linear-regression-sm

February 10, 2025

1 Linear Regression

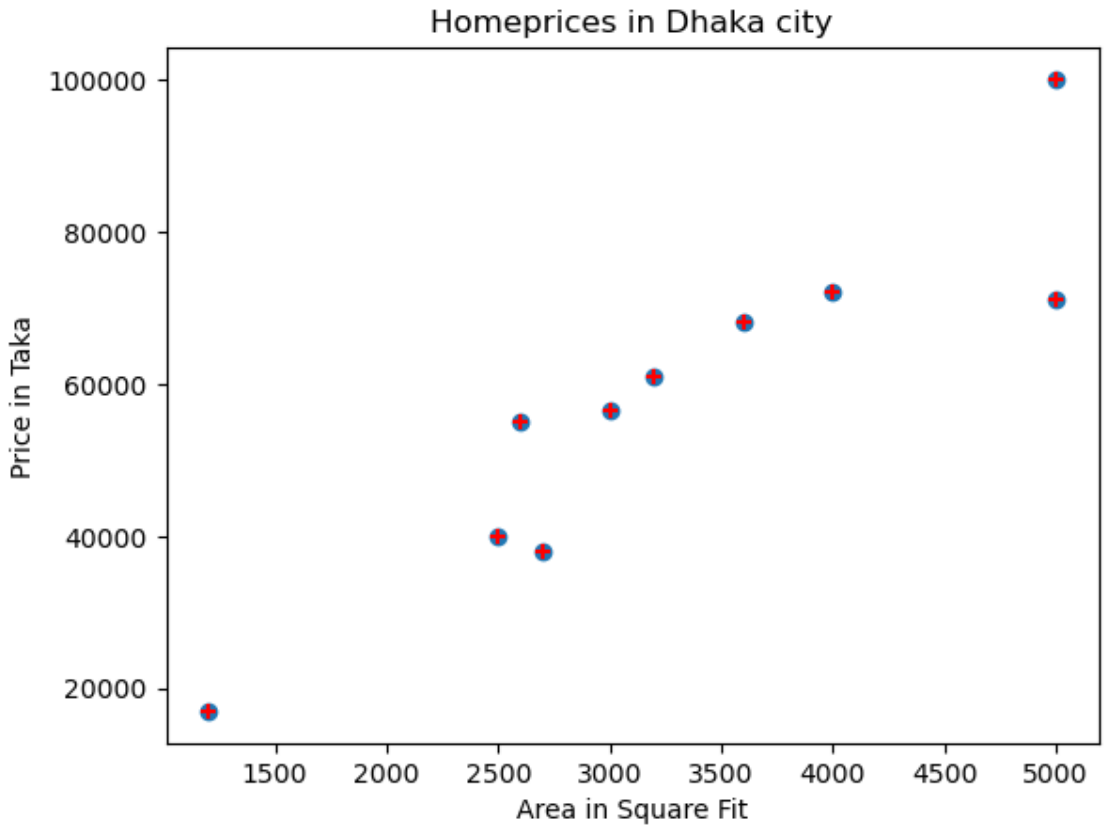
[48]:
```
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
```

[14]:
```
plt.xlabel('Area in Square Fit')
plt.ylabel('Price in Taka')

plt.scatter(df['area'],df['price'])
plt.scatter(df['area'], df['price'],color='red', marker='+')

plt.title('Homeprices in Dhaka city')
plt.plot()
```

[14]:
```
[]
```



[52]:
```
df= pd.read_csv('dhaka homeprices.csv')
#df = pd.read_csv ('Shopping_cse15_16.csv')
```

[53]:
```
df
```

[53]:

	area	price
0	2600	55000
1	3000	56500
2	3200	61000
3	3600	68000
4	4000	72000
5	5000	71000
6	2500	40000
7	2700	38000
8	1200	17000
9	5000	100000

[7]:
```
df.head()
```

[7]:
```
   area  price
0  2600  55000
1  3000  56500
2  3200  61000
3  3600  68000
4  4000  72000
```

[8]:
```
df.head(3)
```

[8]:
```
   area  price
0  2600  55000
1  3000  56500
2  3200  61000
```

[8]:
```
x = df[['area']]
y = df['price']
```

[33]:
```
xtrain, xtest, ytrain, ytest = train_test_split(x, y, test_size = 0.40,␣
↪random_state =1)

#xtest

#xtrain
```

[34]:
```
xtest

#xtrain
```

[34]:
```
   area
2  3200
9  5000
6  2500
4  4000
```

[35]:
```
xtrain
```

[35]:
```
   area
0  2600
3  3600
1  3000
7  2700
8  1200
5  5000
```

[36]:
```
ytest
```

[36]:
```
2     61000
9    100000
6     40000
4     72000
Name: price, dtype: int64
```

[37]:
```
from sklearn.linear_model import LinearRegression
```

[38]:
```
reg=  LinearRegression ()
```

[39]:
```
reg.fit(xtrain,ytrain)
```

[39]:
```
LinearRegression()
```

[40]:
```
LinearRegression ()
```

[40]:
```
LinearRegression()
```

[45]:
```
reg.score(xtest,ytest)
```

[45]:
```
0.7182056168655752
```

[42]:
```
#Time youtube 36.42
reg.predict([[3300]])
```

```
C:\ProgramData\anaconda3\Lib\site-packages\sklearn\base.py:464: UserWarning: X
does not have valid feature names, but LinearRegression was fitted with feature
names
  warnings.warn(
```

[42]:
```
array([55021.66064982])
```

[43]:
```
reg.predict([[3200]])
```

```
C:\ProgramData\anaconda3\Lib\site-packages\sklearn\base.py:464: UserWarning: X
does not have valid feature names, but LinearRegression was fitted with feature
names
  warnings.warn(
```

[43]:
```
array([53572.839244])
```

[44]:
```
reg.predict([[2850]])
```

```
C:\ProgramData\anaconda3\Lib\site-packages\sklearn\base.py:464: UserWarning: X
does not have valid feature names, but LinearRegression was fitted with feature
names
  warnings.warn(
```

[44]: array([48501.96432364])