**EX.NO:10**

**Reg.no:220701061**

## IMPLEMENTATION OF CLUSTERING TECHNIQUES K – MEANS

**AIM:**

To implement a K - Means clustering technique using python language.

**EXPLANATION:**

• Import KMeans from sklearn.cluster

• Assign X and Y.

• Call the function KMeans().

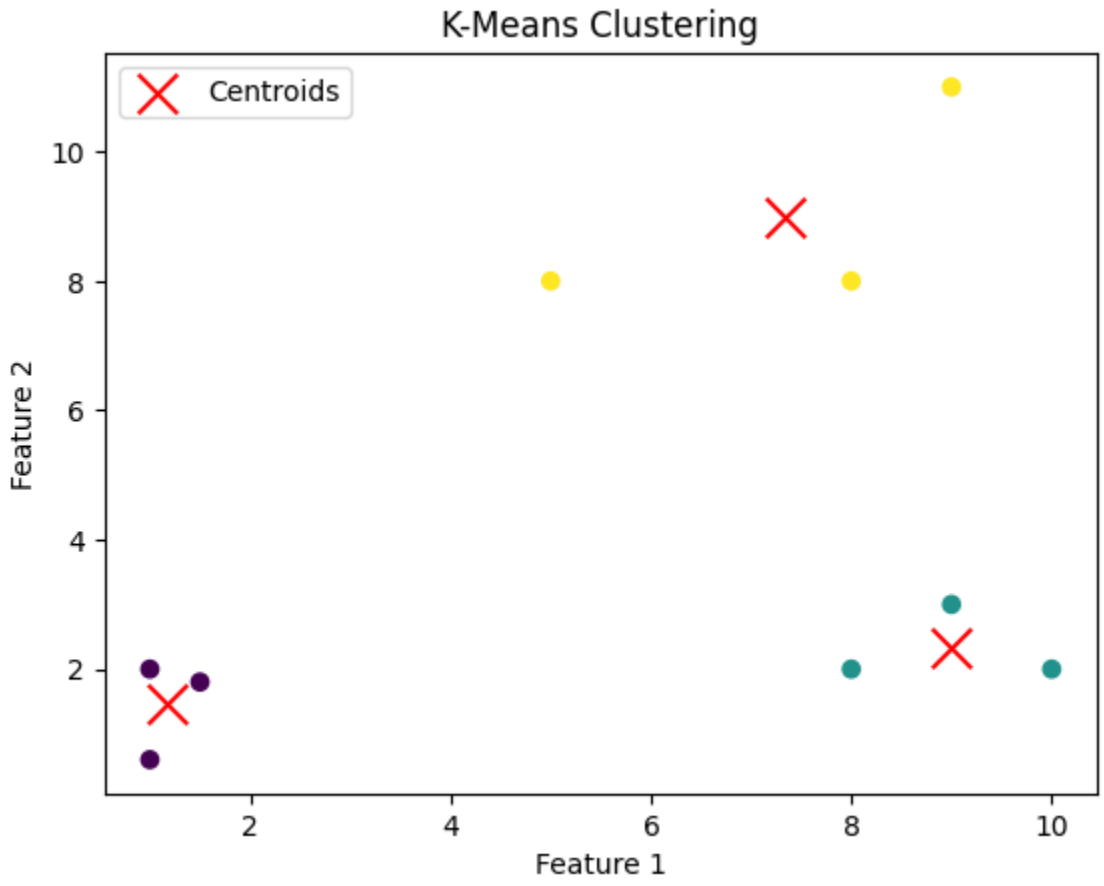
• Perform scatter operation and display the output**.**

## CODE:

```
import numpy as np

import matplotlib.pyplot as plt
from sklearn.cluster import KMeans

X = np.array([
    [1, 2], [1.5, 1.8], [5, 8], [8, 8], [1, 0.6], [9, 11], [8, 2], [10,
2], [9, 3]
])


kmeans = KMeans(n_clusters=3)

kmeans.fit(X)

centroids = kmeans.cluster_centers_
labels = kmeans.labels_

plt.scatter(X[:, 0], X[:, 1], c=labels, cmap='viridis', marker='o')
```

```
plt.scatter(centroids[:, 0], centroids[:, 1], c='red', s=200, marker='x',
label='Centroids')

plt.title('K-Means Clustering')
plt.xlabel('Feature 1')
plt.ylabel('Feature 2')
plt.legend()
plt.show()
```

**OUTPUT:**




220701061-DHANASREE

RESULT:

THUS THE PROGRAM for K MEANS CLUSTERING IS DONE SUCCESSFULLY.