

PAREENITA A.SHIRSATH B.E.A.I.&.D.S. ROLL.NO : 57

BDA EXPERIMENT NO : 09

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# Import libraries
import numpy as np
from sklearn.linear_model import LinearRegression
import matplotlib.pyplot as plt

# Sample data (X: independent variable, y: dependent variable)
X = np.array([1, 2, 5, 4, 8, 10]).reshape(-1, 1)
y = np.array([6, 4, 2, 8, 6, 9])

# Create Linear Regression model
model = LinearRegression()
model.fit(X, y)

# Predict values
y_pred = model.predict(X)

# Print coefficients
print("Slope (m):", model.coef_[0])
print("Intercept (b):", model.intercept_)

# Plot the line
plt.scatter(X, y, color='green', label='Actual')
plt.plot(X, y_pred, color='violet', label='Predicted')
plt.xlabel('X')
plt.ylabel('y')
plt.title('Linear Regression')
plt.legend()
plt.show()
```

Slope (m): 0.3166666666666667
Intercept (b): 4.25

