

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

df=pd.read_csv( '/content/tvmarketing.csv' )

df.head()
```

	TV	Sales
0	230.1	22.1
1	44.5	10.4
2	17.2	9.3
3	151.5	18.5
4	180.8	12.9

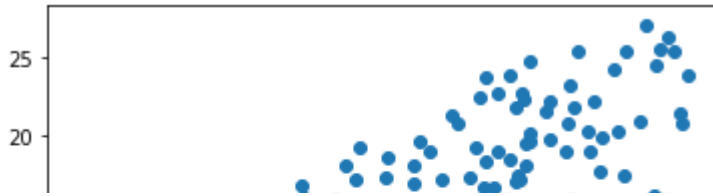
```
df.describe()
```

	TV	Sales
count	200.000000	200.000000
mean	147.042500	14.022500
std	85.854236	5.217457
min	0.700000	1.600000
25%	74.375000	10.375000
50%	149.750000	12.900000
75%	218.825000	17.400000
max	296.400000	27.000000

```
x=df[ "TV" ]
y=df[ "Sales" ]

plt.scatter(x,y)
```

<matplotlib.collections.PathCollection at 0x7ffb4ccc0c90>



```
from sklearn.model_selection import train_test_split
```

```
x_train, x_test, y_train, y_test=train_test_split(x,y,train_size=0.7)
```

```
def linear_regression(x,y):
```

```
    x_mean=x.mean()
    y_mean=y.mean()
    b1num= ((x-x_mean)*(y-y_mean)).sum()
    b1den = ((x-x_mean)*(x-x_mean)).sum()
    b1= b1num/b1den
    b0= y_mean- x_mean*b1
    reg_line= 'y= {} + {}x' .format(b0,b1)
    return(b0,b1,reg_line)
```

```
b0,b1,reg_line = linear_regression(x_train, y_train)
```

```
print("Regresssion line", reg_line)
```

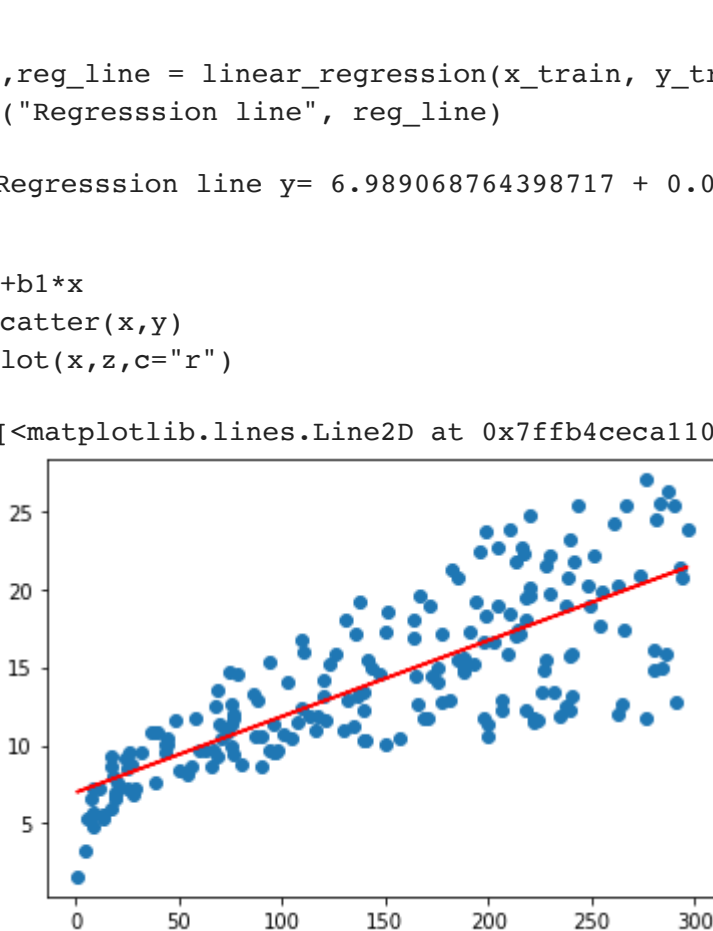
```
Regresssion line y= 6.989068764398717 + 0.04860387259879957x
```

```
z= b0+b1*x
```

```
plt.scatter(x,y)
```

```
plt.plot(x,z,c="r")
```

[<matplotlib.lines.Line2D at 0x7ffb4ceca110>]



[Colab paid products](#) - [Cancel contracts here](#)

✓ 0s completed at 3:02 PM

