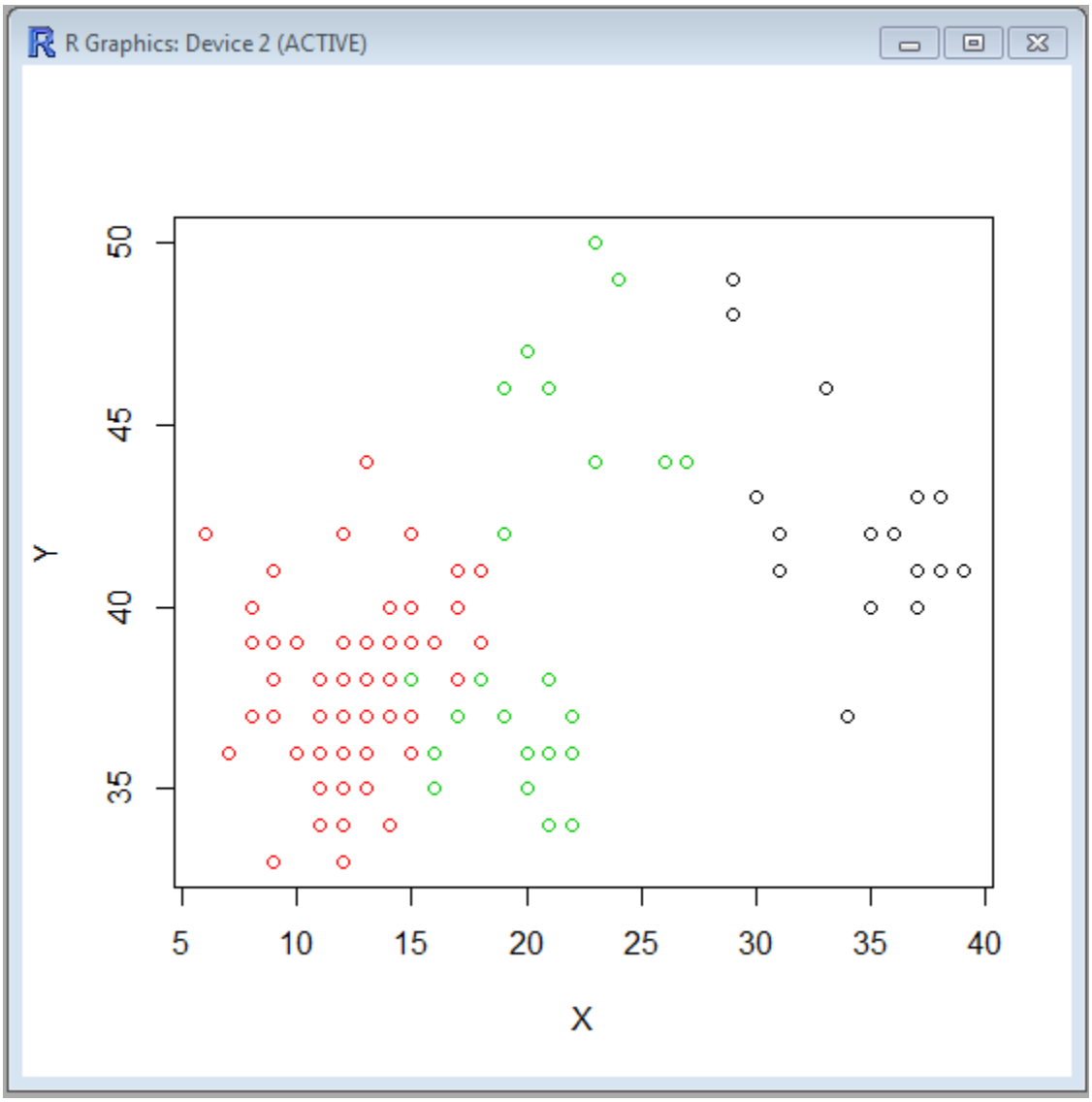
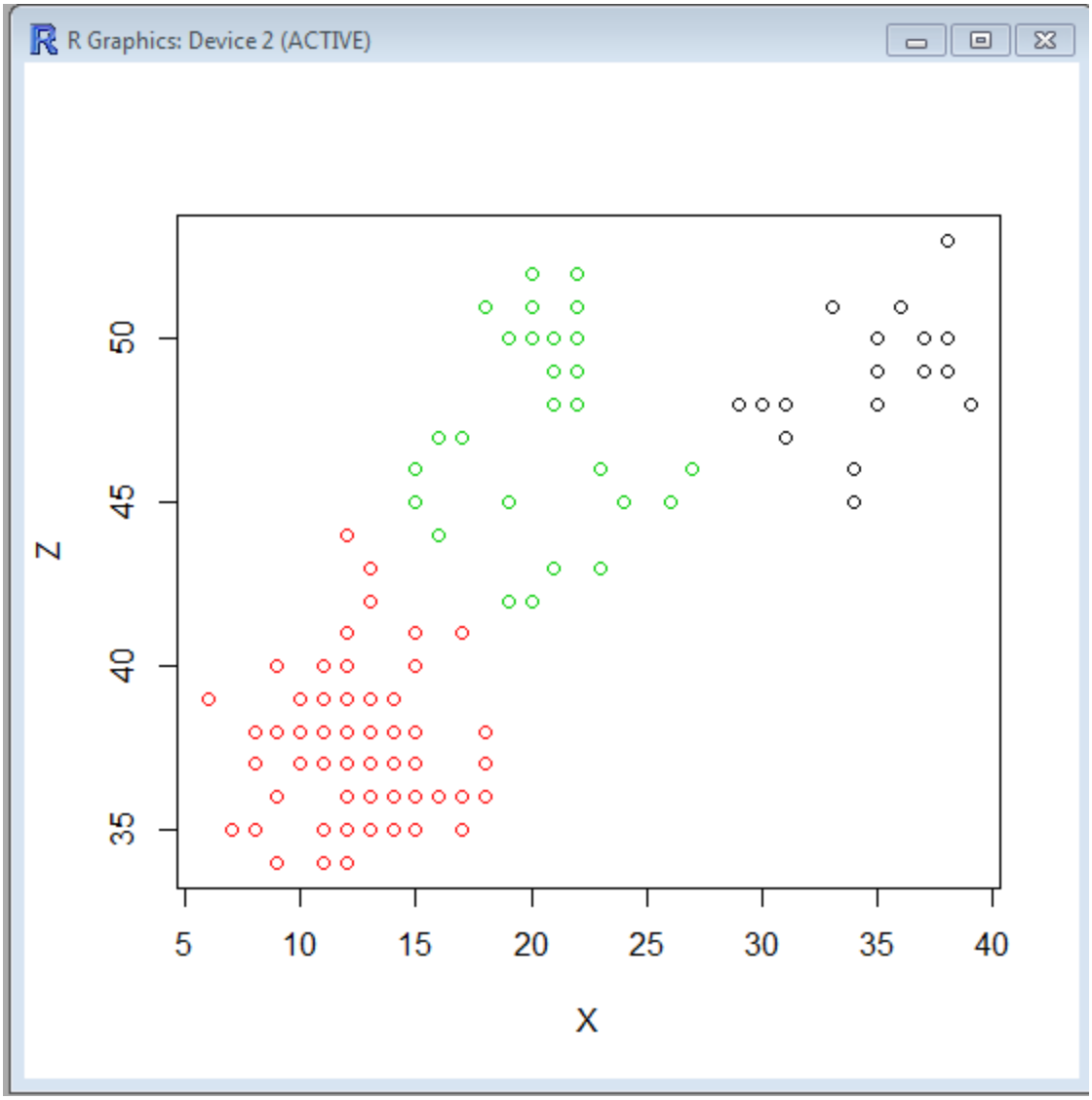
K-means

Code:

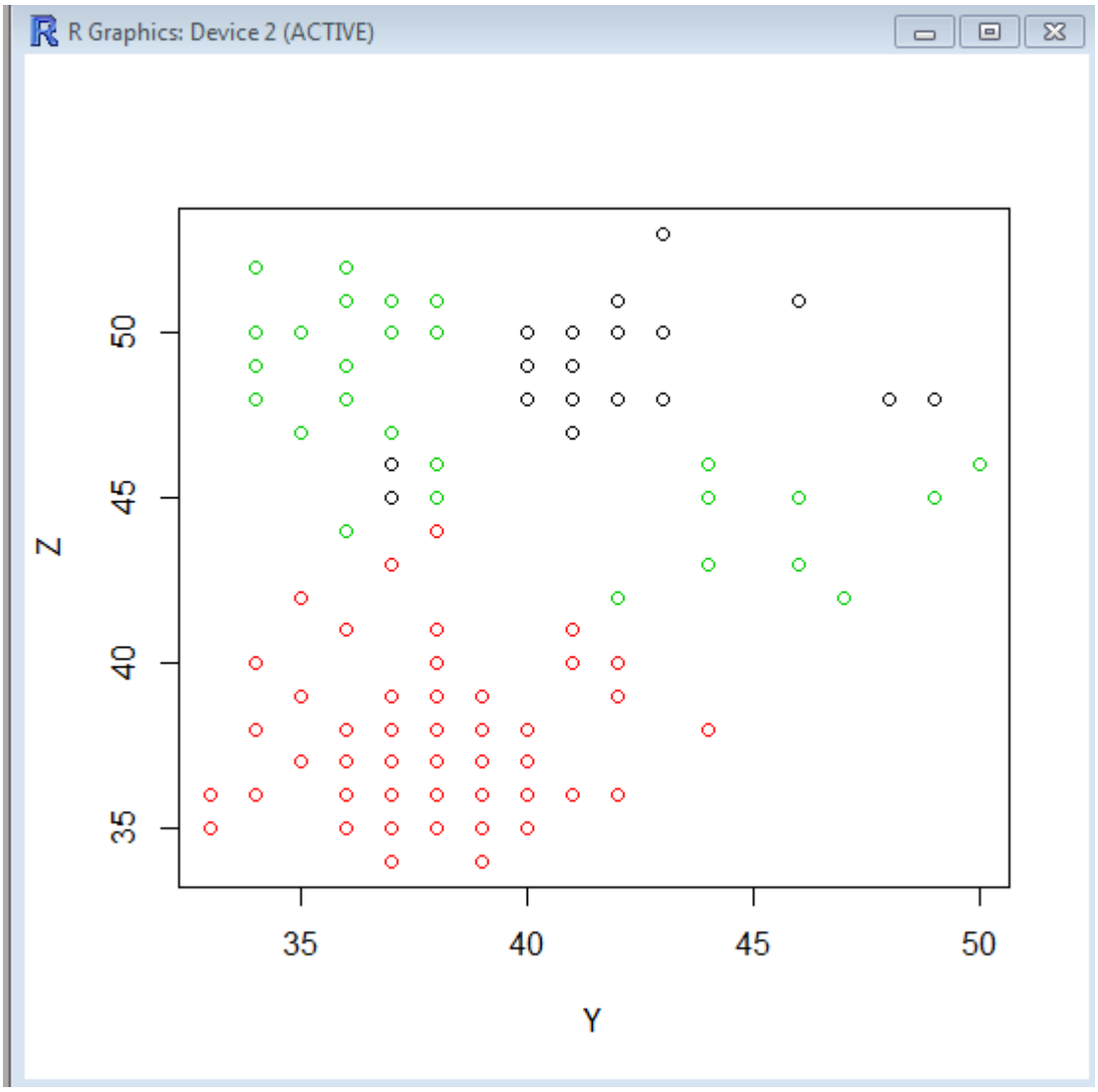
```
A<-read.csv("D:/Accelometer.csv")
View(A)
km<-kmeans(A,3)
> km
> plot(A("X","Y")], col=km$cluster)
```



> plot(A("X","Z")], col=km$cluster)



> plot(A("X","Z")], col=km$cluster)



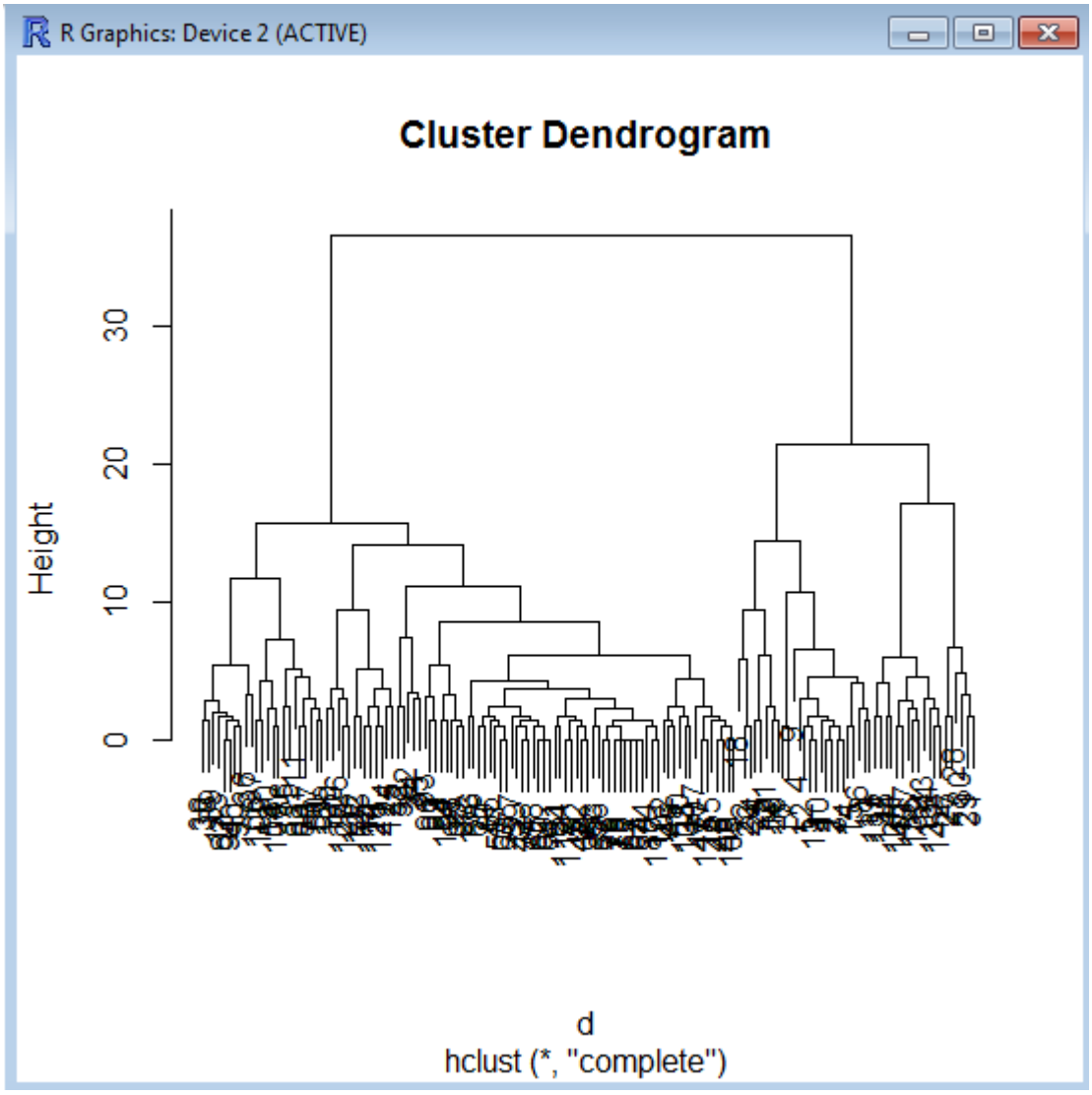
Hierarchical Clustering

Code:

> d<-dist(as.matrix(A))

> hc<-hclust(d)

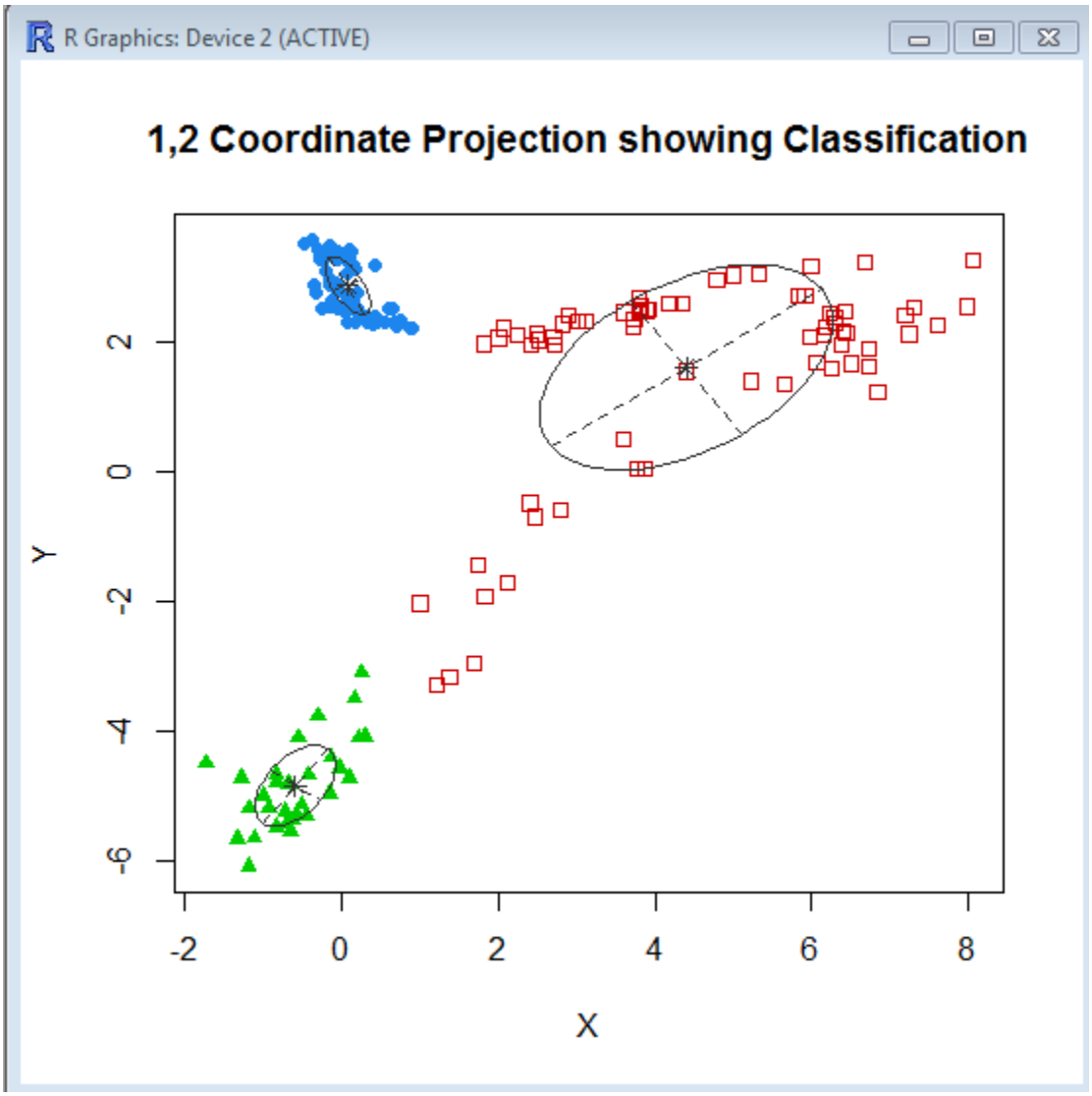
> plot(hc)

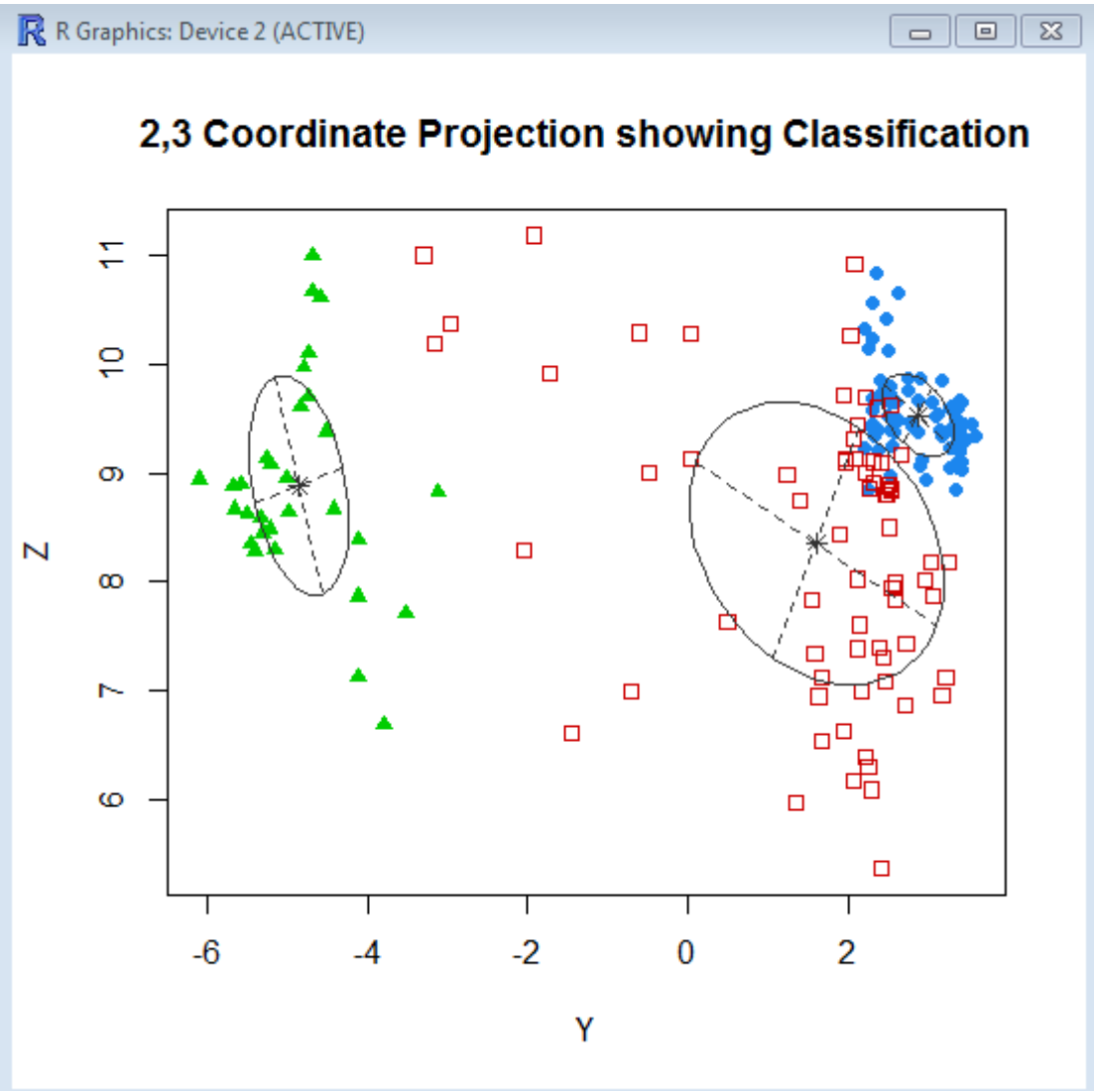


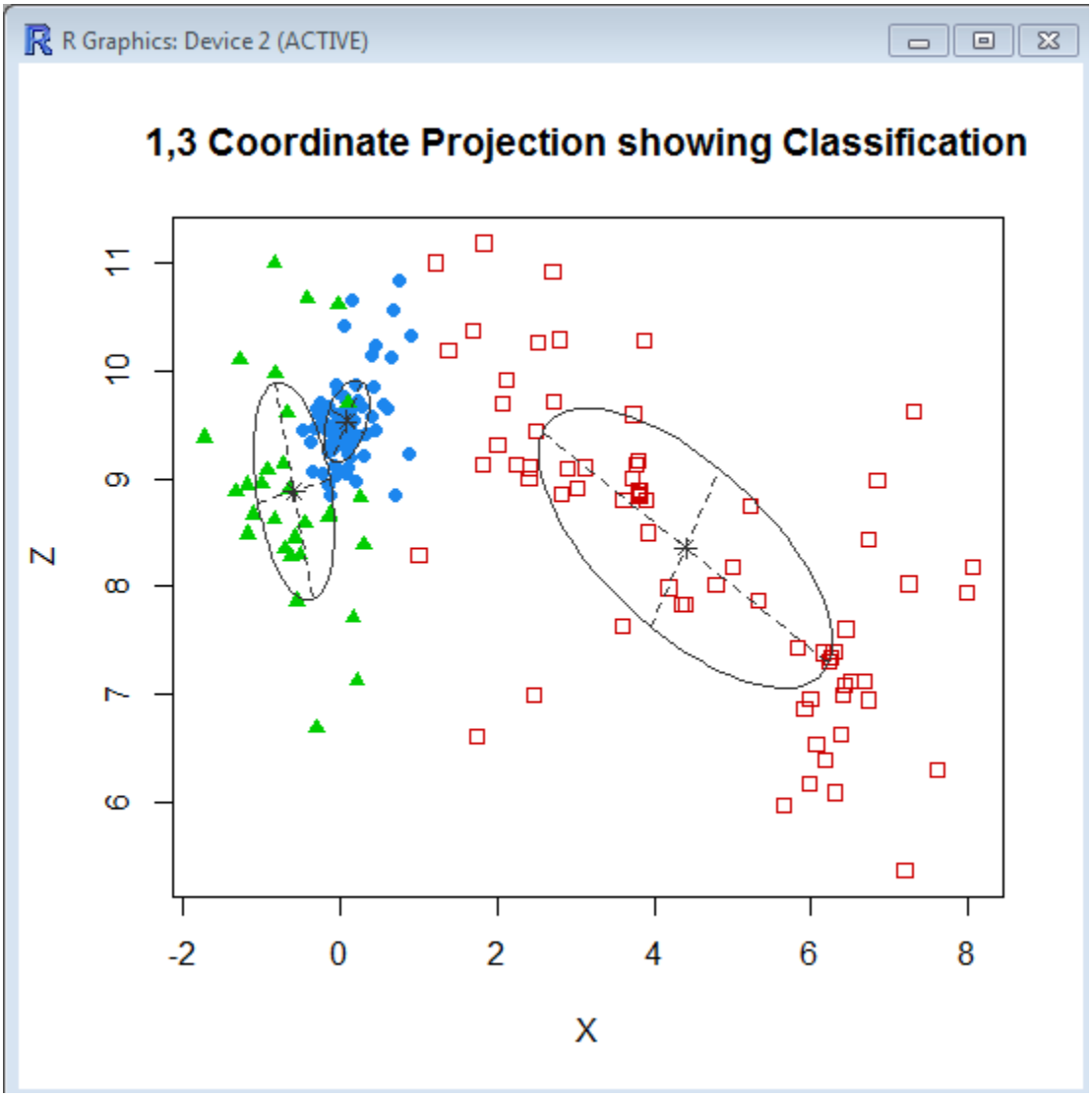
Expected Maxmization:

Code:

```
> mc<-Mclust(A[,1:3],G=3)
> plot(mc,what=c("classification"),dimens=c(1,2,3))
> plot(mc,what=c("classification"),dimens=c(1,2))
> plot(mc,what=c("classification"),dimens=c(2,3))
> plot(mc,what=c("classification"),dimens=c(1,3))
```



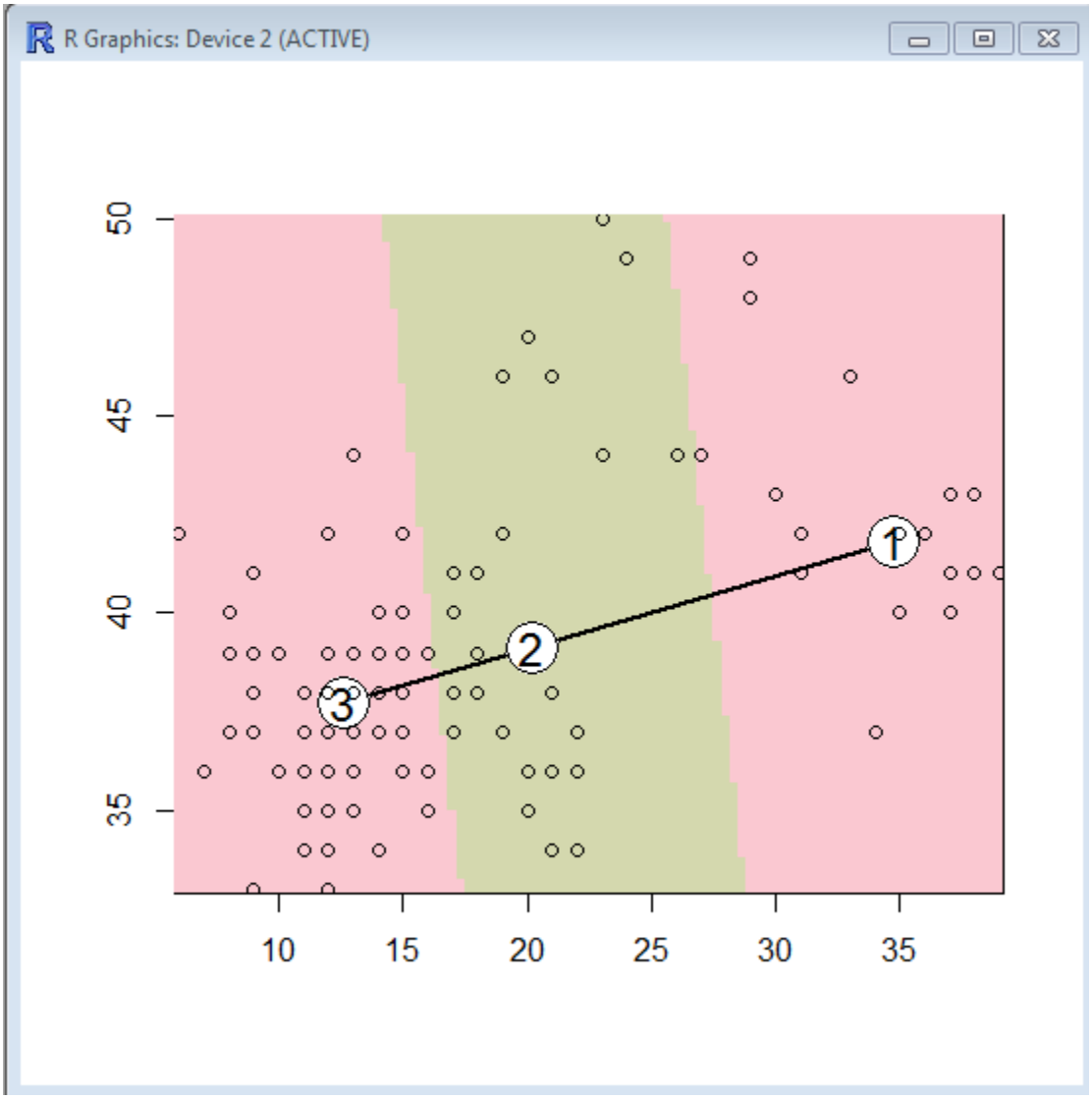

R Graphics: Device 2 (ACTIVE)
2,3 Coordinate Projection showing Classification
Z
11
10
9
8
7
6
-6
-4
-2
0
2
Y


R Graphics: Device 2 (ACTIVE)
1,3 Coordinate Projection showing Classification
Z
X
6
7
8
9
10
11
-2
0
2
4
6
8

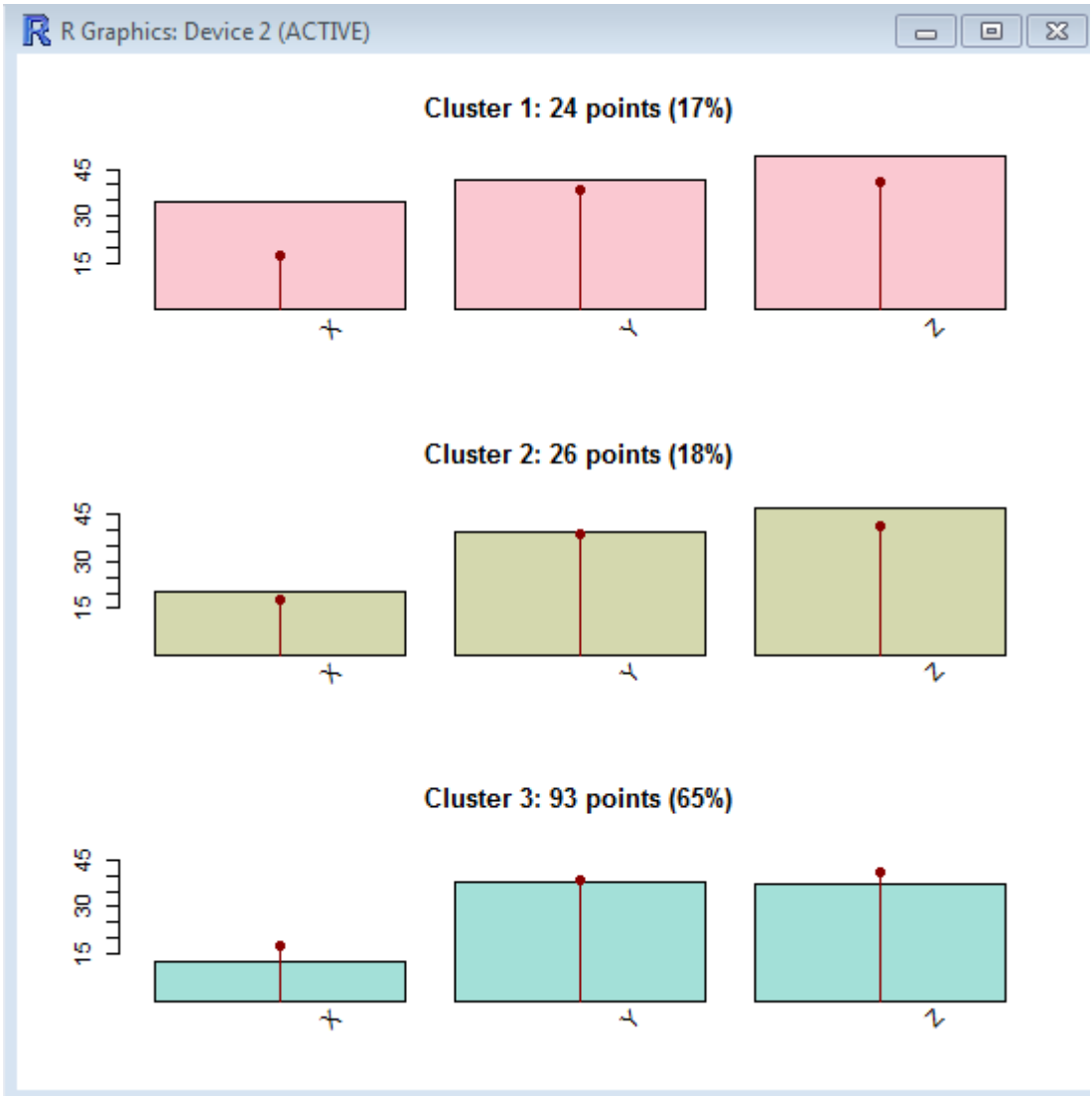
K-Medians

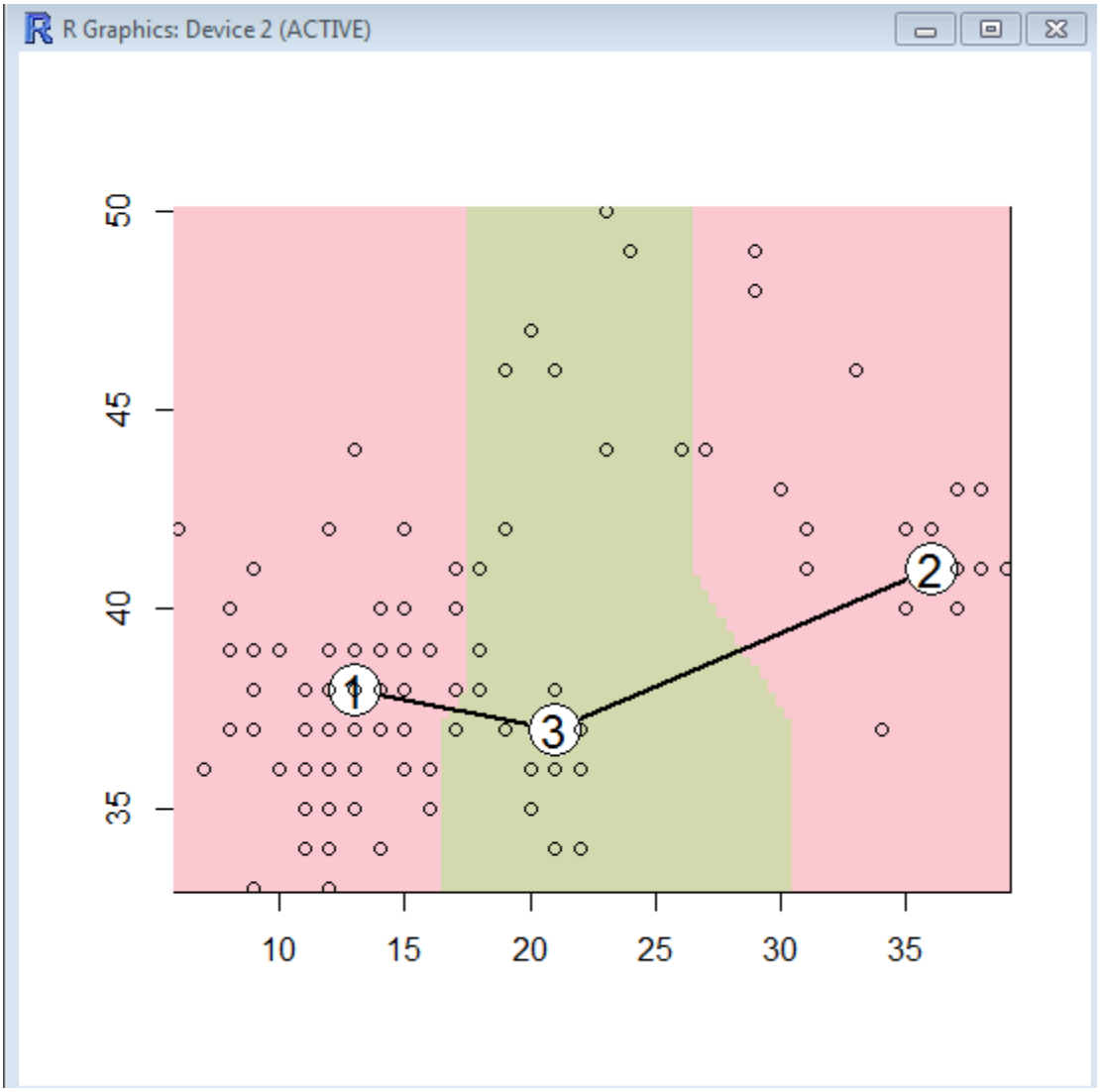
Code:

```
> cl1=kcca(A,k=3)
> image(cl1)
> points(A)
> barplot(cl1)
> cl2=kcca(A,k=3,family=kccaFamily("kmedians"),control=list(initcent="kmeanspp"))
> image(cl2)
> points(A)
```



Barplot


R Graphics: Device 2 (ACTIVE)
Cluster 1: 24 points (17%)
15
30
45
Cluster 2: 26 points (18%)
15
30
45
Cluster 3: 93 points (65%)
15
30
45


R Graphics: Device 2 (ACTIVE)
50
45
40
35
10
15
20
25
30
35
1
2
3