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**K-Means Clustering Algorithm**

**Aim:**

To implement the **K-Means Clustering Algorithm** in Python to group unlabeled data into **k clusters** based on similarity, demonstrating the use of unsupervised learning techniques in artificial intelligence for pattern recognition and data segmentation..

**CODE:**

from sklearn.cluster import KMeans

import numpy as np

import matplotlib.pyplot as plt

X = np.array([[1, 2], [1.5, 1.8], [5, 8],

[8, 8], [1, 0.6], [9, 11]])

kmeans = KMeans(n\_clusters=2, random\_state=0)

kmeans.fit(X)

centroids = kmeans.cluster\_centers\_

labels = kmeans.labels

colors = ["g", "r"]

for i in range(len(X)):

plt.scatter(X[i][0], X[i][1], c=colors[labels[i]])

plt.scatter(centroids[:, 0], centroids[:, 1], s=200, c='b', marker='X')

plt.title("K-Means Clustering")

plt.show()

**RESULT:**

The K-mean Classifier was successfully implemented.