PROGRAM NO : 10

AIM : Program to implement multiple regression techniques using any standard dataset available in the public domain and evaluate its performance (Using Without Builtin Function)

PROGRAM

```
import matplotlib.pyplot as plt
from sklearn import datasets,linear_model, metrics

boston=datasets.load_boston(return_X_y=False)

x=boston.data
y=boston.target

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)

reg=linear_model.LinearRegression()

reg.fit(x_train,y_train)

y_pred=reg.predict(x_test)
print('Prediction',y_pred)

print('Coefficeint : ',reg.coef_)

print('Variance scores : {}'.format(reg.score(x_test,y_test)))
```

OUTPUT

```
Prediction [23.67134888 21.74030058 18.99758813 25.48956674 33.81448    31.89278927
 10.78199818 11.76948128 41.56280351 25.3473233  24.372034   14.11450302
 12.40701286 27.20234921 23.43737274 32.84466914 23.60842764 32.59259513
 23.85004238 19.7314527  20.45440867 27.35630269 12.76780542 25.66660897
 29.72807157 22.15357852 30.19079303 16.04994832 28.39033945 14.35377707
 15.2366864  38.21896987 13.04273791 27.6805403  26.50783112 25.62615724
 25.38748819  6.18021821 23.83088365 39.44655193 17.18940017 35.30999805
 24.69974917  8.64460222 19.30224429 24.60568703 27.33660161  8.98033395
 23.69649295 19.01882711 29.95786303 24.28410874 25.0816296  21.47294993
 28.49968875  8.70205993 24.15032296 20.61644917 14.02028429 24.78978901
 28.82338698 25.38068056 23.46418288 22.310027   18.46758923 31.59220845
 15.36426251 20.47409342 30.44748162 36.1446885  32.21339274 16.96687201
 24.11087371 19.05568856 22.82152205 10.98287887  6.17771783  9.24239709
 15.64598693 20.63845804 33.63461858 24.08390253 32.35812922 26.61566412
 26.31571754 21.9784763  32.83918789 13.11679982 22.05714618 26.07450531
 20.03929014 30.62756585 31.36584349 27.00634194 31.2587809  10.26099249
 32.51975394 14.547433   29.30997208 24.76376686 20.66108026 21.37869093
 22.68461713 34.77810512 43.99628487 15.70849322 17.52320688 27.80934545
 20.75472888 17.49201269 18.03966614 35.70078381 12.76119622 38.97422809
  7.68925202 19.4931839  41.32259643 28.48332245 39.14616263 13.84700912
 23.11796205 21.25534719 26.62699789 37.98747407 23.72747822 30.68819329
```

```
 22.4086301  14.21437607 31.65769069 15.32061751 17.74804611  9.69417308
 24.26986084 22.15086613 10.01444493 39.73186967 22.97980241 11.67661997
 21.06713213  1.50437144 19.73119136 17.42220953 20.10684724 27.64309473
 35.94944206 18.39398149 13.3431956  22.96380391 16.99239185]
Coefficeint :  [-1.18523476e-01  3.79842025e-02  5.01458926e-03  3.46020042e+00
 -1.38245151e+01  3.77221309e+00 -2.63157836e-02 -1.40793915e+00
  2.64788312e-01 -1.08549788e-02 -7.87130516e-01  1.00651827e-02
 -4.66957118e-01]
Variance scores : 0.7465776075198429

Process finished with exit code 0
```