21BDS0340

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Exploratory Data Analysis Lab

Experiment 10

Code:

```
# loading libraries and data
library(cluster)
data = iris
```

Output:

```
> # loading libraries and data
> library(cluster)
> data = iris
```

Code:

```
# calculating euclidean distance
euclidean = daisy(data[0:4], metric = c("euclidean"))
class(euclidean)
```

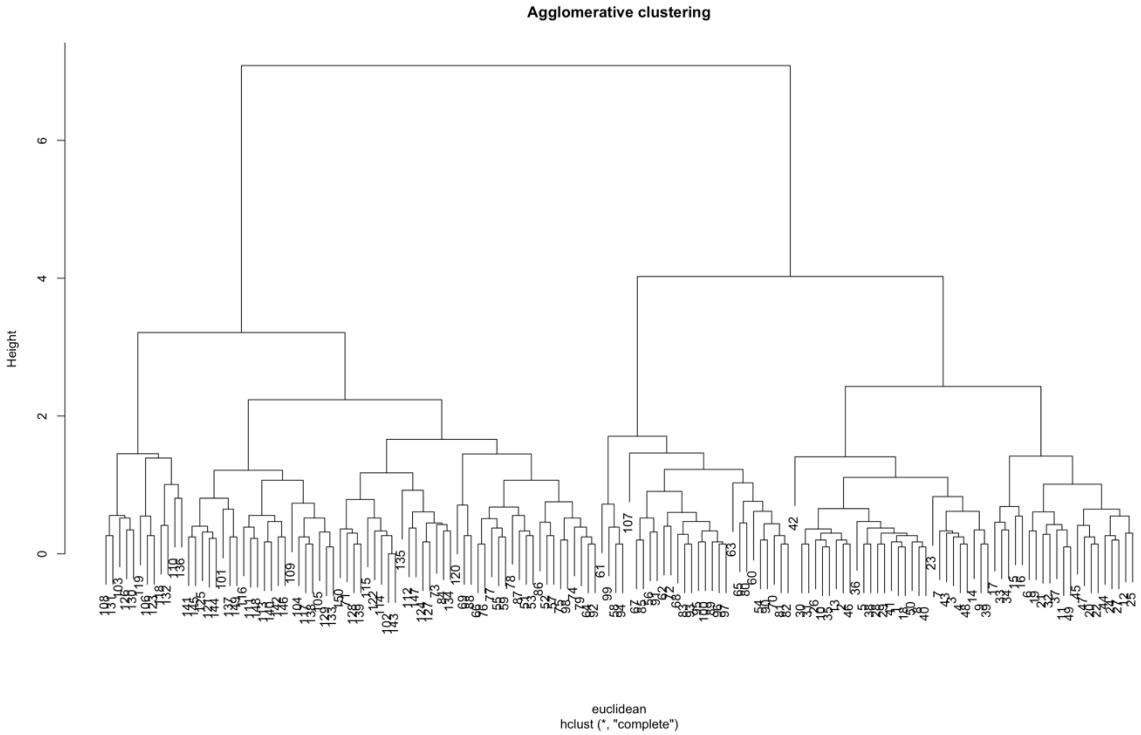
Output:

```
> # calculating euclidean distance
> euclidean = daisy(data[0:4], metric = c("euclidean"))
> class(euclidean)
[1] "dissimilarity" "dist"
```

Code:

```
# performing agglomerative clustering with complete linkage
agglomerative_cluster = hclust(euclidean, method = "complete")
plot(agglomerative_cluster, main = "Agglomerative clustering")
```

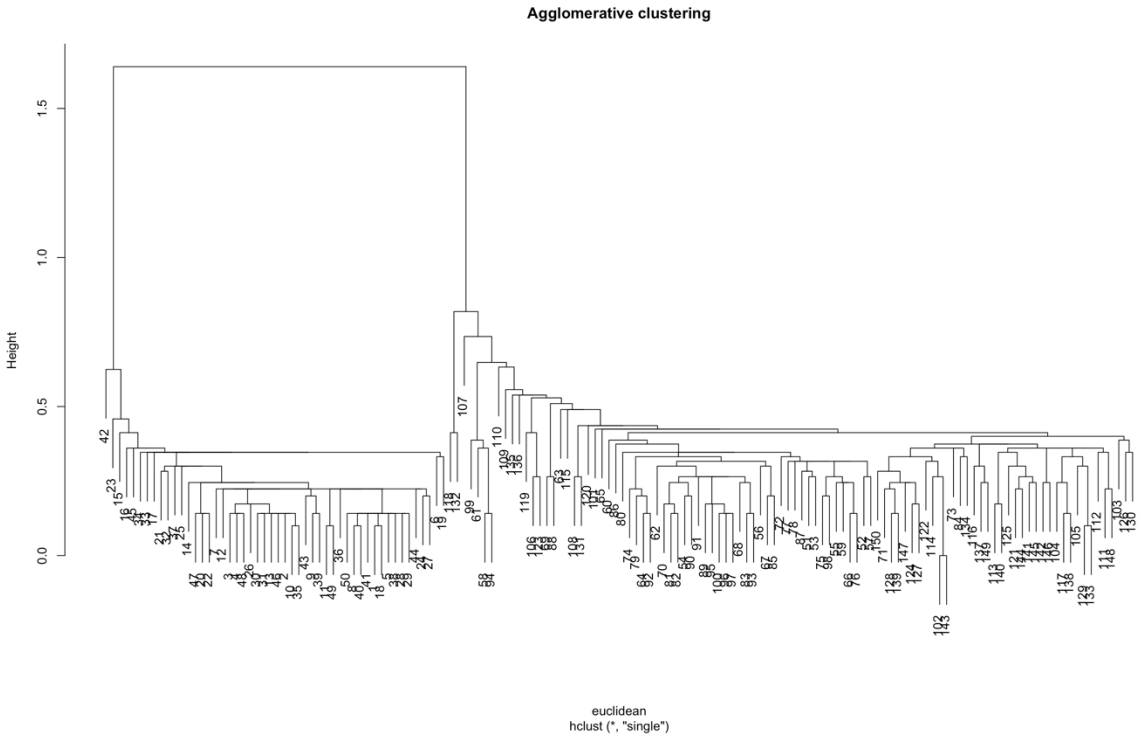
Output:



Code:

```
# performing agglomerative clustering with single linkage
agglomerative_cluster = hclust(euclidean, method = "single")
plot(agglomerative_cluster, main = "Agglomerative clustering")
```

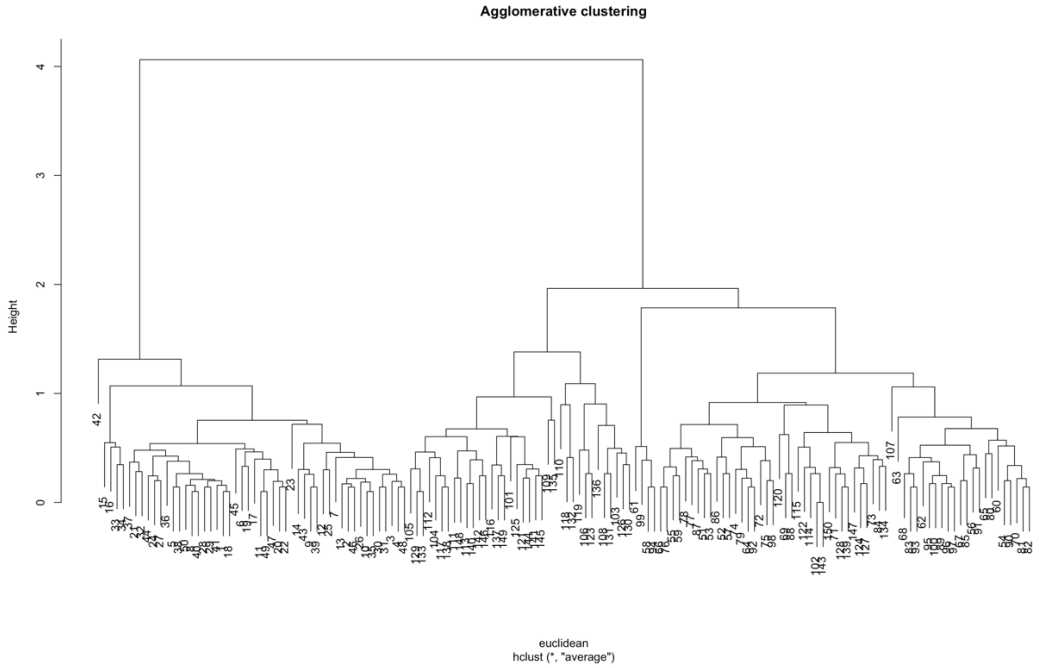
Output:



Code:

```
# performing agglomerative clustering with mean linkage
agglomerative_cluster = hclust(euclidean, method = "average")
plot(agglomerative_cluster, main = "Agglomerative clustering")
```

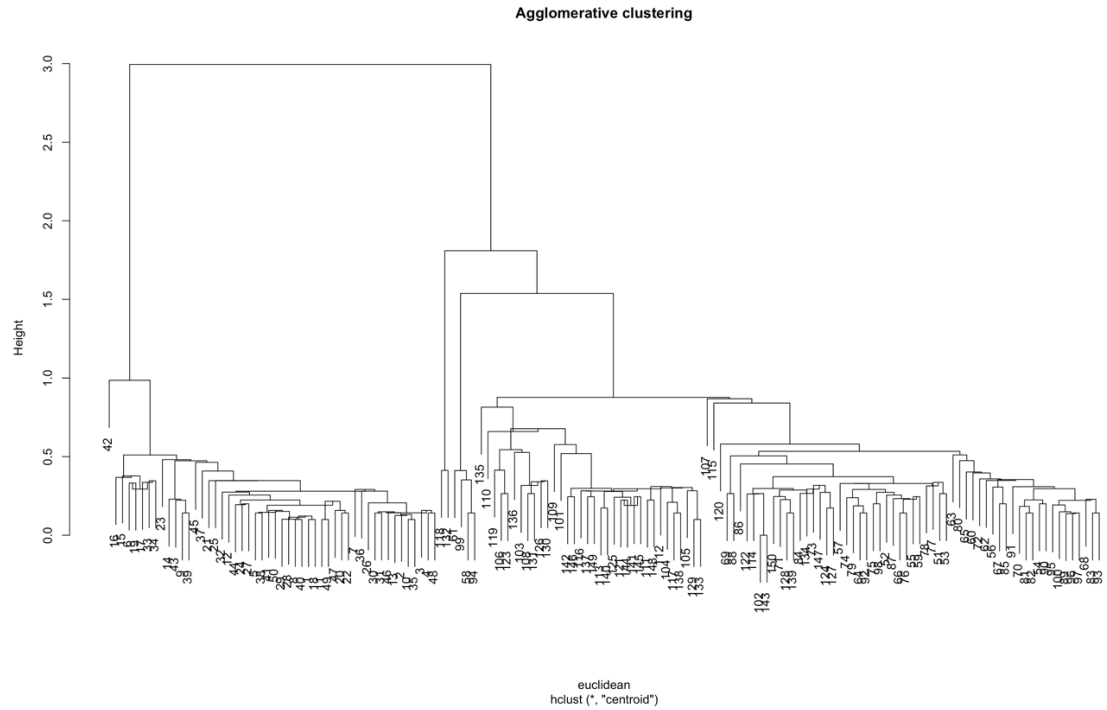
Output:



Code:

```
# performing agglomerative clustering with centroid linkage
agglomerative_cluster = hclust(euclidean, method = "centroid")
plot(agglomerative_cluster, main = "Agglomerative clustering")
```

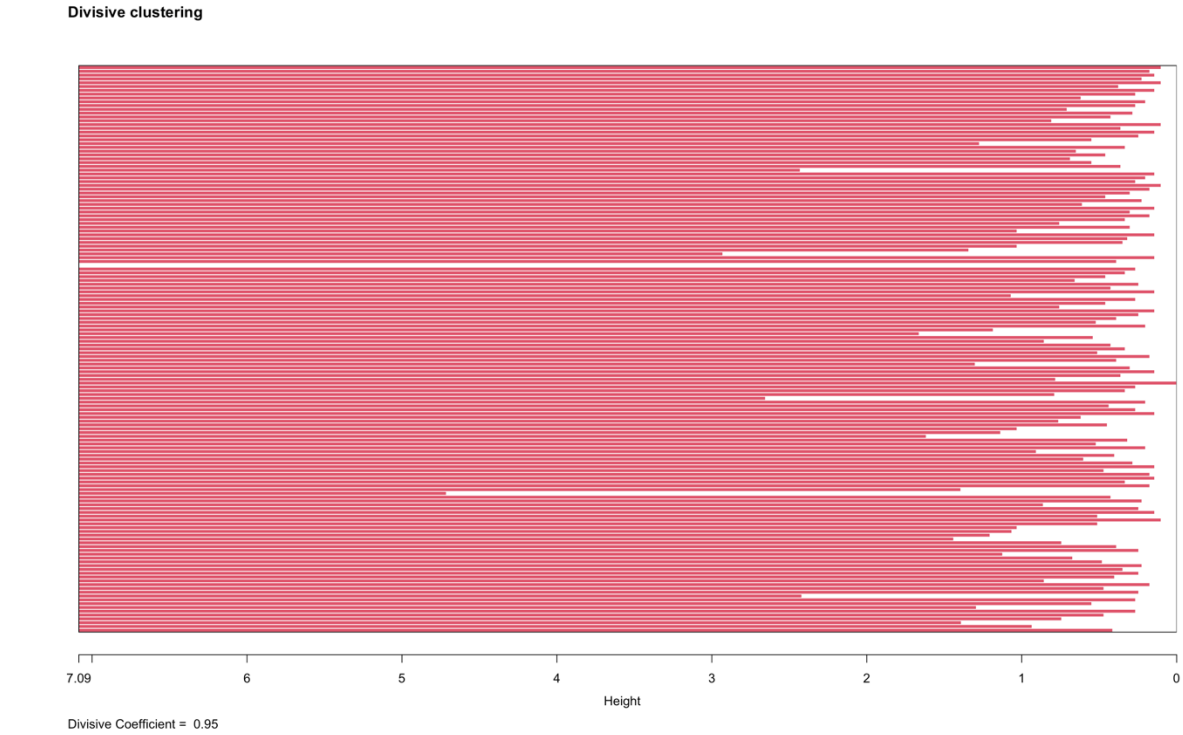
Output:

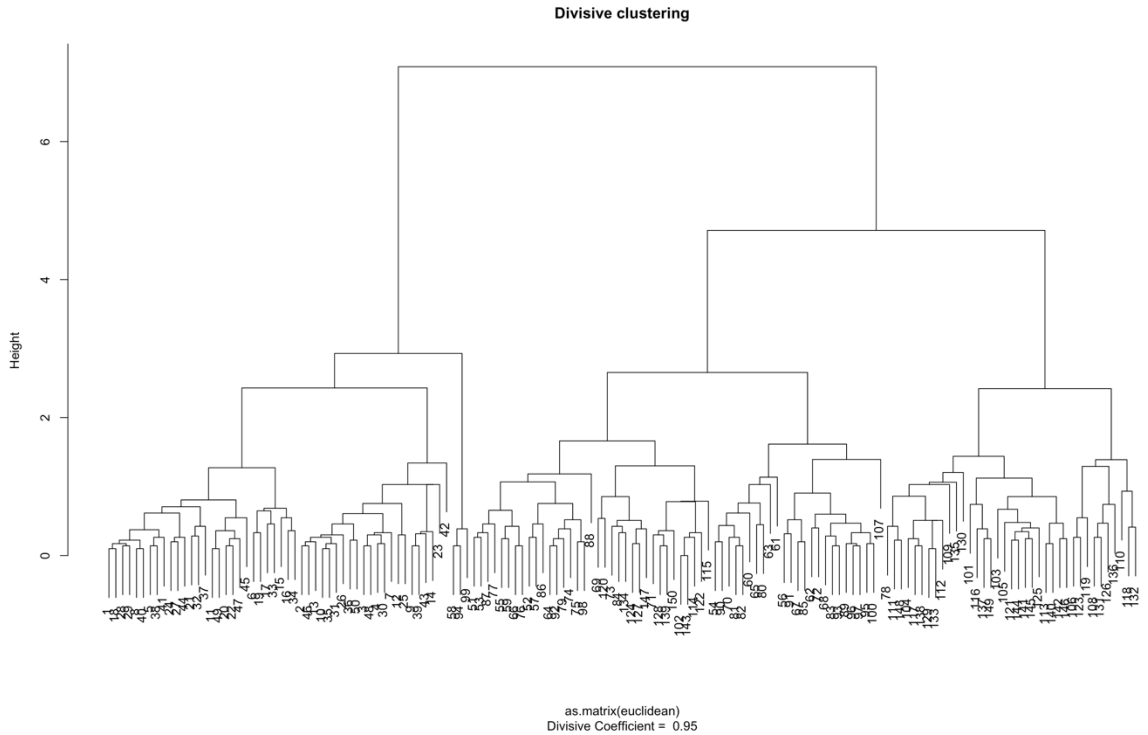


Code:

```
# performing divisive clustering
divisive_cluster <- diana(as.matrix(euclidean), diss = TRUE, keep.diss = TRUE)
plot(divisive_cluster, main = "Divisive clustering")
```

Output:

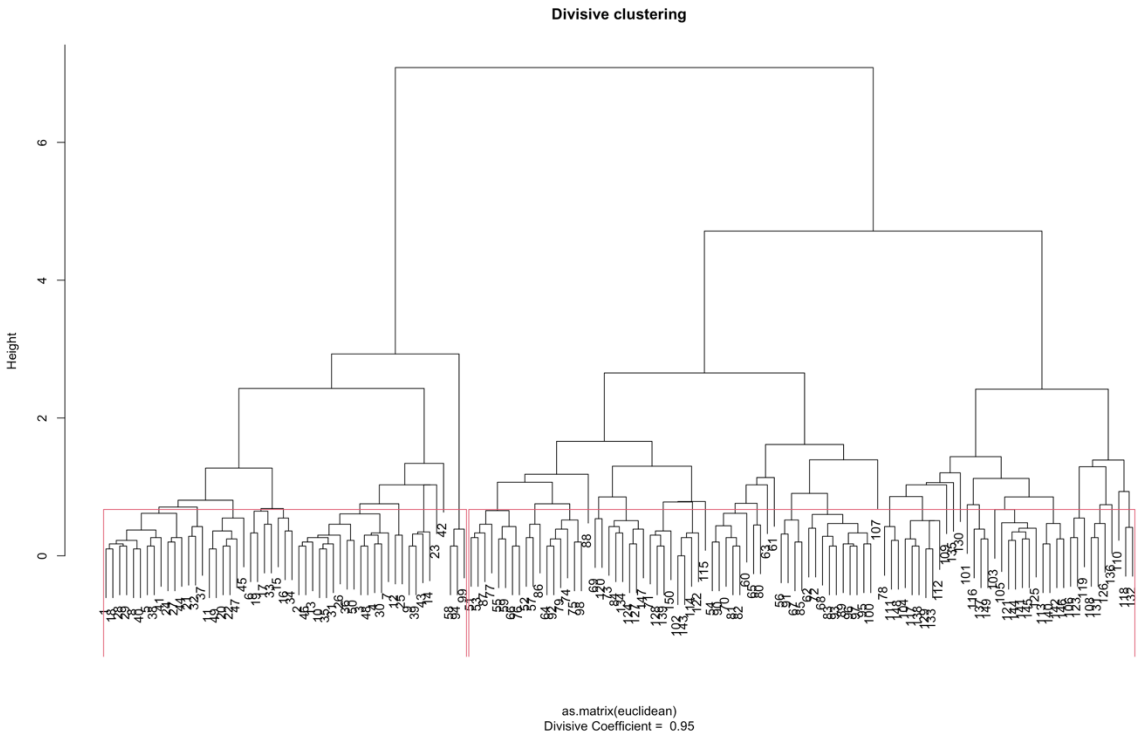




Code:

```
# plotting dividing rectangle
rect.hclust(divisive_cluster, k = 2)
```

Output:



Code:

```
# viewing divided groups
group = cutree(divisive_cluster, k = 2)
table(group)
```

Output:

```
> # viewing divided groups
> group = cutree(divisive_cluster, k = 2)
> table(group)
group
 1  2
53 97
```