```python
In [ ]:   1  #Write a Program for Fuzzy c-means clustering in python
          2  #MCA-I                              Lab on VII(A)Machine Learning
```

```python
In [2]:   1  # on command prompt run the command >pip install scikit-fuzzy
          2  import numpy as np
          3  import skfuzzy as fuzz
          4  from skfuzzy import control as ctrl
          5
```

```python
In [3]:   1  # Generate some example data
          2  np.random.seed(0)
          3  data = np.random.rand(100, 2)
          4
```

```python
In [4]:   1  # Define the number of clusters
          2  n_clusters = 3
          3
```

```python
In [5]:   1  # Apply fuzzy c-means clustering
          2  cntr, u, u0, d, jm, p, fpc = fuzz.cluster.cmeans(data.T, n_clusters, 2, error=0.005, maxiter=1(
          3
```

```python
In [6]:   1  # Predict cluster membership for each data point
          2  cluster_membership = np.argmax(u, axis=0)
          3
```

```python
In [7]:   1  # Print the cluster centers
          2  print('Cluster Centers:', cntr)
          3
```

```
Cluster Centers: [[0.22645397 0.71840176]
 [0.52083891 0.18668653]
 [0.76252289 0.60239021]]
```

```python
In [8]:   1  # Print the cluster membership for each data point
          2  print('Cluster Membership:', cluster_membership)
          3
```

```
Cluster Membership: [2 2 0 0 2 2 2 1 0 2 2 0 0 0 1 0 0 0 2 2 1 1 2 1 1 2 1 1 1 1 1 0 1 1 2 2
 1 1 1 1 0 1 1 2 0 0 1 1 1 1 2 0 2 0 0 1 2 2 2 2 2 0 0 1 2 1 2 2 2 2 0 2 0
 2 0 0 0 2 1 2 2 2 2 0 1 1 1 1 0 1 0 1 2 2 1 1 0 2 1 0]
```

```python
In [ ]:   1
```