# install package /library “class” for using knn

library("class", lib.loc="C:/Program Files/R/R-3.2.2/library")

age<-c(25,35,45,20,35,52,23,40,60,48,33)

loan<-c(40,60,80,20,120,18,95,62,100,220,150)

default<-c("N","N","N","N","Y","Y","Y","Y","Y","Y","Y")

def<-factor(default)

data =data.frame(age,loan,def)

n.points<-11

training<-sample(1:n.points, 8, replace=FALSE)

train<-subset(data[training,], select=c(age,loan))

testing<-setdiff(1:n.points,training)

test<-subset(data[testing,], select=c(age,loan))

cl<- data$def[training]

true.labels<-data$def[testing]

knn(train,test,cl,k=3)

testcase<-c(40,80)

knn(train,testcase,cl,k=3)

knn(train,testcase,cl,k=5)

#K-Means: or K-Centroids:

list1<-c(23, 25, 24, 23, 21, 31, 32, 30,31, 30, 37, 35, 38, 37, 39, 42, 43, 45, 43, 45)

centers<-c(20,30,40)

kmeans(list1,centers,algorithm=c("Hartigan-Wong"))