

## EXPERIMENT NO. 6

```
data = [2,3,4,10,11,12,20,25,30]
k=2
c1=4
c2=12
k1=[]
k2=[]
prevk1=[0]
i=0
j=0

print("Initial c1 = ",c1)
print("Initial c2 = ",c2)
print("No. of clusters =",k)

while(prevk1 != k1):
    prevk1 = k1
    k1=[]
    k2=[]
    j=j+1
    print()
    print("Iteration",j,":")

    for i in data:
        if((abs(c1-i)) < (abs(c2-i))):
            k1.append(i)
        else:
            k2.append(i)

    print("k1 =",k1)
    print("k2 =",k2)

    c1= round(sum(k1) / len(k1))
    print("c1 =",c1)
    c2 = round(sum(k2) / len(k2))
    print("c2 =",c2)
```

```
➤ Initial c1 = 4
  Initial c2 = 12
  No. of clusters = 2
```

```
Iteration 1 :
k1 = [2, 3, 4]
k2 = [10, 11, 12, 20, 25, 30]
c1 = 3
c2 = 18
```

```
Iteration 2 :
k1 = [2, 3, 4, 10]
k2 = [11, 12, 20, 25, 30]
c1 = 5
c2 = 20
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Iteration 3 :
k1 = [2, 3, 4, 10, 11, 12]
k2 = [20, 25, 30]
c1 = 7
c2 = 25
```

```
Iteration 4 :
k1 = [2, 3, 4, 10, 11, 12]
k2 = [20, 25, 30]
c1 = 7
c2 = 25
```