Report for Lab Assignment 3

Question 1

Description:

R Project – To prepare a data set related to my project and to perform K- Means, K- Medians, Expectation Maximization and Hierarchical Clustering algorithms on that data set.

I had collected the data of the footsteps that I walked from the smart watch and analyzed using the above mentioned algorithms.

Snapshot:

K Means:

S = read.csv("DataSet.txt", header=TRUE)

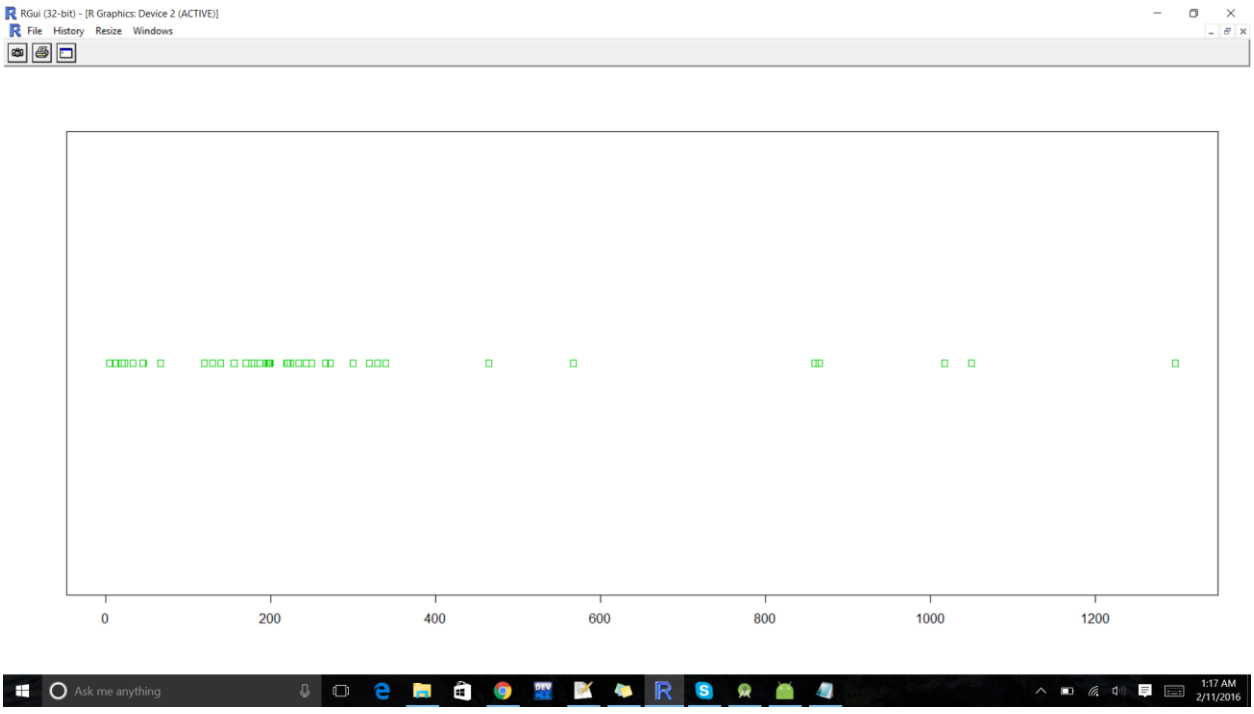
tail(s)

s$Level=NULL

tail(s)

pri<-kmeans(s,2)

plot(steps[c("s")],col=pri$cluster)



Heirarchical Clustering

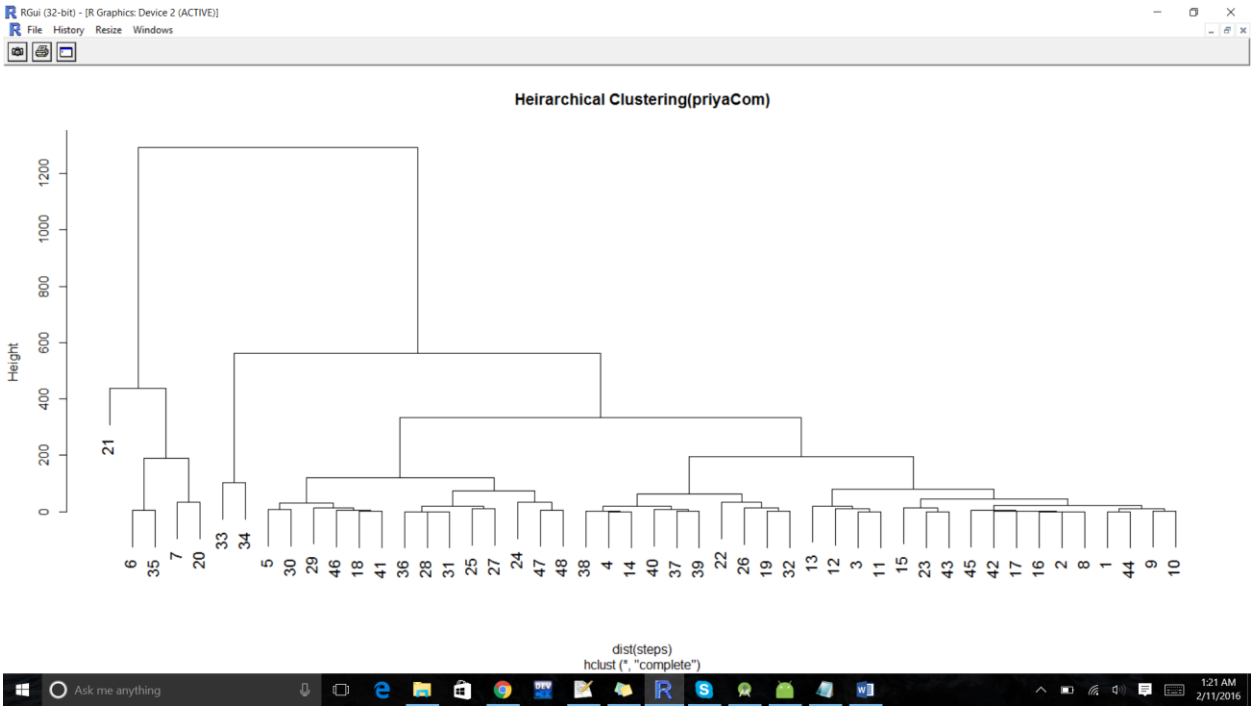
head(s)

s$Level = NULL

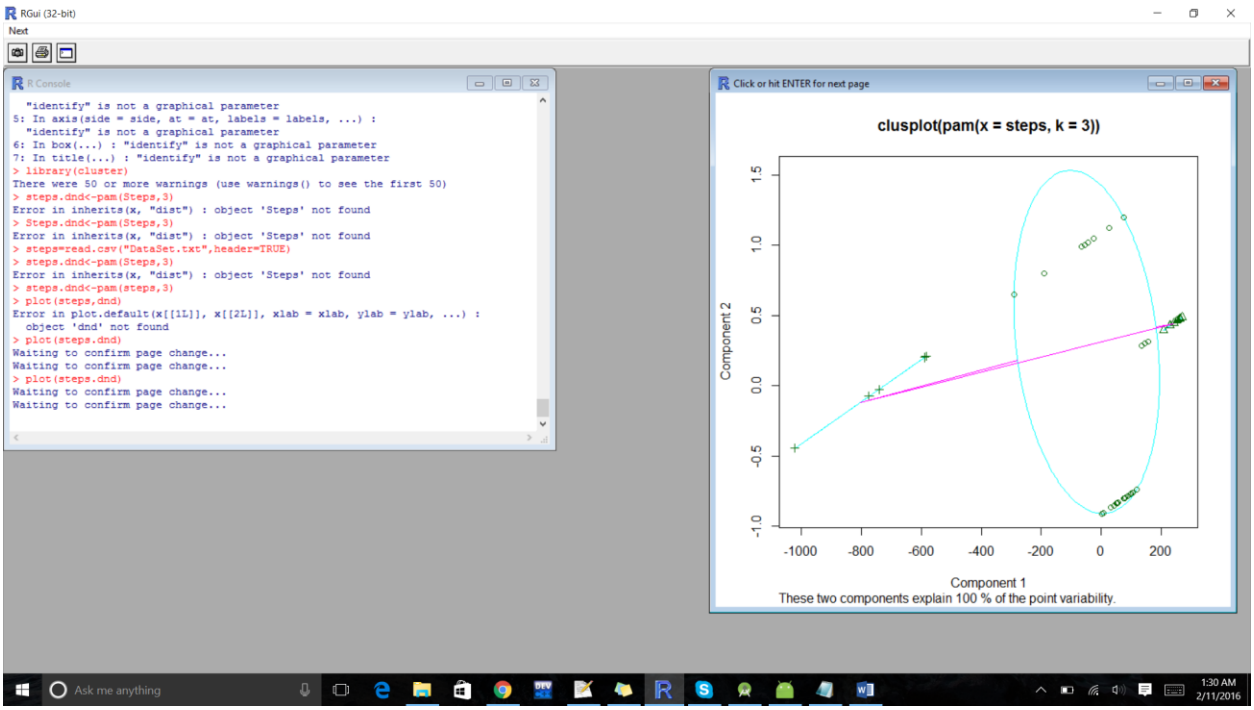
head(s)

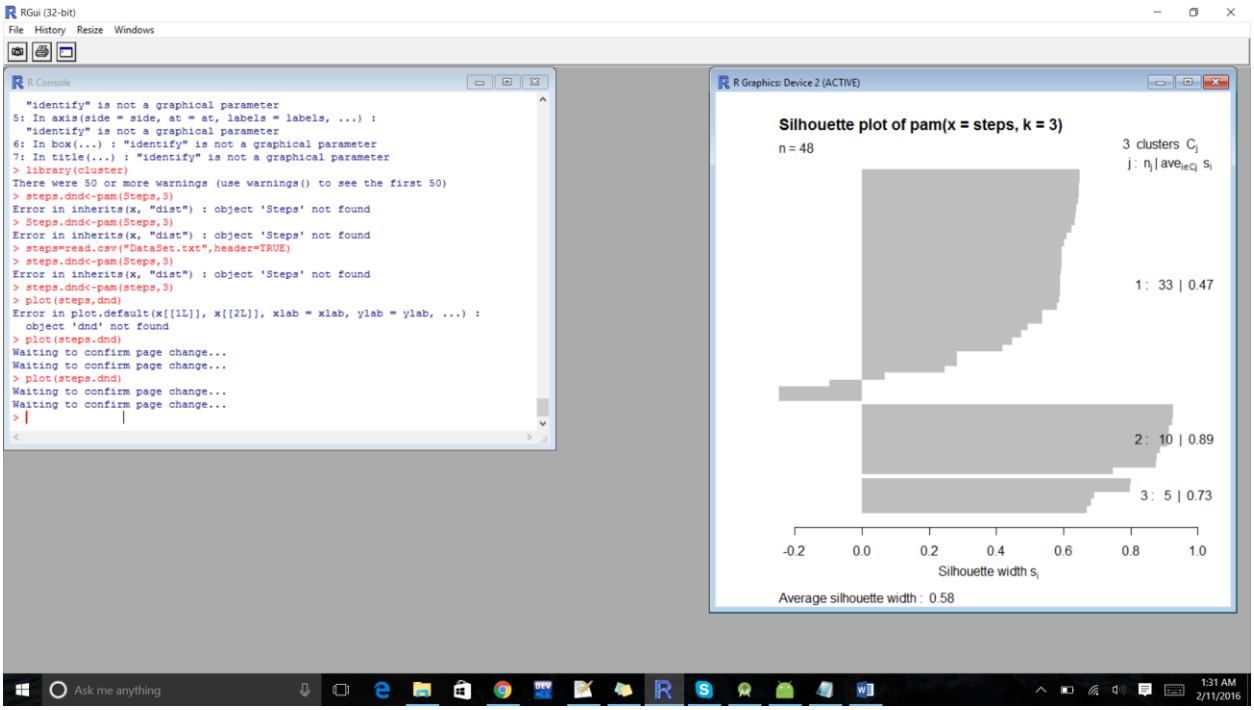
hc.priyaCom=hclust(dist(s), method="complete")

plot(hc.priyaCom,main ="HeirarchicalClustering(priyaCom)", cex=1.2)

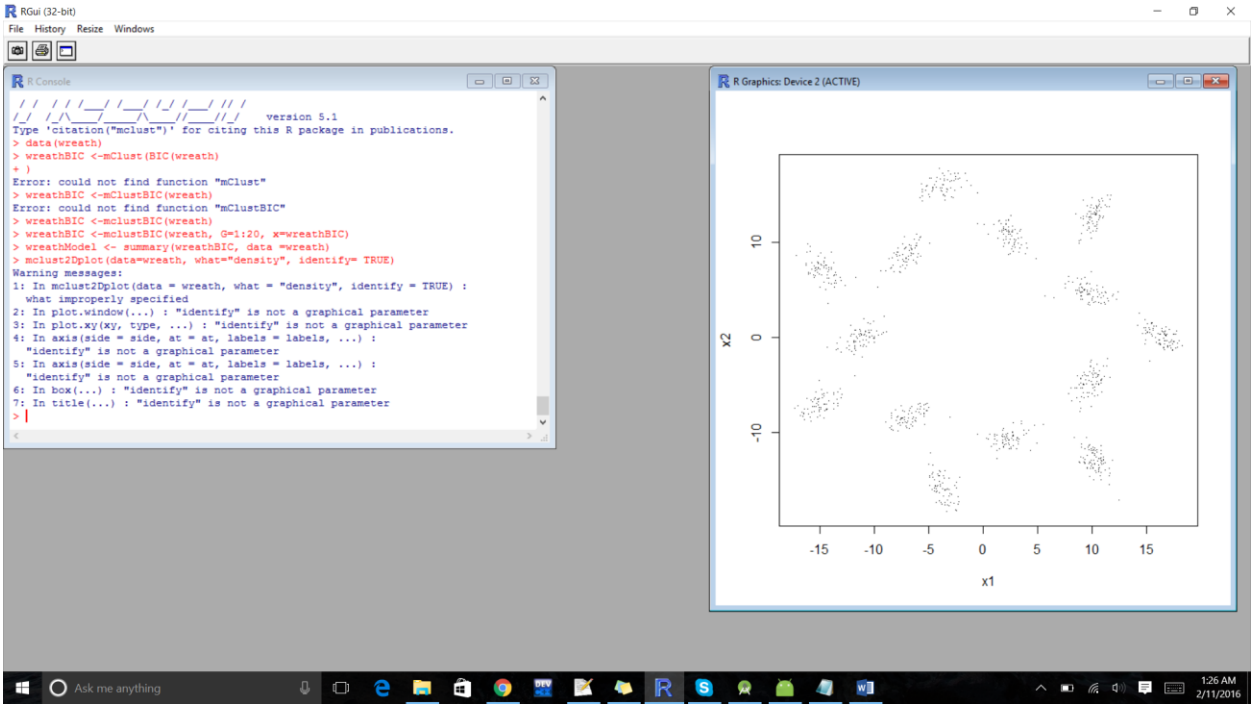


K Medoids


RGui (32-bit)
Next
R Console
"identify" is not a graphical parameter
5: In axis(side = side, at = at, labels = labels, ...) :
"identify" is not a graphical parameter
6: In box(...) : "identify" is not a graphical parameter
7: In title(...) : "identify" is not a graphical parameter
> library(cluster)
There were 50 or more warnings (use warnings() to see the first 50)
> steps.dnd<-pam(Steps,3)
Error in inherits(x, "dist") : object 'Steps' not found
> Steps.dnd<-pam(Steps,3)
Error in inherits(x, "dist") : object 'Steps' not found
> steps=read.csv("DataSet.txt",header=TRUE)
> steps.dnd<-pam(Steps,3)
Error in inherits(x, "dist") : object 'Steps' not found
> steps.dnd<-pam(steps,3)
> plot(steps,dnd)
Error in plot.default(x[[1L]], x[[2L]], xlab = xlab, ylab = ylab, ...) :
object 'dnd' not found
> plot(steps.dnd)
Waiting to confirm page change...
Waiting to confirm page change...
> plot(steps.dnd)
Waiting to confirm page change...
Waiting to confirm page change...
Click or hit ENTER for next page
clusplot(pam(x = steps, k = 3))
Component 2
Component 1
These two components explain 100 % of the point variability.
Ask me anything
1:30 AM
2/11/2016


RGui (32-bit)
File History Resize Windows
R Console
"identify" is not a graphical parameter
5: In axis(side = side, at = at, labels = labels, ...) :
"identify" is not a graphical parameter
6: In box(...) : "identify" is not a graphical parameter
7: In title(...) : "identify" is not a graphical parameter
> library(cluster)
There were 50 or more warnings (use warnings() to see the first 50)
> steps.dnd<-pam(Steps,3)
Error in inherits(x, "dist") : object 'Steps' not found
> Steps.dnd<-pam(Steps,3)
Error in inherits(x, "dist") : object 'Steps' not found
> steps=read.csv("DataSet.txt",header=TRUE)
> steps.dnd<-pam(Steps,3)
Error in inherits(x, "dist") : object 'Steps' not found
> steps.dnd<-pam(steps,3)
> plot(steps,dnd)
Error in plot.default(x[[1L]], x[[2L]], xlab = xlab, ylab = ylab, ...) :
object 'dnd' not found
> plot(steps.dnd)
Waiting to confirm page change...
Waiting to confirm page change...
> plot(steps.dnd)
Waiting to confirm page change...
Waiting to confirm page change...
R Graphics: Device 2 (ACTIVE)
Silhouette plot of pam(x = steps, k = 3)
n = 48
3 clusters C_j
j : n_j | ave_{i∈Cj} s_i
1 : 33 | 0.47
2 : 10 | 0.89
3 : 5 | 0.73
Silhouette width s_i
Average silhouette width : 0.58
Ask me anything
1:31 AM
2/11/2016

Expectation Maximization:



Question 2

Description:

Android Application – To collect the data related to my project and send notifications to the watch using Intuitive analysis.

I had collected the data of the footsteps, with which my Robot should be able to find my location which could be used in my project. I had used the smart watch sensors and implemented an application which displays the footsteps count on that day.

Snapshot: