

```

# Import necessary libraries
from sklearn.datasets import make_blobs, make_regression
from sklearn.cluster import KMeans
from sklearn.linear_model import LinearRegression
import matplotlib.pyplot as plt
import numpy as np

# -----
# K-MEANS CLUSTERING
# -----
# Generate synthetic dataset
X_cluster, _ = make_blobs(n_samples=300, centers=4, cluster_std=0.60, random_state=0)

# Apply K-Means clustering
kmeans = KMeans(n_clusters=4, random_state=0)
kmeans.fit(X_cluster)
y_kmeans = kmeans.predict(X_cluster)

# Output cluster centers
print("K-Means Clustering")
print("Cluster Centers:")
print(kmeans.cluster_centers_)

# -----
# LINEAR REGRESSION
# -----
# Generate synthetic regression data
X_reg, y_reg = make_regression(n_samples=100, n_features=1, noise=15, random_state=0)

# Apply Linear Regression
lin_reg = LinearRegression()
lin_reg.fit(X_reg, y_reg)
y_pred = lin_reg.predict(X_reg)

# Output coefficients
print("\nLinear Regression")
print("Coefficient:", lin_reg.coef_[0])
print("Intercept:", lin_reg.intercept_)

# -----
# OUTPUT
# -----
K-Means Clustering
Cluster Centers:
[[ 1.98258281  0.86771314]
 [ 0.94973532  4.41906906]
 [-1.37324398  7.75368871]
 [-1.58438467  2.83081263]]

Linear Regression
Coefficient: 42.73639300914142
Intercept: -1.221272740546088

```