```python
import pandas as pd
import numpy as np
from sklearn.cluster import KMeans

points = pd.read_csv("Kmeans.csv")
```

In [29]:

```python
points
```

Out[29]:

	x	y
0	0.10	0.60
1	0.15	0.71
2	0.08	0.90
3	0.16	0.85
4	0.20	0.30
5	0.25	0.50
6	0.24	0.10
7	0.30	0.20

In [30]:

```python
initial_centriods = np.array([
    [0.1,0.6],
    [0.3,0.2]
],np.float64)
```

In [31]:

```python
initial_centriods
```

Out[31]:

```
array([[0.1, 0.6],
       [0.3, 0.2]])
```

In [32]:

```python
km = KMeans(n_clusters=2,init=initial_centriods,n_init=1)
km.fit(points)
```

Out[32]:

```
KMeans(init=array([[0.1, 0.6],
       [0.3, 0.2]]), n_clusters=2, n_init=1)
```

In [33]:

```python
print(km.labels_)
```

```
[0 0 0 0 1 0 1 1]
```

Which cluster does P6 belong to?

In [34]:

```python
cluster_index = km.labels_[5]                          #array is 0 indexed, so P6 will be
present at 5th index
```

```
print("P6 belongs to cluster {}".format(cluster_index+1))
```

P6 belongs to cluster 1

What is the population of cluster around m2?

In [35]:

```
count=0
for i in km.labels_:
    if i == 1:                              # "1" represents 2nd(M2) cluster
        count+=1
print("Population of Cluster around M2 is {}".format(count))
```

Population of Cluster around M2 is 3

What is updated value of m1 and m2?

In [36]:

```
print("Updated values of M1 and M2 are {} and {} respectively".format(km.cluster_centers_
[0],km.cluster_centers_[1]))
```

Updated values of M1 and M2 are [0.148 0.712] and [0.24666667 0.2   ] respectively

In [ ]: