Exp-3

Model planning and Building

Aim:

To describe the model planning and building of the whole data set.

code:

```
import pandas as pd
import matplotlib. pyplot as plt
import sealorn as sns
from sklearn linear_model import linear Regression
from sklearn metrices_selection import from_test split
from sklearn preprocessing import standard scaler.
df = pd.read _csv ('advertising.csv')
print (df.head())
print (df .described)]
X = df [TV, 'Radio', 'Newspaper']]
y = df ['sales']
# split data
x.train, y-test, y-train, y-test = train-test _ split
              (x, y, test _size =0.2, random_sh =0)

model = Linear Regression()
model . fit (x-train, y-train)
y-pred = model . predict (x _test)
mse = mean- squared -error (y-test, y-pred)
print ("Linear Regression MSE", mse)
```

	TV	Radio	Newspaper	Sales
0	230.1	37.8	69.2	22.1
1	44.5	39.3	45.1	10.4
2	17.2	45.9	69.3	12.0
3	151.5	41.3	58.5	16.5
4	180.8	10.8	58.4	17.9

	TV	Radio	Newspaper	Sales
count	200.0000	200.0000	200 000000	200.0000
mean	147.042500	23.26400	30.55400	18.130500
std	85.84236	14.846809	21.778621	5.28852
min	0.700000	0.00000	0.30000	1.600007
25%	79.3373000	9.975000	12.7800000	11.00000
50%	149.780000	22.90000	25.750000	16.00000
max	296.40000	47.60000	114.00000	27.0000

Exp 3

Aim:

To

Code:

```
plt. figure ( fig size =(8,5) )
sns . Scatterplot ( x = y-test , y = y-plot)
plt . x_label ( 'Actual sales')
plt . y-label ( 'predicted sale )
plt . title ( "Linear Regression: A ctual vs predictable')
plt . show()

 Kmean = kMean ( n-cluster = 3, random - stel =0)
 df [ 'cluster' ] = kman . fit _ predictale ( scaled)
 plt. figure ( fig size = 8, 6))
 sns . scatter plot ( data = df , x = 'TV', Y = 'sales',
                      hue = 'cluster' , Pale = 'sol :')

 plt . show()
```

Result:

The program has been executed successfully.