

```
In [1]: import numpy as np
import pandas as pd
```

```
In [2]: import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [3]: df=pd.read_csv('C://Users//ALWAYS RAMESH//Downloads//Advertising.csv')
```

```
In [4]: df
```

```
Out[4]:
```

	Unnamed: 0	TV	Radio	Newspaper	Sales
0	1	230.1	37.8	69.2	22.1
1	2	44.5	39.3	45.1	10.4
2	3	17.2	45.9	69.3	9.3
3	4	151.5	41.3	58.5	18.5
4	5	180.8	10.8	58.4	12.9
...
195	196	38.2	3.7	13.8	7.6
196	197	94.2	4.9	8.1	9.7
197	198	177.0	9.3	6.4	12.8
198	199	283.6	42.0	66.2	25.5
199	200	232.1	8.6	8.7	13.4

200 rows × 5 columns

```
In [5]: data=df.drop('Unnamed: 0',axis=1)
```

```
In [6]: x = data.drop('Radio',axis=1)
y = data['Radio']
```

```
In [7]: x
```

Out[7]:

	TV	Newspaper	Sales
0	230.1	69.2	22.1
1	44.5	45.1	10.4
2	17.2	69.3	9.3
3	151.5	58.5	18.5
4	180.8	58.4	12.9
...
195	38.2	13.8	7.6
196	94.2	8.1	9.7
197	177.0	6.4	12.8
198	283.6	66.2	25.5
199	232.1	8.7	13.4

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195	38.2	13.8	7.6
196	94.2	8.1	9.7
197	177.0	6.4	12.8
198	283.6	66.2	25.5
199	232.1	8.7	13.4

200 rows × 3 columns

In [8]: `y`

Out[8]:

0	37.8
1	39.3
2	45.9
3	41.3
4	10.8
...	...
195	3.7
196	4.9
197	9.3
198	42.0
199	8.6

Name: Radio, Length: 200, dtype: float64

In [9]: `from sklearn.model_selection import train_test_split`

In [10]: `X_train, X_test, y_train, y_test = train_test_split(x, y, test_size = 0.3, random_s`

In [11]: `from sklearn.linear_model import LinearRegression`
`model = LinearRegression()`
`model.fit(X_train,y_train)`

Out[11]:

LinearRegression ⓘ ?

LinearRegression()

In [12]: `y_pred=model.predict(X_test)`

In [13]: `y_pred`

```
Out[13]: array([ 2.82088039e+01,  2.14324685e+01,  2.77523547e+01,  4.79342692e+01,
  4.62834587e+01,  2.42811361e+01,  1.86460834e+01,  5.50882776e+01,
  4.42577874e+01,  2.82668648e+01,  4.55779297e+01,  1.41449918e+01,
  2.70075775e+01,  3.51484580e+01,  3.40113970e+01,  2.90528350e+01,
  2.58807805e+01,  1.03804003e+01,  3.75720322e+01,  4.71368103e+01,
  2.07080960e+01, -4.09517518e+00,  4.58388537e+01,  3.90635870e+01,
  1.79980239e+00,  1.74026256e+01,  2.41386626e+01,  2.65896423e+01,
  4.33931116e+01,  1.78041502e+01,  2.09161833e+01,  3.92598659e+01,
  1.37371394e+01,  1.59050109e+01, -9.04932464e+00, -9.82604214e+00,
  1.16153190e+01,  1.03382406e+00,  1.88989123e+01, -2.10015103e+00,
  2.68476365e+01,  2.28512052e+01,  2.63312151e+01,  2.21304405e+01,
  5.21116769e+01,  2.16178640e+01,  1.74636415e+01,  3.77274233e+00,
  1.27219960e+01,  1.61848602e+01,  1.90117523e+01,  7.17872395e+00,
  4.06713938e+01,  3.47733393e+01, -1.85100436e-02,  1.41425267e+01,
  5.38921985e+01,  3.15433212e+01,  1.19804960e+01,  1.92709184e+01])
```

In [14]: `y_pred=model.predict([[230.1,69.2,22.1]])`

C:\ProgramData\anaconda3\Lib\site-packages\sklearn\base.py:493: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
warnings.warn(

In [15]: `y_pred`

```
Out[15]: array([43.51723837])
```

In [16]: `y_pred=model.predict([[44.5,45.1,10.4]])`

C:\ProgramData\anaconda3\Lib\site-packages\sklearn\base.py:493: UserWarning: X does not have valid feature names, but LinearRegression was fitted with feature names
warnings.warn(

In [17]: `y_pred`

```
Out[17]: array([26.5896423])
```

In [18]: `amitcybrom@gmail.com`

```
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NameError                                Traceback (most recent call last)
Cell In[18], line 1
----> 1 amitcybrom@gmail.com

NameError: name 'amitcybrom' is not defined
```

In []:

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