# Project 2: Linear Regression

```
import numpy as np

#x=hours of learning , y=score of the students
x=np.array([1,2,3,4,5])
y=np.array([2,4,5,4,5])

#Finding mean of x and y
x_mean = np.mean(x)
y_mean = np.mean(y)

print("Mean value of Hours:",x_mean)
print("Mean Value of Score:" ,y_mean)

#To find slope m
numerator = np.sum((x-x_mean)*(y-y_mean))
denominator = np.sum((x-x_mean)**2)

m=numerator/denominator
print("The slope m=",m)

#To find intercept c
c = y_mean - m*x_mean
print("The intercept c=",c)

#Equation and Prediction:
print(f"Equation y= {m:.2f}x + {c:.2f}")
x_new = float(input("Enter the x(hours of learning) value for
prediction:"))
predicted_y = m*x_new + c
print("Predicted y(score) value is:\n", predicted_y)


Mean value of Hours: 3.0
Mean Value of Score: 4.0
The slope m= 0.6
The intercept c= 2.2
Equation y= 0.60x + 2.20
Enter the x(hours of learning) value for prediction:19.7
Predicted y(score) value is:
 14.02
```