**Experiment 8: K-means Algorithm**

**Aim**

To implement K-means clustering algorithm.

**Procedure**

1. Initialize k centroids.  
2. Assign points to the nearest centroid.  
3. Update centroids based on mean of points.  
4. Repeat until convergence.

**Code**

from sklearn.cluster import KMeans  
import numpy as np  
  
X = np.array([[1,2],[1,4],[1,0],  
 [10,2],[10,4],[10,0]])  
kmeans = KMeans(n\_clusters=2)  
kmeans.fit(X)  
print("Centroids:", kmeans.cluster\_centers\_)  
print("Labels:", kmeans.labels\_)

**Output**

