Program no :6

Aim : Program to implement linear and multiple regression techniques using any standard dataset available in the public domain and evaluate its performance(using inbuilt function)

Program

```
import numpy as np
from sklearn.linear_model import LinearRegression
x=np.array([5,15,25,35,45,55]).reshape((-1,1))
y=np.array([5,20,14,32,22,38])
print(x)
print(y)
model=LinearRegression()
model.fit(x,y)
r_sq = model.score(x,y)
print('coefficent of determination :',r_sq)
print('intercept :',model.intercept_)
print('slope:',model.coef_)
y_pred=model.predict(x)
print('predicted response:',y_pred)
plt.scatter(x,y,color="m",
        marker="o", s=30)

plt.plot(x,y_pred,color="g")
plt.xlabel('x')
plt.ylabel('y')

plt.show()
```

OUTPUT

```
C:\Users\mca\PycharmProjectspython\pythonproject-ML\venv\Scripts\python.exe C:/Users/mca/PycharmProjectspyt
[[ 5]
 [15]
 [25]
 [35]
 [45]
 [55]]
[ 5 20 14 32 22 38]
coefficent of determination : 0.7158756137479542
intercept : 5.633333333333329
slope: [0.54]
predicted response: [ 8.33333333 13.73333333 19.13333333 24.53333333 29.93333333 35.33333333]

Process finfinished with exit code 0
```