Ex: No: 14	Implementation of clustering
Date:	Techniques K-Means.

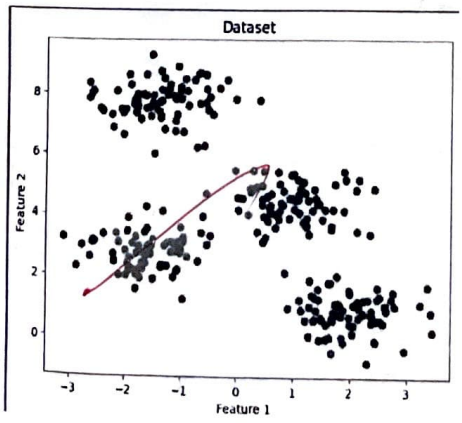
Program code:

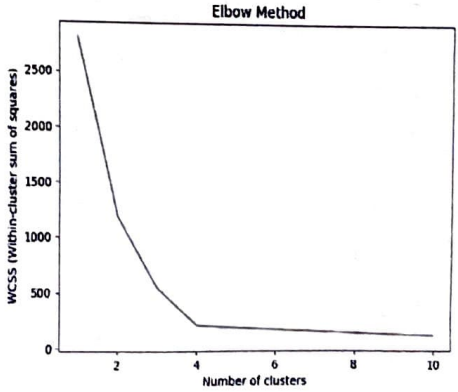
Import python necessary libraries

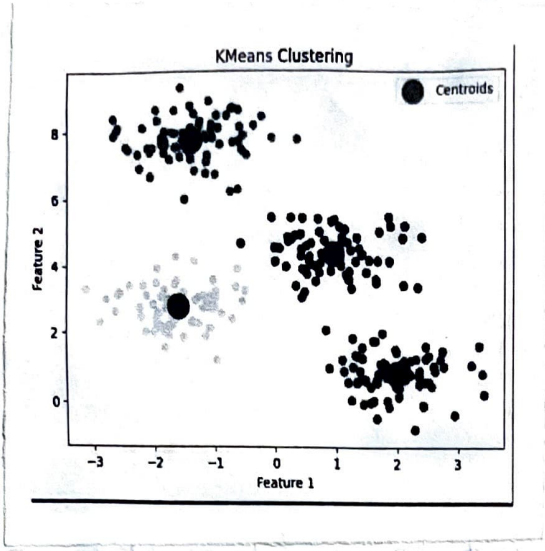
```
X, y = make_blobs ( n_samples = 300, centers = 4,
cluster_std = 0.60, random_state = 0)

plt.scatter (X[:,0], X[:, 1])
plt.title ('Dataset')
plt.xlabel ('feature 1')
plt.ylabel ('feature 2')
plt.show().

wcss = []
for i in range (1, 11):
  Kmeans = KMeans ( n_clusters = i, init = 'k-means++',
max_iter = 300, n_init = 10, random_state = 0)
  Kmeans.fit(X)
  wcss.append ( Kmeans.inertia_)
```

```
plt.plot(range(1,11), wcss)
plt.title('Elbow Method')
plt.xlabel('Number of clusters')
plt.ylabel('wcss')
plt.show()

kmeans = kMeans(n_clusters=4, init='k-means++',
max_iter=300, n_init=10, random_state=0)
pred_y = kmeans.fit_predict(x)
plt.xlabel('Feature 1')
plt.ylabel('Feature 2')
plt.legend()
plt.show()
```

output:







Result :

Thus, the output is successfully executed & the output is verified.