

EX NO : 14 .

Implementation of Clustering

AIM To implement a k-mean clustering technique using python.

SOURCE CODE :-

```
import numpy as np.  
import pandas as pd.  
from matplotlib import pyplot as plt.  
from sklearn.datasets import samples_generator  
import matplotlib.pyplot as plt.  
X, y = samples_generator(n_samples=50,  
                          centers=4, random_state=0)  
wcss = []  
for i in range(1, 11):  
    kmeans = KMeans(n_clusters=i,  
                     init='k-means++',  
                     max_iter=300,  
                     tol=1e-4, verbose=1)  
    kmeans.fit(X)  
    wcss.append(kmeans.inertia_)  
plt.plot(range(1, 11), wcss)  
plt.title('WCSS vs Number of Clusters')  
plt.xlabel('Number of Clusters')  
plt.ylabel('WCSS')  
plt.show()
```

plt = scatter(kmeans cluster centers

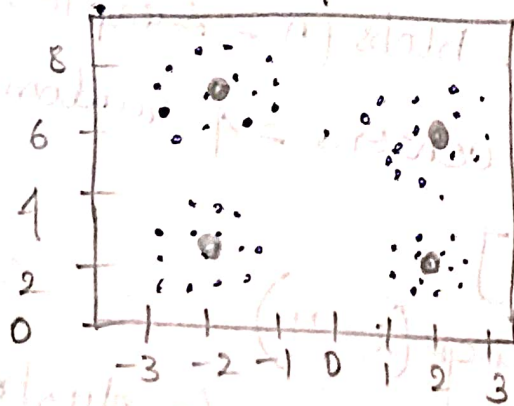
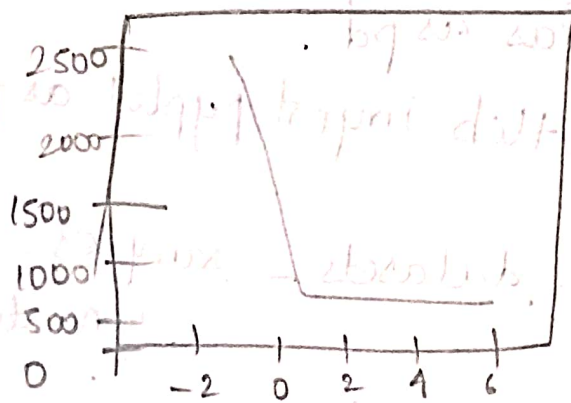
[: 0] kmeans.

cluster - center [: , 1] = 300.

c = 'red')

plt . show ()

OUTPUT .



Result :

Thus the program is successfully executed and output is verified.