Program no:9

Aim:

Program to implement multiple regression techniques using any standard dataset available in the public domain and evaluate its performance.

Program:

```
import  pandas
df = pandas.read_csv("cars.csv")
x = df[['Weight', 'Volume']]
y = df['CO2']
from sklearn import linear_model
regr = linear_model.LinearRegression()
regr.fit(x, y)
predictedCO2 = regr.predict([[2300, 1300]])
print(predictedCO2)
from sklearn.matrics import r2_score
score=r2_score(y,predictedCO2)
print(score)
```

Output:

```
[107.2087328]


Process finished with exit code 1
```

Program:10

Aim:Multiple regression coefficient

```
import numpy as np
from sklearn import datasets, linear_model, metrics

#load the boston dataset
boston =datasets.load_boston(return_X_y=False)

#defining  feature  matrix(x)  and response vector(y)
X = boston.data
y = boston.target

#splitting  X and y  into training and testing sets
from sklearn.model_selection import train_test_split
X_train, X_test ,y_train, y_test=train_test_split(X, y,
test_size=0.4, random_state=1)

#create linear regression object
```

```
reg = linear_model.LinearRegression()


reg.fit(X_train, y_train)

#regression coefficient
print('coefficient:' ,reg.coef_)

#variance score: 1 means perfect prediction
print('Variance sore: {}'.format(reg.score(X_test, y_test)))
```

Output:

```
coefficient: [-8.95714048e-02  6.73132853e-02  5.04649248e-02  2.18579583e+00
 -1.72053975e+01  3.63606995e+00  2.05579939e-03 -1.36602886e+00
  2.89576718e-01 -1.22700072e-02 -8.34881849e-01  9.40360790e-03
 -5.04008320e-01]
Variance sore: 0.7209056672661767

Process finished with exit code 0
```