hw9\_Utsav\_Italiya\_10475248

Comments: reading the files and loading the data

rm(list = ls())  
library(e1071)  
  
df <- read.csv("F:/Sem1/CS513/lecture9/wisc\_bc\_ContinuousVar.csv",header=TRUE, sep=",")  
df <- subset(df, select = -c(id))  
df$diagnosis<-factor(df$diagnosis, levels = c('M','B'),labels = c(1,2))  
View(df)

Comments: training and testing datasets

#70% training and 30% testing data  
idx<-sort(sample(nrow(df),as.integer(.70\*nrow(df))))  
training<-df[idx,]  
testing<-df[-idx,]

Comments: performing svm model and finding accuracy

#training SVM model  
svm\_model <- svm( diagnosis~ ., data = training )  
svm\_prediction <- predict(svm\_model, testing )

#confusion matrix and accuracy  
confusion\_matrix <-table(predict\_svm = svm\_prediction, class = testing$diagnosis)  
confusion\_matrix

## class  
## predict\_svm 1 2  
## 1 64 2  
## 2 1 104

accuracy <- function(x){sum(diag(x)/(sum(rowSums(x)))) \* 100}  
accuracy(confusion\_matrix)

## [1] 98.24561