Report For Lab Assignment 2

1.

Question:

R Project

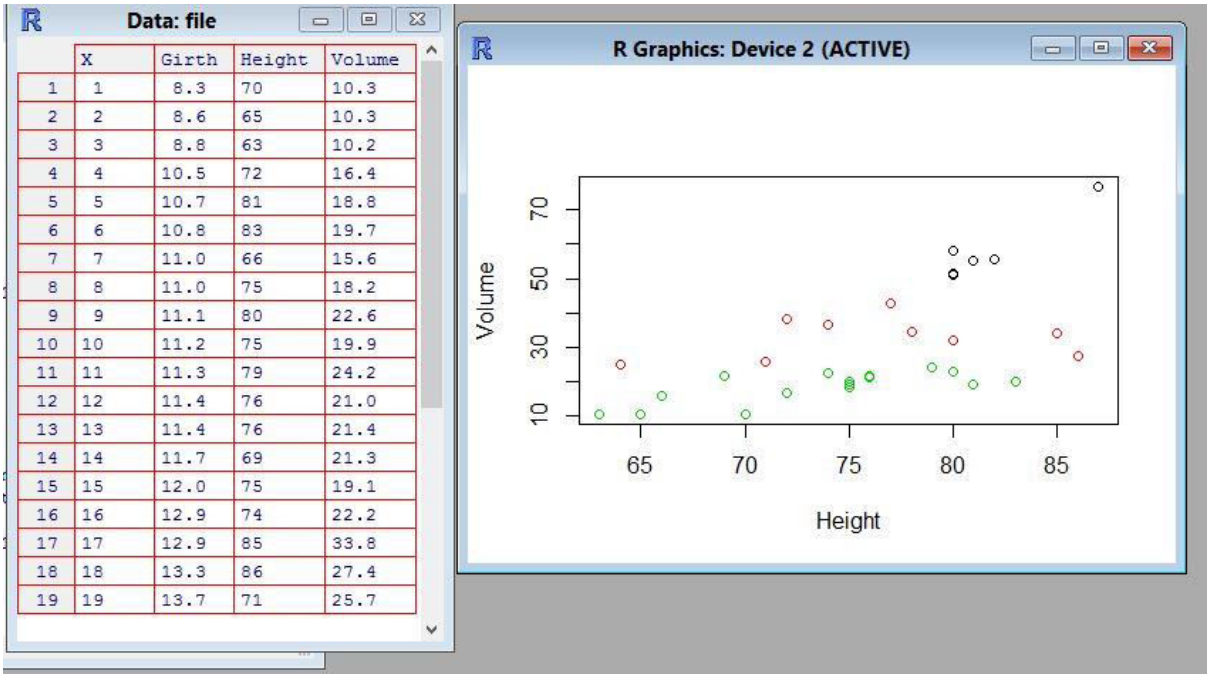
Prepare a dataset and perform k-means clustering.

Description:

I have created a sample dataset tress.csv and performs k-means clustering in R by using R default k-means function. For the visualization I had plotted a graph of original data set comparing to cluster that is created. You can clearly understand the k-means clustering I had performed by seeing the following screenshots.

Screenshots:

```
> file=read.csv("D:/trees.csv")
> View(file)
> results <- kmeans(file,3)
> results
K-means clustering with 3 clusters of sizes 6, 9, 16

Cluster means:
     X    Girth   Height Volume
1 28.5 18.21667 81.66667  58.15
2 21.0 14.30000 76.33333  32.80
3  8.5 10.79375 73.68750  18.20

Clustering vector:
 [1] 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 2 2 2 2 2 2 2 2 1 1 1 1 1 1

Within cluster sum of squares by cluster:
[1]  526.3167  746.2200 1178.7669
 (between_SS / total_SS =  79.7 %)

Available components:

[1] "cluster"      "centers"      "totss"        "withinss"     "tot.withinss"
[6] "betweenss"    "size"         "iter"         "ifault"
> results$cluster
 [1] 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 2 2 2 2 2 2 2 2 2 1 1 1 1 1 1
> plot(file[c("Height","Volume")])
> plot(file[c("Height","Volume")],col=results$cluster)
>
```



	X	Girth	Height	Volume
1	1	8.3	70	10.3
2	2	8.6	65	10.3
3	3	8.8	63	10.2
4	4	10.5	72	16.4
5	5	10.7	81	18.8
6	6	10.8	83	19.7
7	7	11.0	66	15.6
8	8	11.0	75	18.2
9	9	11.1	80	22.6
10	10	11.2	75	19.9
11	11	11.3	79	24.2
12	12	11.4	76	21.0
13	13	11.4	76	21.4
14	14	11.7	69	21.3
15	15	12.0	75	19.1
16	16	12.9	74	22.2
17	17	12.9	85	33.8
18	18	13.3	86	27.4
19	19	13.7	71	25.7

Data set is also included in this Lab Report.

2

Question:

RoboMe and Watch App

Create a RoboMe and Watch Appthat uses weather or any API of choice.

Description:

API used: Weather

"http://api.openweathermap.org/data/2.5/weather?id=4684888&units=metric&appid=a149d0dfbedce700edce4a82cccb6c32"

The above link is the description for the api I had used in the smart watch application. In which I have created an Smart watch application which will gives notification to smart watch based on the city that has used in the weather api. Each city has unique id, based

on that we get the weather information to our smart watch as a notification about that city's weather. I have used Kansas id, so my output is the weather information of Kansas city.

Screenshot:

Source code is also included in the Lab Report.