

technique using python language.

Code:

```
import numpy as np
import pandas as pd
from matplotlib lib import pyplot as plt
from sklearn.datasets.samples_generator import make_blobs
from sklearn.cluster import KMeans
X, y = make_blobs(n_samples=300, centers=4,
                  cluster_std=0.60, random_state=0)
plt.scatter(X[:, 0], X[:, 1])
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,
```

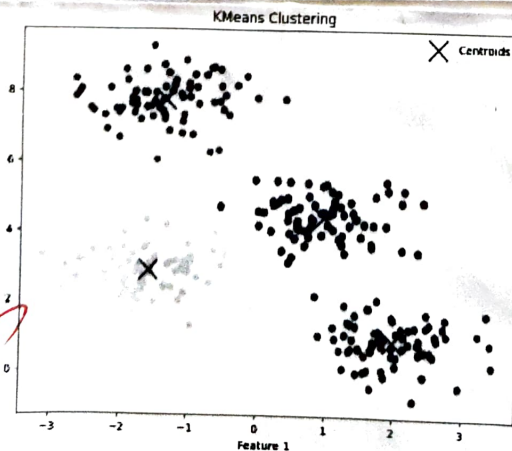
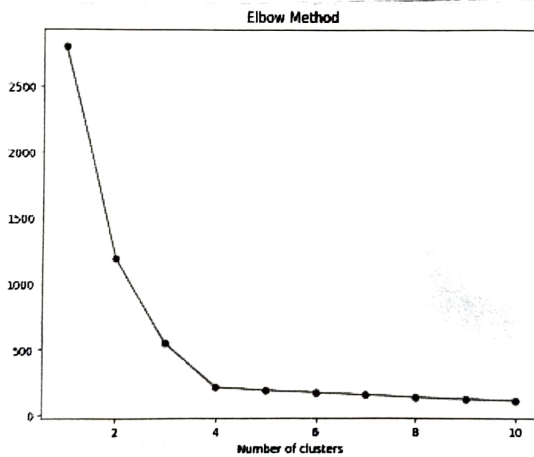
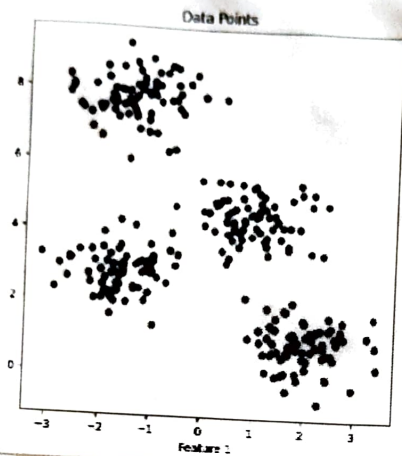
```
                init='k-means++', max_iter=300,
```

```
                n_init=10, random_state=0)
```

```
kmeans.fit(X)
```

plt. Scatter (kmeans . cluster . centers - L: 0.7,  
kmeans . cluster - centers L: 1.7, S=300,  
c = 'red')

plt. show()



Result : Implementation of Clustering technique Kmeans is executed successfully