1.Linear Regression (Supervised Learning)

import numpy as np

from sklearn.linear\_model import LinearRegression

# Sample Data

X = np.array([[1], [2], [3], [4], [5]])

y = np.array([2, 4, 6, 8, 10])

# Model

model = LinearRegression()

model.fit(X, y)

print("Coefficient:", model.coef\_)

print("Intercept:", model.intercept\_)

print("Prediction for 6:", model.predict([[6]]))

**2. Logistic Regression (Classification)**

from sklearn.linear\_model import LogisticRegression

from sklearn.datasets import load\_iris

# Dataset

iris = load\_iris()

X, y = iris.data, iris.target

# Model

clf = LogisticRegression(max\_iter=200)

clf.fit(X, y)

print("Predicted:", clf.predict([X[0]]))

print("Actual:", y[0])

**3. K-Means Clustering (Unsupervised Learning)**

from sklearn.cluster import KMeans

from sklearn.datasets import make\_blobs

# Data

X, \_ = make\_blobs(n\_samples=100, centers=3, random\_state=42)

# Model

kmeans = KMeans(n\_clusters=3)

kmeans.fit(X)

print("Cluster Centers:\n", kmeans.cluster\_centers\_)

print("Labels:", kmeans.labels\_[:10])

**4. Decision Tree Classifier**

from sklearn.tree import DecisionTreeClassifier

from sklearn.datasets import load\_iris

# Dataset

iris = load\_iris()

X, y = iris.data, iris.target

# Model

clf = DecisionTreeClassifier()

clf.fit(X, y)

print("Prediction:", clf.predict([X[0]])