

Untitled2.ipynb

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[1] import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

[2] loc = "/content/sales.txt"

df=pd.read_csv(loc, sep="\s+", header=None)

[3] print(df.shape)

(36, 2)

[4] df.head()
df.columns=["sales","advertising"]

[5] df.head()
df.describe()

sales advertising

count	36.000000	36.000000
mean	24.255556	28.527778
std	6.185118	18.777625
min	12.000000	1.000000
25%	20.300000	15.750000

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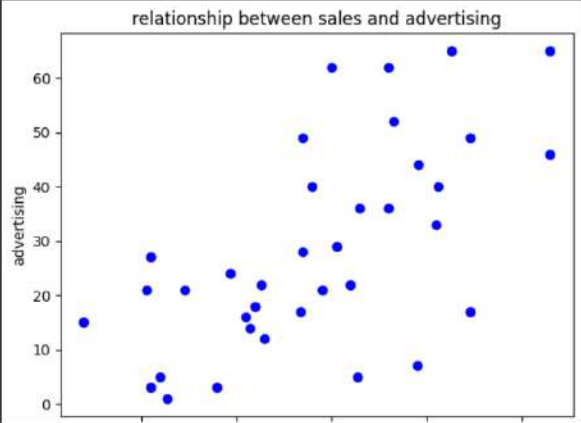
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[6] x=df["sales"].values
y=df["advertising"].values

▶

plt.scatter(x,y, color='blue',label='scatter plot')
plt.title("relationship between sales and advertising")
plt.xlabel("sales")
plt.ylabel("advertising")
plt.show()

relationship between sales and advertising



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Untitled2.ipynb - Colaboratory

https://colab.research.google.com/drive/1L0mHhVUKbQ2LLk3zACWj07Oioa3IHb6a#scrollTo=Zhx8eO3EQfqb

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```
[8] x.shape
y.shape

(36,)
```

```
[9] x=x.reshape(-1,1)
y=y.reshape(-1,1)
```

```
x.shape
y.shape

(36, 1)
```

```
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.33,random_state=42)
```

```
[12] print(x_train.shape)
print(x_test.shape)
print(y_train.shape)
print(y_test.shape)

(24, 1)
(12, 1)
(24, 1)
(12, 1)
```

```
[13] from sklearn.linear_model import LinearRegression

lm = LinearRegression()
```

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[13] from sklearn.linear_model import LinearRegression

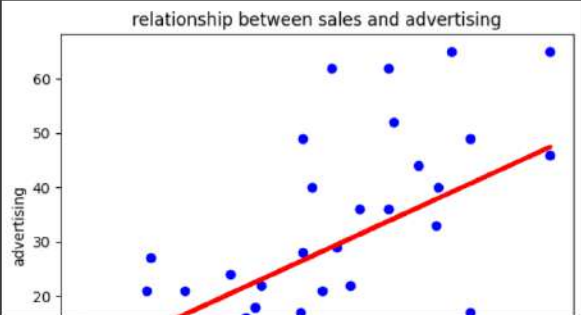
lm = LinearRegression()

lm.fit(x_train,y_train)

y_pred = lm.predict(x_test)

1s

plt.scatter(x,y, color='blue',label='scatter plot')
plt.plot(x_test,y_pred, color='red', linewidth=3)
plt.title("relationship between sales and advertising")
plt.xlabel("sales")
plt.ylabel("advertising")
plt.show()



The scatter plot displays the relationship between advertising and sales. The x-axis is labeled 'sales' and the y-axis is labeled 'advertising'. The plot shows a positive correlation, with a red regression line indicating the trend. The data points are blue circles.

sales	advertising
10	20
15	25
20	30
25	35
30	40
35	45
40	50
45	55
50	60
55	65
60	70
65	75
70	80
75	85
80	90
85	95
90	100
95	105
100	110

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