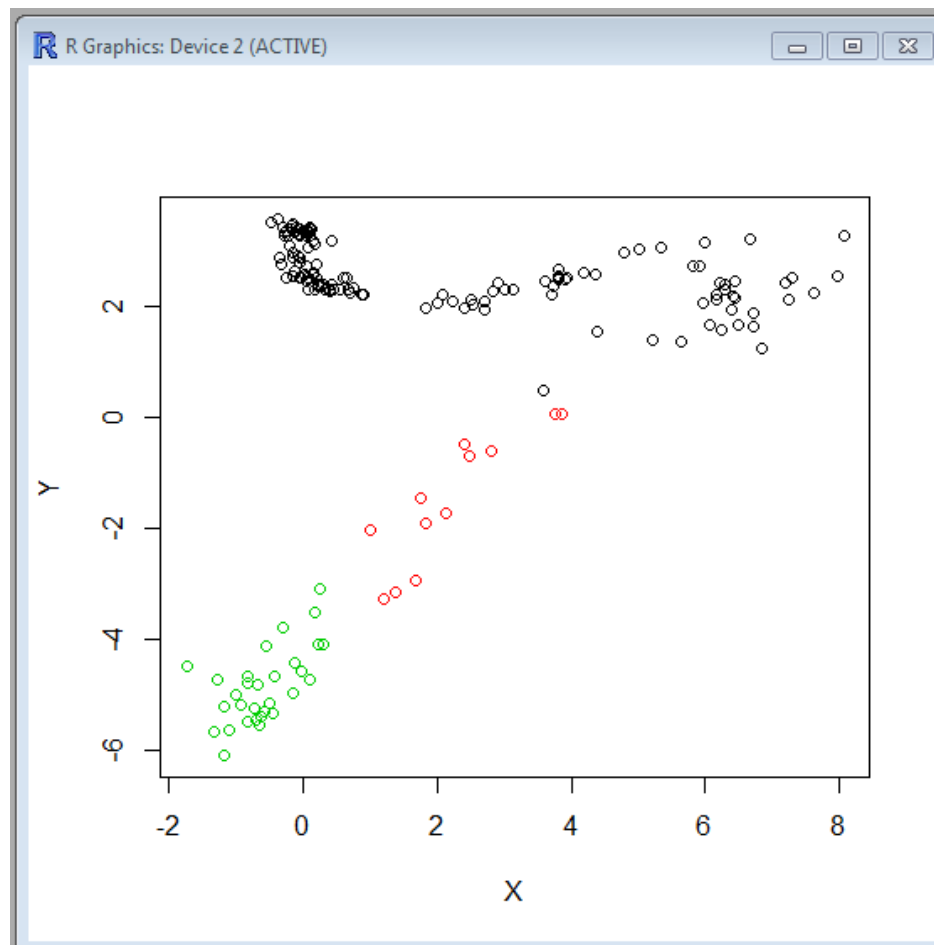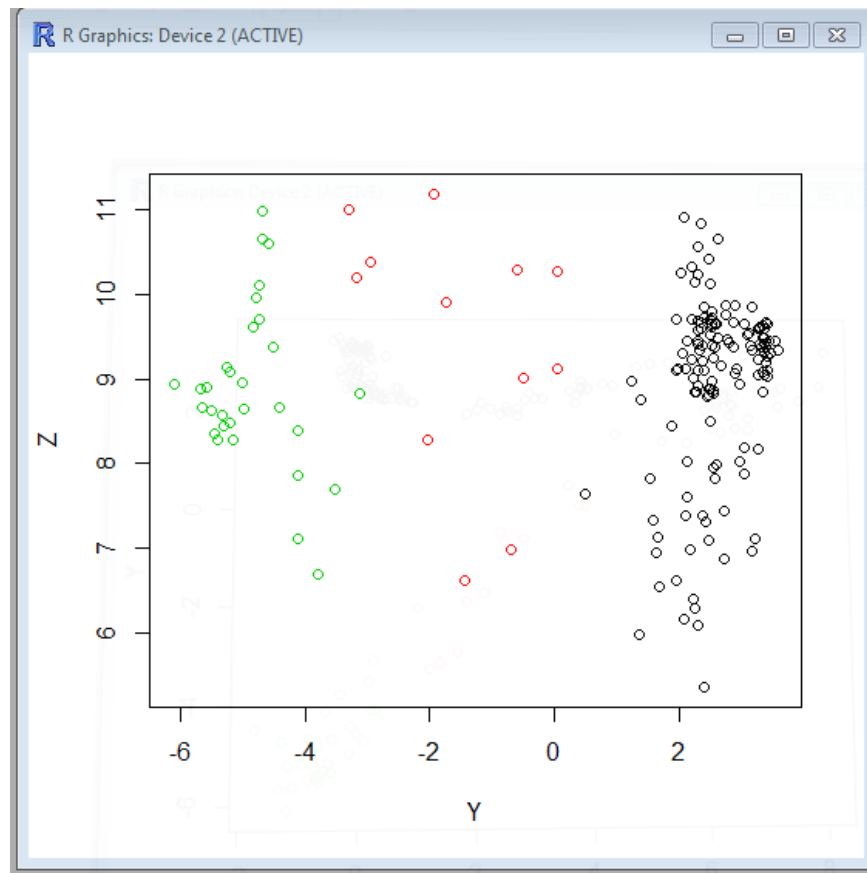# Performing Different Types of Clustering

I have collected accelerometer data which is collected when I was trying to move my hand.  This data contains 3 columns for 3 different axes namely X, Y, Z

1.  **K-Means Clustering Data** :
    I have run K –Means Clustering Algorithm on my data and obtained different results for X-Y and Y-Z

**Code For K-means Clustering**:

```
data<-read.csv("D:/Accelometer_HandShake.csv")

View(data)

Kmeans3<-kmeans(data,3)

plot(data[c("X","Y")], col=kmeans3$cluster)

plot(data[c("Y","Z")], col=kmeans3$cluster)
```
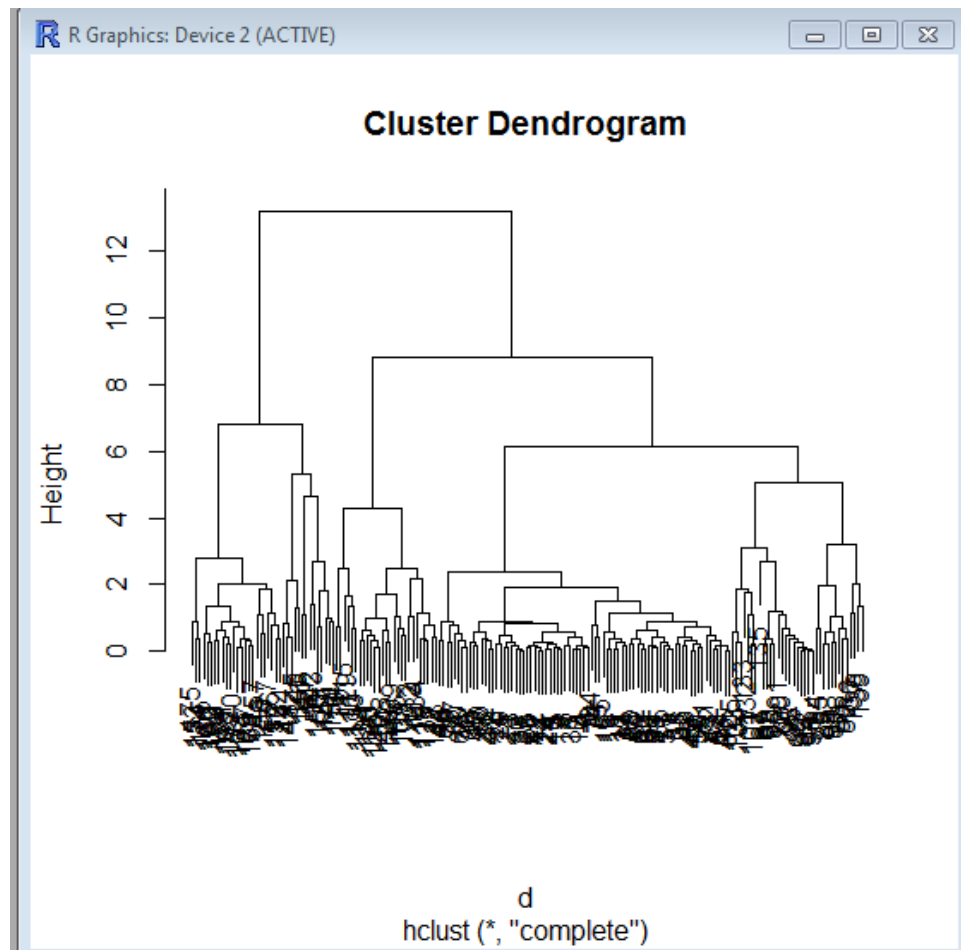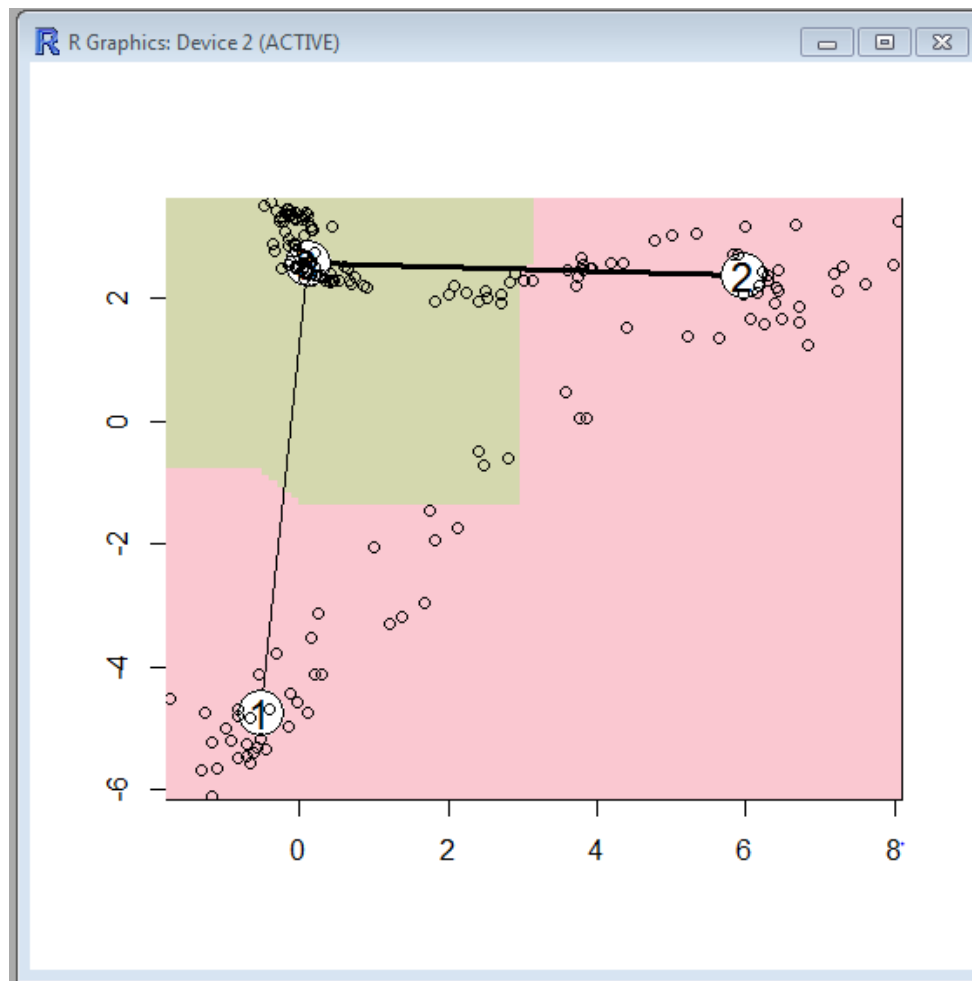
2. **Hierarchical Clustering technique** :



**Code for Hierarchiral Clustering**:

data<-read.csv("D:/Accelometer_HandShake.csv")

hierar<-dist(as.matrix(data))

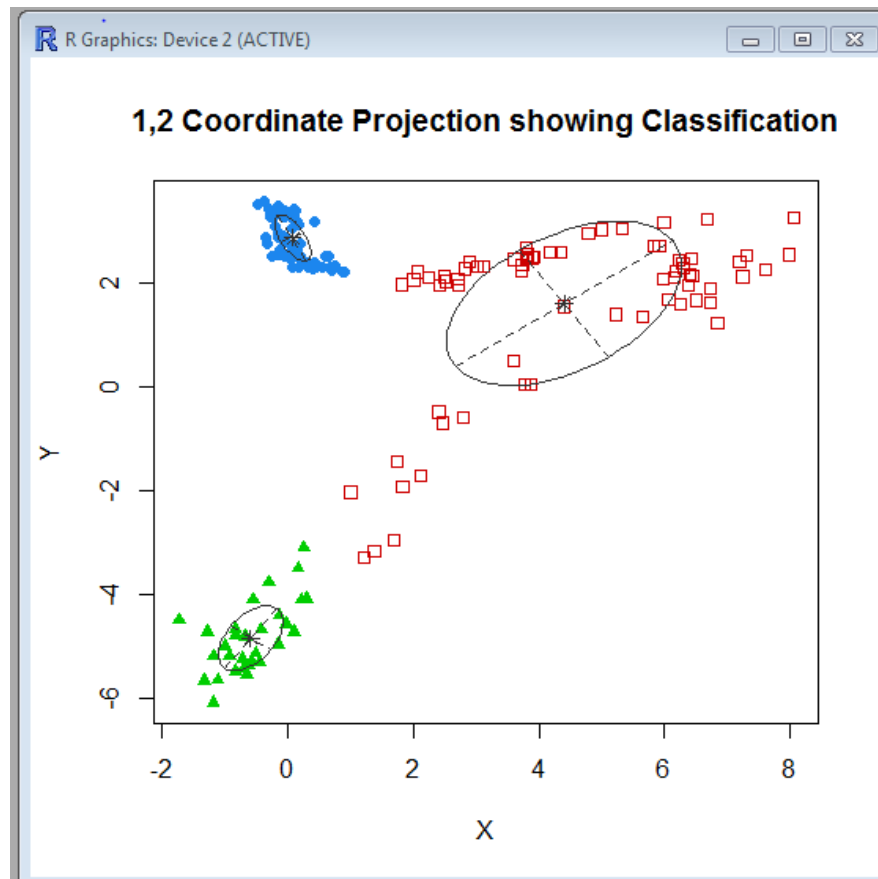hierarcluster<-hclust(hierar)

plot(hierarcluster)

### 3. K-Medians Clustering Algorithm



**Code For K-Medians**:

```
data<-read.csv("D:/Accelometer_HandShake.csv")

cluster=kcca(data,k=3)

image(cluster)

points(data)

barplot(cluster)

cluster 2=kcca(data,k=3,family=kccaFamily("kmedians"),control=list(initcent="kmeanspp"))

image(cluster)

points(data)
```

4. **Expectation-Maximization Algorithm** :



**Code for E-M Clustering Algorithm**

data<-read.csv("D:/Accelometer_HandShake.csv")

emcluster<-Mclust(data[,1:3],G=3)

plot(emcluster,what=c("classification"),dimens=c(1,2,3))

plot(emcluster,what=c("classification"),dimens=c(1,2))

plot(emcluster,what=c("classification"),dimens=c(2,3))

plot(emcluster,what=c("classification"),dimens=c(1,3))