PC19

March 23, 2020

[1]:
```
import numpy as np                              #importing libraries
import pandas as pd
import matplotlib.pyplot as plt
```

[4]:
```
data = pd.read_csv('Real estate.csv')       #uploading dataset
```

[5]:
```
data
```

[5]:
```
      No  X1 transaction date  X2 house age  \
0      1             2012.917          32.0
1      2             2012.917          19.5
2      3             2013.583          13.3
3      4             2013.500          13.3
4      5             2012.833           5.0
..   …                   …           …
409  410             2013.000          13.7
410  411             2012.667           5.6
411  412             2013.250          18.8
412  413             2013.000           8.1
413  414             2013.500           6.5

     X3 distance to the nearest MRT station  X4 number of convenience stores  \
0                                  84.87882                               10
1                                 306.59470                                9
2                                 561.98450                                5
3                                 561.98450                                5
4                                 390.56840                                5
..                                      …                                …
409                              4082.01500                                0
410                                90.45606                                9
411                               390.96960                                7
412                               104.81010                                5
413                                90.45606                                9

     X5 latitude  X6 longitude  Y house price of unit area
0       24.98298     121.54024                        37.9
1       24.98034     121.53951                        42.2
```

```
2       24.98746     121.54391                      47.3
3       24.98746     121.54391                      54.8
4       24.97937     121.54245                      43.1
..           …            …                       …
409     24.94155     121.50381                      15.4
410     24.97433     121.54310                      50.0
411     24.97923     121.53986                      40.6
412     24.96674     121.54067                      52.5
413     24.97433     121.54310                      63.9

[414 rows x 8 columns]
```

[15]:
```
x = data.iloc[:,2:3].values                #house age column
x
```

[15]:
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```

[21]:
```
y = data.iloc[:,7:8].values          #house price of unit area column
y
```

[21]:
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```
       [ 63.9]])
```

[22]:
```
from sklearn.linear_model import LinearRegression                    #importing
 ↪classes
```

[23]:
```
classifier = LinearRegression()                                      #creating model
```

[24]:
```
classifier.fit(x,y)                                                  #training the
 ↪model
```

[24]:
```
LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)
```

[25]:
```
classifier.coef_                                                     #gives 'b0'
 ↪coefficient
```

[25]:
```
array([[-0.25148842]])
```

[26]:
```
classifier.intercept_                                                #gives 'b1'
 ↪coefficient
```

[26]:
```
array([42.43469705])
```

[27]:
```
classifier.score(x,y)*100
```

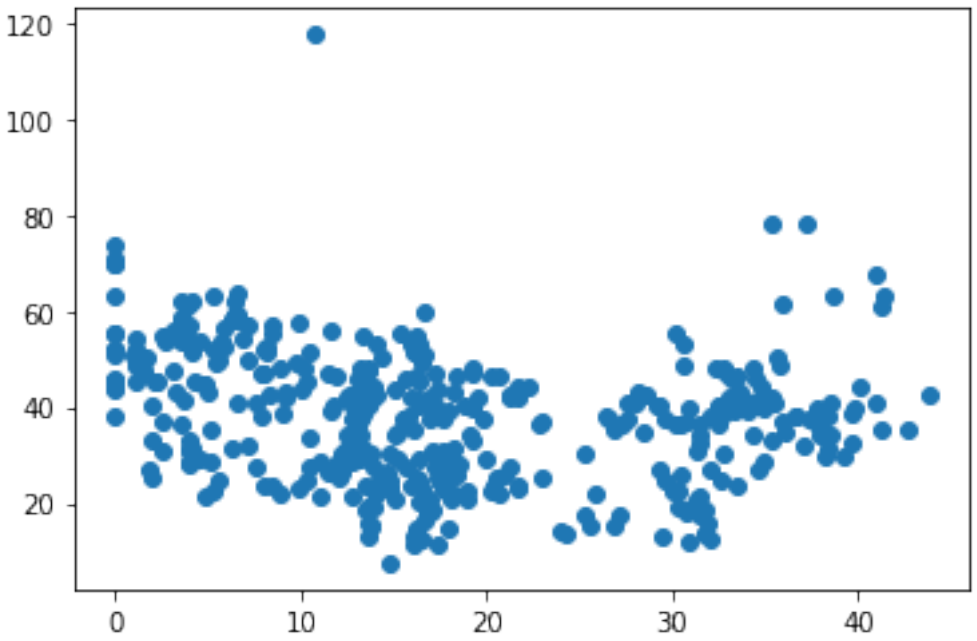
[27]:
```
4.433848097791171
```

[28]:
```
y_pred = classifier.predict([[40]])                                  #prediction
 ↪function
y_pred
```

[28]:
```
array([[32.37516028]])
```

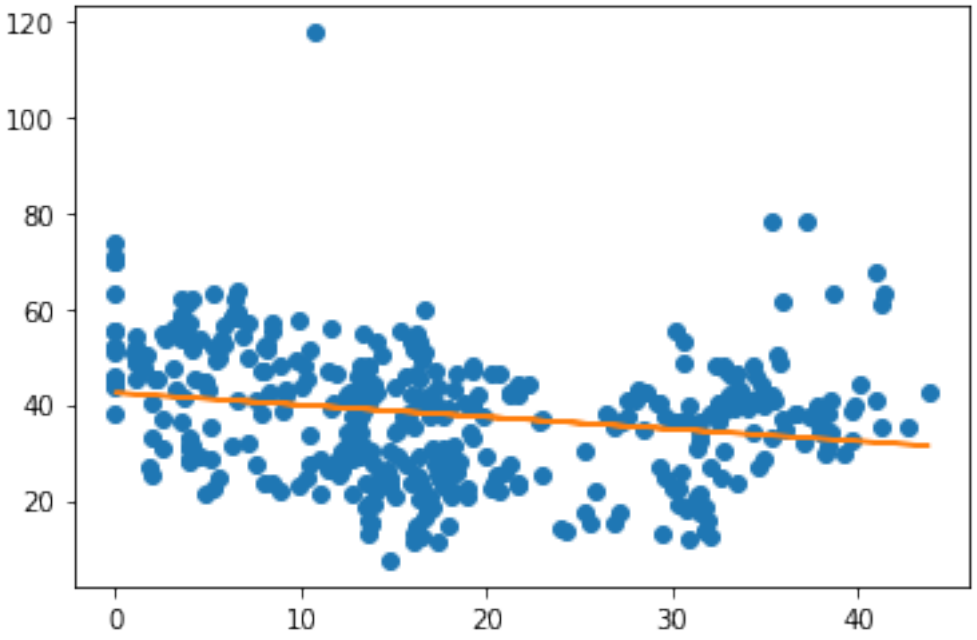
[29]:
```
plt.plot(x,y,'o')                                                    #plotting the
 ↪data
```

[29]:
```
[<matplotlib.lines.Line2D at 0x7f03cc30b0d0>]
```



[31]:
```
plt.plot(x,y,'o')
plt.plot(x,classifier.predict(x))                    #plotting the prediction
```

[31]: [<matplotlib.lines.Line2D at 0x7f03cc288390>]



[ ]: