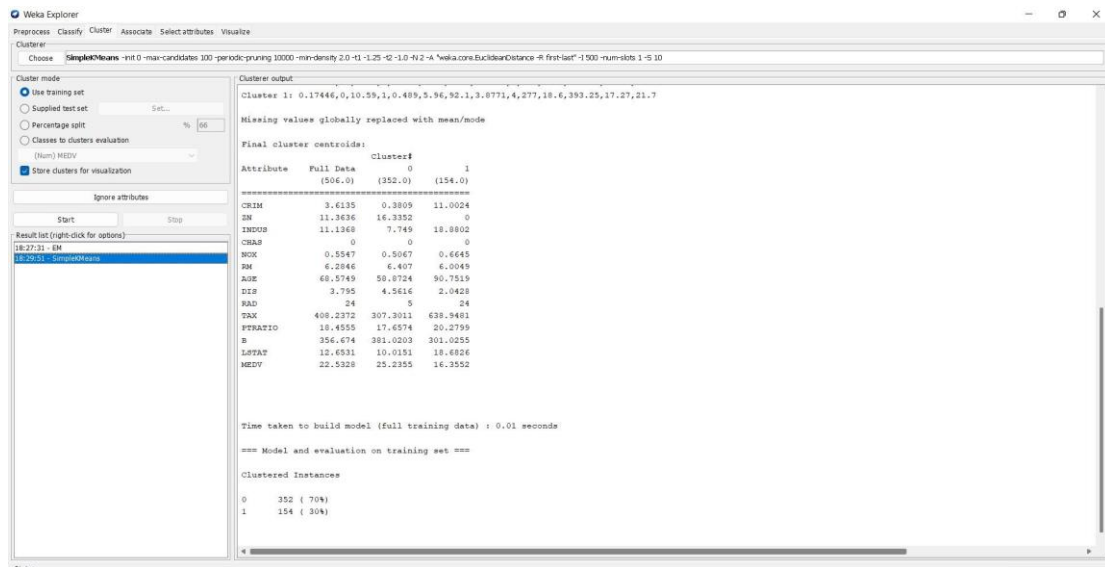


EXPERIMENT-6

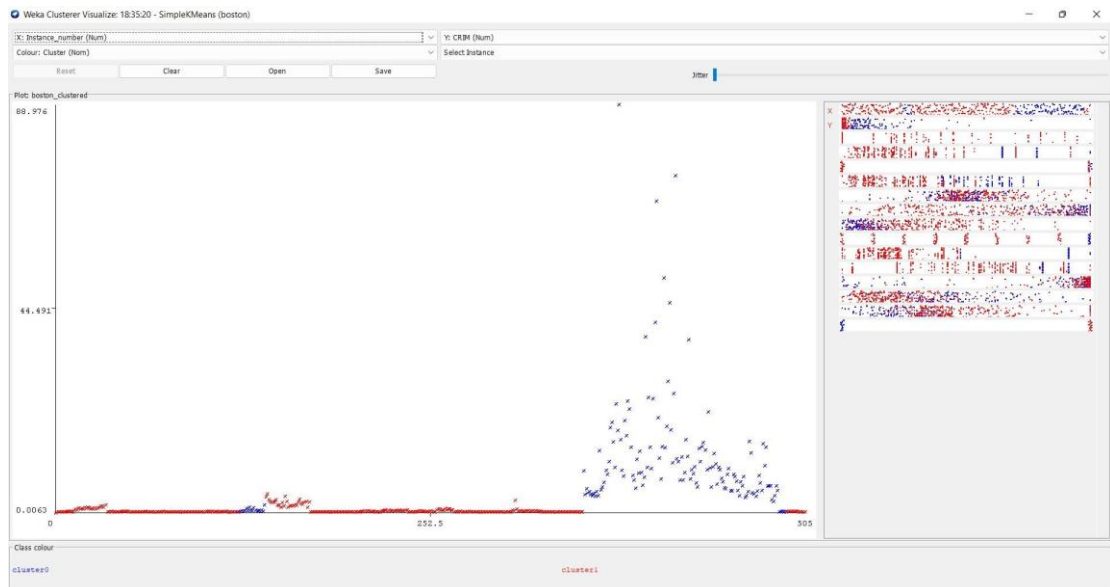
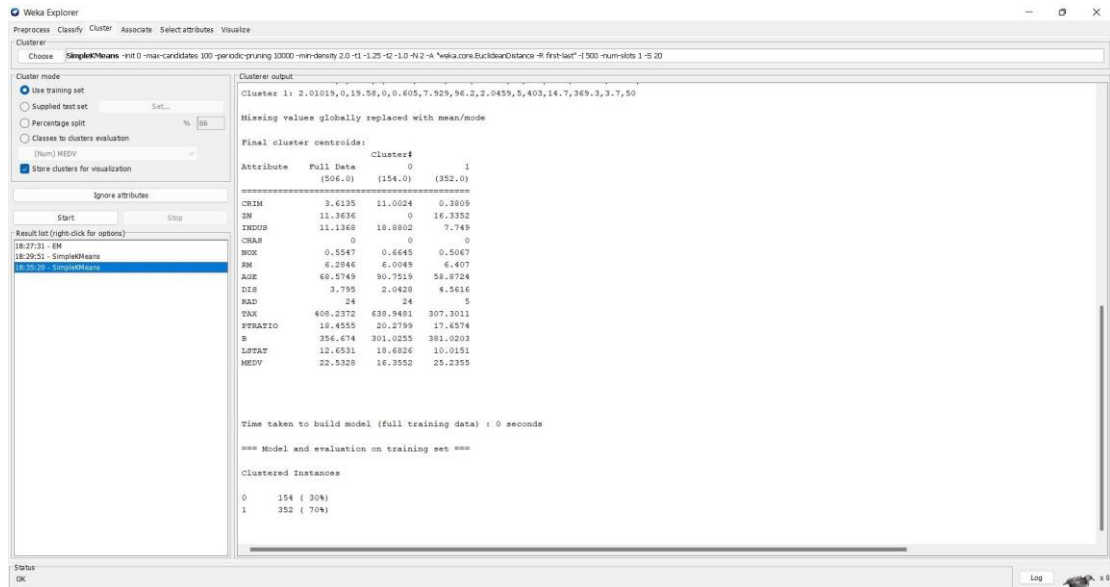
DATA SEGMENTATION BY K- MEANS CLUSTER USING WEKA AND R-TOOL

OUTPUT:

1) Choose a set of attributes for clustering and give a motivation.

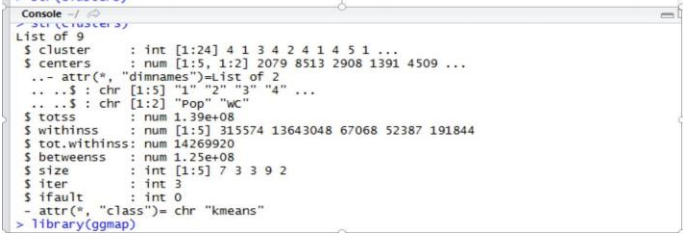


2) Experiment with atleast 2 different number of clusters but with same seed values:



USING R-TOOL

```
>
> clusters <- kmeans(citycrimes[,2:3], 5)
>
> citycrimes$Borough <- as.factor(clusters$cluster)
> str(clusters)
```



The screenshot shows the R console output for the kmeans function. The output is a list of 9 elements. The first element is the cluster assignment for each data point. The second element is the coordinates of the five cluster centers. The third element is the population of each cluster. The fourth element is the total sum of squares (totss). The fifth element is the within-cluster sum of squares (withinss). The sixth element is the total within-cluster sum of squares (tot.withinss). The seventh element is the between-cluster sum of squares (betweenss). The eighth element is the size of each cluster. The ninth element is the number of iterations (iter). The output also shows the default value for the ifault parameter and the class attribute.

```
Console - 4/20/2016
List of 9
 $ cluster      : int [1:24] 4 1 3 4 2 4 1 4 5 1 ...
 $ centers      : num [1:5, 1:2] 2079 8513 2908 1391 4509 ...
 .. attr(,"dimnames")=List of 2
 .. ..$ : chr [1:5] "1" "2" "3" "4" ...
 .. ..$ : chr [1:2] "Pop" "wc"
 $ totss       : num 1.39e+08
 $ withinss    : num [1:5] 315574 13643048 67068 52387 191844
 $ tot.withinss: num 14269920
 $ betweenss   : num 1.25e+08
 $ size        : int [1:5] 7 3 3 9 2
 $ iter        : int 3
 $ ifault      : int 0
 - attr(*, "class")= chr "kmeans"
> library(ggmap)
```

```

> ggmap(Map) + geom_point(aes(x = Pop[, ], y = wc[, ], colour = as.factor(Borough)), data = citycrimes)
Warning message:
Removed 24 rows containing missing values (geom_point).
> ggtitle("Map Boroughs using KMean")
$title
[1] "Map Boroughs using KMean"

$subtitle
NULL

attr(,"class")
[1] "labels"
>
> |

```

