```
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression

# Generate sample data
np.random.seed(0)
X = np.linspace(0, 10, 100).reshape(-1, 1)
y = 2 * X + 1 + np.random.randn(100, 1)

# Create linear regression object
lr_model = LinearRegression()

# Train the model using the training sets
lr_model.fit(X, y)

# Print the coefficients
print('Coefficients: ', lr_model.coef_)
print('Intercept: ', lr_model.intercept_)

# Plot the data and the linear regression line
plt.scatter(X, y, color='blue')
plt.plot(X, lr_model.predict(X), color='red', linewidth=3)
plt.title('Linear Regression')
plt.xlabel('X')
plt.ylabel('y')
plt.show()
```

```
Python 3.10.11 (tags/v3.10.11:7d4cc5a, Apr  5 2023, 00:38:17) [MSC v.1929 64 bit
(AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:\Users\Raghul\Desktop\ML\Linear Regression(8).py =========
Coefficients:  [[1.97026731]]
Intercept:  [1.20847145]
```

IDLE Shell 3.10.11

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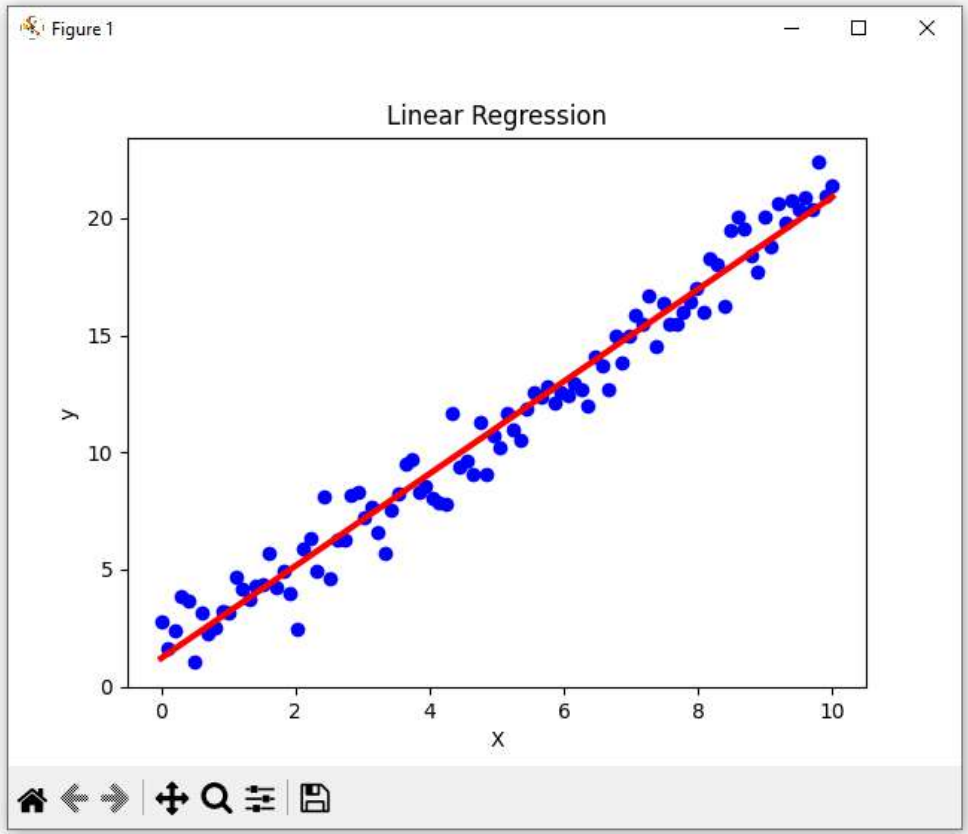

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