

## Machine Learning-04 K-Means Clustering

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```
setwd("D:\\Workshops\\R Programming for Data Science Workshop\\Part 04 -  
Machine Learning\\Datasets")  
df=read.csv("Wine.CSV")  
head(df)  
  
df_new=df  
df_new$Class=NULL  
  
head(df_new)  
  
#Scaling data  
fun_scaling=function(v){  
  return((v-mean(v))/sd(v))  
}  
  
data_scaled=apply(df_new, 2, fun_scaling)  
head(data_scaled)  
  
#Data matrix form  
data_mat=as.matrix(data_scaled)  
  
km=kmeans(data_mat,3)  
  
km$cluster  
  
df$Class  
  
#Checking the optimum k  
k_vec=1:10  
inertia=c()  
  
for(k in k_vec){  
  km=kmeans(data_mat,k)  
  inertia=c(inertia,km$tot.withinss)  
}  
  
plot(inertia,type="b")  
  
km=kmeans(data_mat,4)  
  
km$cluster
```