PROGRAM NO : 7

AIM : Program to implement linear and multiple regression techniques using any standard dataset available in the public domain and evaluate its performance (Using Builtin Function)

and Plot

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("Coeffient of determination : ",r_sq)
print("Intercept : ",model.intercept_)
print("Slope : ",model.coef_)

y_pred=model.predict(x)

print("Predicting Responce : ",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\ajcemca\AppData\Local\Programs\Python\Python39\python.exe C:/Users/ajcemca/PycharmProjects/pythonProject/pythonProjec
[[ 5]
 [15]
 [25]
 [35]
 [45]
 [55]]
[ 5 20 14 32 22 38]
Coeffient of determination :  0.7158756137479542
Intercept :  5.633333333333329
Slope :  [0.54]
Predicting Responce :  [ 8.33333333 13.73333333 19.13333333 24.53333333 29.93333333 35.33333333]

Process finished with exit code 0
```

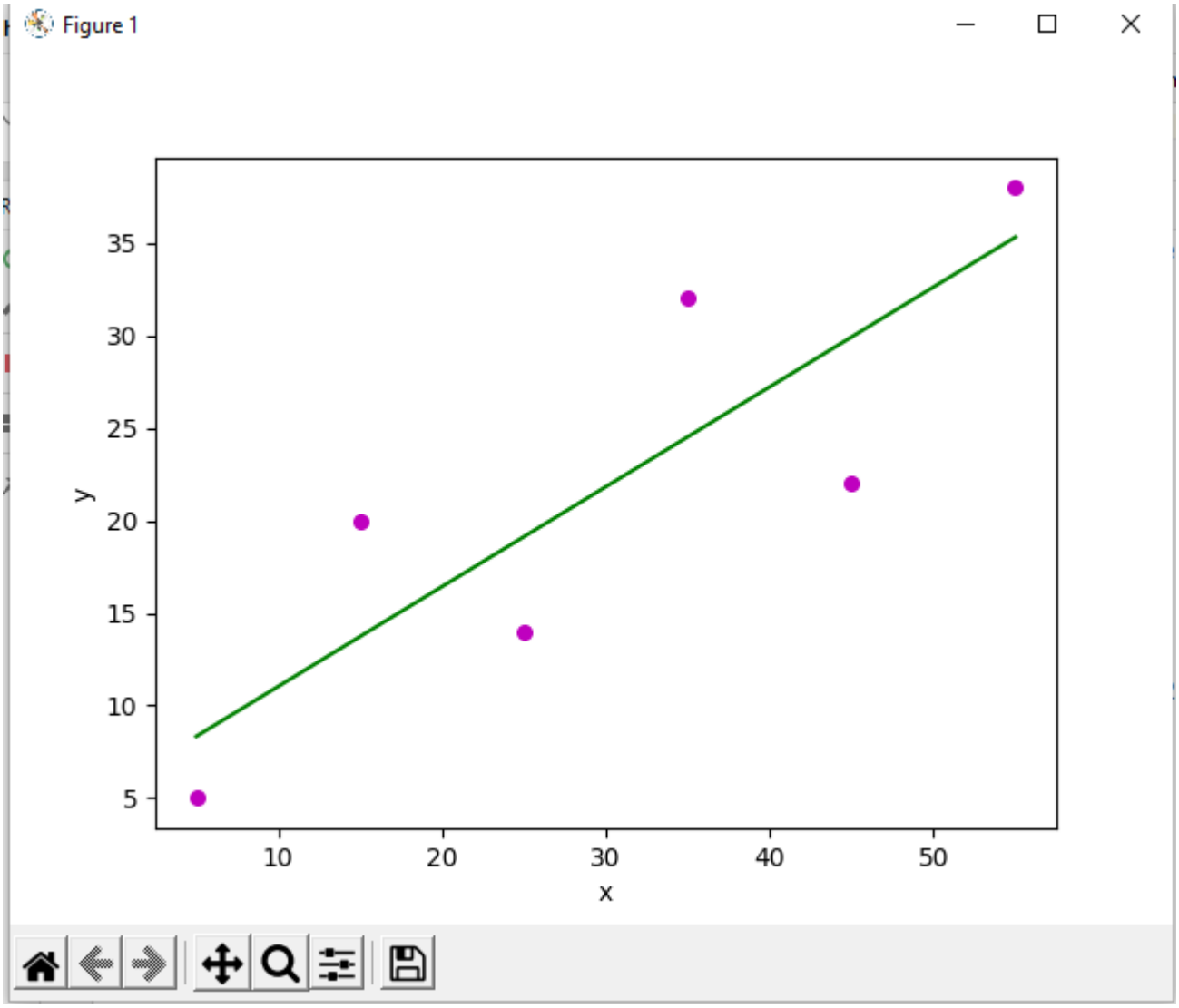
Figure 1
35
30
25
20
15
10
5
y
10
20
30
40
50
x