	Date	Price
0	5/23/2019	7881.846680
1	5/24/2019	7987.371582
2	5/25/2019	8052.543945
3	5/26/2019	8673.215820
4	5/27/2019	8805.778320
...	...	...
362	5/19/2020	9729.038086
363	5/20/2020	9522.981445
364	5/21/2020	9081.761719
365	5/22/2020	9182.577148
366	5/23/2020	9180.045898

367 rows × 2 columns

```
df.head()
```

	Date	Price
0	5/23/2019	7881.846680
1	5/24/2019	7987.371582
2	5/25/2019	8052.543945
3	5/26/2019	8673.215820
4	5/27/2019	8805.778320

```
df.tail()
```

	Date	Price
362	5/19/2020	9729.038086
363	5/20/2020	9522.981445
364	5/21/2020	9081.761719
365	5/22/2020	9182.577148
366	5/23/2020	9180.045898

```
df.isna().sum()
```

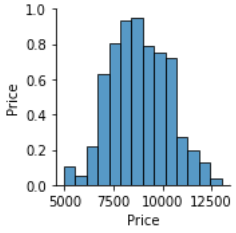
```
Date     0
Price    0
dtype: int64
```

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 367 entries, 0 to 366
Data columns (total 2 columns):
 #   Column  Non-Null Count  Dtype  
---  ------  --------------  -----  
 0   Date    367 non-null    object 
 1   Price   367 non-null    float64
dtypes: float64(1), object(1)
memory usage: 5.9+ KB
```

```
plt.figure(figsize=(14,10))
sns.pairplot(data=df)
plt.show()
```

```
<Figure size 1008x720 with 0 Axes>
```




```
df.drop(['Date'],axis=1,inplace=True)
df
```

	Price
0	7881.846680
1	7987.371582
2	8052.543945
3	8673.215820
4	8805.778320
...	...
362	9729.038086
363	9522.981445
364	9081.761719
365	9182.577148
366	9180.045898

367 rows × 1 columns

```
pday = 31
df['prediction']=df[['Price']].shift(-pday)
df
```

	Price	prediction
0	7881.846680	10855.37109
1	7987.371582	11011.10254
2	8052.543945	11790.91699
3	8673.215820	13016.23145
4	8805.778320	11182.80664
...	...	...
362	9729.038086	NaN
363	9522.981445	NaN
364	9081.761719	NaN
365	9182.577148	NaN
366	9180.045898	NaN

367 rows × 2 columns

```
df.tail()
```

	Price	prediction
362	9729.038086	NaN
363	9522.981445	NaN

```
x=np.array(df.drop(['prediction'],axis =1))
x=x[:len(df)-pday]
x
```

```
            [ 9870.303711],
            [ 9477.677734],
            [ 9552.860352],
            [ 9519.145508],
            [ 9607.423828],
            [10085.62793 ],
            [10399.66895 ],
            [10518.17481 ],
            [10821.72656 ],
            [10970.18457 ],
            [11805.65332 ],
            [11478.16895 ],
            [11941.96875 ],
            [11966.40723 ],
            [11862.93652 ],
            [11354.02441 ],
            [11523.5791  ],
            [11382.61621 ],
            [10895.83008 ],
            [10051.7041  ],
            [10311.5459  ],
            [10374.33887 ],
            [10231.74414 ],
            [10345.81055 ],
            [10916.05371 ],
            [10763.23242 ],
            [10138.04981 ],
            [10131.05566 ],
            [10407.96484 ],
            [10159.96094 ],
            [10138.51758 ],
            [10370.82031 ],
            [10185.5     ],
            [ 9754.422852],
            [ 9510.200195],
            [ 9598.173828],
            [ 9630.664063],
            [ 9757.970703],
            [10346.76074 ],
            [10623.54004 ],
            [10594.49316 ],
            [10575.5332  ],
            [10353.30273 ],
            [10517.25488 ],
            [10441.27637 ],
            [10334.97461 ],
            [10115.97559 ],
            [10178.37207 ],
            [10410.12695 ],
            [10360.54688 ],
            [10358.04883 ],
            [10347.71289 ],
            [10276.79395 ],
            [10241.27246 ],
            [10198.24805 ],
            [10266.41504 ],
            [10181.6416  ],
            [10019.7168  ],
            [10070.39258 ],
```

```
y=np.array(df['prediction'])
y=y[:-pday]
y
```

```
array([10855.37109 , 11011.10254 , 11790.91699 , 13016.23145 ,
       11182.80664 , 12407.33203 , 11959.37109 , 10817.15527 ,
       10583.13477 , 10801.67773 , 11961.26953 , 11215.4375  ,
       10978.45996 , 11208.55078 , 11450.84668 , 12285.95801 ,
       12573.8125  , 12156.5127  , 11358.66211 , 11815.98633 ,
       11392.37891 , 10256.05859 , 10895.08984 ,  9477.641602,
        9693.802734, 10666.48242 , 10530.73242 , 10767.13965 ,
       10599.10547 , 10343.10645 ,  9900.767578,  9811.925781,
        9911.841797,  9870.303711,  9477.677734,  9552.860352,
```

```
 9519.145508,  9607.423828, 10085.62793 , 10399.66895 ,
10518.17481 , 10821.72656 , 10970.18457 , 11805.65332 ,
11478.16895 , 11941.96875 , 11966.40723 , 11862.93652 ,
11354.02441 , 11523.5791  , 11382.61621 , 10895.83008 ,
10051.7041  , 10311.5459  , 10374.33887 , 10231.74414 ,
10345.81055 , 10916.05371 , 10763.23242 , 10138.04981 ,
10131.05566 , 10407.96484 , 10159.96094 , 10138.51758 ,
10370.82031 , 10185.5     ,  9754.422852,  9510.200195,
 9598.173828,  9630.664063,  9757.970703, 10346.76074 ,
10623.54004 , 10594.49316 , 10575.5332  , 10353.30273 ,
10517.25488 , 10441.27637 , 10334.97461 , 10115.97559 ,
10178.37207 , 10410.12695 , 10360.54688 , 10358.04883 ,
10347.71289 , 10276.79395 , 10241.27246 , 10198.24805 ,
10266.41504 , 10181.6416  , 10019.7168  , 10070.39258 ,
 9729.324219,  8620.566406,  8486.993164,  8118.967773,
 8251.845703,  8245.915039,  8104.185547,  8293.868164,
 8343.276367,  8393.041992,  8259.992188,  8205.939453,
 8151.500488,  7988.155762,  8245.623047,  8228.783203,
 8595.740234,  8586.473633,  8321.756836,  8336.555664,
 8321.005859,  8374.686523,  8205.369141,  8047.526855,
 8103.911133,  7973.20752 ,  7988.560547,  8222.078125,
 8243.720703,  8078.203125,  7514.671875,  7493.48877 ,
 8660.700195,  9244.972656,  9551.714844,  9256.148438,
 9427.6875  ,  9205.726563,  9199.584961,  9261.104492,
 9324.717773,  9235.354492,  9412.612305,  9342.527344,
 9360.879883,  9267.561523,  8804.880859,  8813.582031,
 9055.526367,  8757.788086,  8815.662109,  8808.262695,
 8708.094727,  8491.992188,  8550.760742,  8577.975586,
 8309.286133,  8206.145508,  8027.268066,  7642.75    ,
 7296.577637,  7397.796875,  7047.916992,  7146.133789,
 7218.371094,  7531.663574,  7463.105957,  7761.243652,
 7569.629883,  7424.29248 ,  7321.988281,  7320.145508,
 7252.034668,  7448.307617,  7546.996582,  7556.237793,
 7564.345215,  7400.899414,  7278.119629,  7217.427246,
 7243.134277,  7269.68457 ,  7124.673828,  7152.301758,
 6932.480469,  6640.515137,  7276.802734,  7202.844238,
 7218.816406,  7191.158691,  7511.588867,  7355.628418,
 7322.532227,  7275.155762,  7238.966797,  7290.088379,
 7317.990234,  7422.652832,  7292.995117,  7193.599121,
 7200.174316,  6985.470215,  7344.884277,  7410.656738,
 7411.317383,  7769.219238,  8163.692383,  8079.862793,
 7879.071289,  8166.554199,  8037.537598,  8192.494141,
 8144.194336,  8827.764648,  8807.010742,  8723.786133,
 8929.038086,  8942.808594,  8706.245117,  8657.642578,
 8745.894531,  8680.875977,  8406.515625,  8445.43457 ,
 8367.847656,  8596.830078,  8909.819336,  9358.589844,
 9316.629883,  9508.993164,  9350.529297,  9392.875   ,
 9344.365234,  9293.521484,  9180.962891,  9613.423828,
 9729.801758,  9795.943359,  9865.119141, 10116.67383
```

```
from sklearn.model_selection import train_test_split
xtrain,xtest,ytrain,ytest=train_test_split(x,y,test_size=.30,random_state=2)
pd_array=np.array(df.drop(['prediction'],axis=1))[:31]
pd_array
```

```
array([[ 7881.84668 ],
       [ 7987.371582],
       [ 8052.543945],
       [ 8673.21582 ],
       [ 8805.77832 ],
       [ 8719.961914],
       [ 8659.487305],
       [ 8319.472656],
       [ 8574.501953],
       [ 8564.016602],
       [ 8742.958008],
       [ 8208.995117],
       [ 7707.770996],
       [ 7824.231445],
       [ 7822.023438],
       [ 8043.951172],
       [ 7954.12793 ],
       [ 7688.077148],
       [ 8000.32959 ],
       [ 7927.714355],
       [ 8145.857422],
       [ 8230.923828],
       [ 8693.833008],
       [ 8838.375   ],
       [ 8994.488281],
       [ 9320.352539],
       [ 9081.762695],
       [ 9273.521484],
       [ 9527.160156],
```

```
            [10144.55664 ],
            [10701.69141 ]])
```

```
from sklearn.svm import SVR
rbf=SVR(kernel='rbf', C=1e3, gamma=0.00001)
rbf.fit(xtrain,ytrain)
```

```
SVR(C=1000.0, gamma=1e-05)
```

```
ypred=rbf.predict(xtest)
ypred
```

```
array([ 8192.68472846,  8394.09790238,  7369.81300927,  9095.76431084,
        8409.47221331,  8384.46510418,  9200.08780352,  9418.33676949,
        9399.931077  ,  8120.0289368 ,  8210.48215429,  8498.55306989,
        9199.82415879,  9384.01519834,  8642.83029044,  8360.46251757,
        9424.60265631,  8381.06252515,  7957.9066053 ,  9286.17102072,
        7373.11879255, 10107.09648525,  9076.72703499,  8532.58736185,
        8704.24392319,  8259.45785205,  8700.51987179,  8933.0962491 ,
        8904.67185472,  8913.79929938,  9222.38598162,  8228.64120208,
       10251.93540835,  7816.66292128,  8595.29990347,  7786.05199406,
        8369.15389203,  9246.96270491,  8231.95043282,  8245.21210878,
        8356.90801522,  8179.95206842,  8368.30839932,  9077.79815736,
        7501.01763913,  8329.99806907,  7411.01752626, 10930.27523917,
        8522.90442279,  9080.81508635,  8338.07740311,  8790.02204398,
        8008.4035956 ,  8662.60263294,  8002.32750099,  7768.05959887,
        7707.68764805,  7753.11947953,  8943.6226229 , 10570.05927785,
        8811.45067426,  9227.10977073,  8284.52086868,  8099.33466261,
        8942.98548174,  9037.48880063,  7587.13641072,  8627.39745095,
        8334.71168594,  9231.47635783,  9232.31908547,  8223.93155281,
        9275.17203098, 10559.51467224,  9265.25856721,  9402.59171154,
       10360.12084234,  7453.8117267 ,  8293.18700591,  9204.83514423,
        8539.88248909,  8917.50457973,  9425.2677042 ,  7489.54608326,
        9366.55675956,  7660.58614662, 10155.56379047,  9049.22938557,
        8120.65442868,  8326.62531273,  8030.70543127,  7862.42169167,
        8621.43389648,  9238.10062117,  7383.39913664,  7403.77264991,
        8215.34171229,  9202.9699312 ,  8730.8021278 ,  8245.5840324 ,
        9012.85299391])
```

```
next30=rbf.predict(pd_array)
next30
```

```
array([ 8952.77943964,  9359.38372038,  9425.2677042 ,  8700.51987179,
        8014.40330924,  8460.34972772,  8766.4404633 ,  9200.08780352,
        9090.64529823,  9118.37118648,  8338.07740311,  9265.25856721,
        7816.66292128,  8595.29990347,  8580.41822052,  9423.72593653,
        9272.14235069,  7707.68764805,  9383.10084659,  9175.37512053,
        9350.09741267,  9240.89299242,  8596.93254982,  7862.42169167,
        7371.37725653,  7768.05959887,  7271.51889762,  7585.65690956,
        8400.73965237,  8231.95043282, 10107.09648525])
```

```
print(next30)
print()
print(df.tail(pday))
```

```
[ 8952.77943964  9359.38372038  9425.2677042   8700.51987179
  8014.40330924  8460.34972772  8766.4404633   9200.08780352
  9090.64529823  9118.37118648  8338.07740311  9265.25856721
  7816.66292128  8595.29990347  8580.41822052  9423.72593653
  9272.14235069  7707.68764805  9383.10084659  9175.37512053
  9350.09741267  9240.89299242  8596.93254982  7862.42169167
  7371.37725653  7768.05959887  7271.51889762  7585.65690956
  8400.73965237  8231.95043282 10107.09648525]

           Price  prediction
336  7429.724609         NaN
337  7550.900879         NaN
338  7569.936035         NaN
339  7679.867188         NaN
340  7795.601074         NaN
341  7807.058594         NaN
342  8801.038086         NaN
343  8658.553711         NaN
344  8864.766602         NaN
345  8988.596680         NaN
346  8897.468750         NaN
347  8912.654297         NaN
348  9003.070313         NaN
349  9268.761719         NaN
```

```
350  9951.518555        NaN
351  9842.666016        NaN
352  9593.896484        NaN
353  8756.430664        NaN
354  8601.795898        NaN
355  8804.477539        NaN
356  9269.987305        NaN
357  9733.721680        NaN
358  9328.197266        NaN
359  9377.013672        NaN
360  9670.739258        NaN
361  9726.575195        NaN
362  9729.038086        NaN
363  9522.981445        NaN
364  9081.761719        NaN
365  9182.577148        NaN
366  9180.045898        NaN
```