# Experiment-3.1

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**Aim** – To perform the hierarchical clustering using R programming.

## Objective-

* Represent the reading of file using R studio
* Displaying the graph using cluster, purrr and datasets.
* Demonstration of Cluster analysis by hierarchical clustering.

**Script and Output-**

# Load required packages

library(datasets) # contains iris dataset

library(cluster) # clustering algorithms

install.packages("factoextra")

library(factoextra) # visualization

install.packages("purrr")

library(purrr) # to use map\_dbl() function

# Load and preprocess the dataset

df<- iris[, 1:4]

df<- na.omit(df)

df<- scale(df)

# Dissimilarity matrix

d <- dist(df, method="euclidean")

d

hc1 <- hclust(d, method = "complete")

plot(hc1, cex = 0.6, hang=-1)

sub\_grps<- cutree(hc1, k=3)

fviz\_cluster(list(data = df, cluster = sub\_grps))

plot(hc1, cex = 0.6, hang=-1)

rect.hclust(hc1, k = 3, border=2:4)

**Output-**





