> install.packages("caTools")

> install.packages("ROCR")

> library(caTools)

> library(ROCR)

# Splitting dataset

> split <- sample.split(mtcars, SplitRatio = 0.8)

> split

> train\_reg <- subset(mtcars, split == "TRUE")

> test\_reg <- subset(mtcars, split == "FALSE")

# Training model

> logistic\_model <- glm(vs ~ wt + disp,data = train\_reg,family = "binomial")

> logistic\_model

> summary(logistic\_model)

# Predict test data based on model

> predict\_reg <- predict(logistic\_model,test\_reg, type = "response")

> predict\_reg

# Changing probabilities

> predict\_reg <- ifelse(predict\_reg >0.5, 1, 0)

> table(test\_reg$vs, predict\_reg)

> missing\_classerr <- mean(predict\_reg != test\_reg$vs)

> print(paste('Accuracy =', 1 - missing\_classerr))

# ROC-AUC Curve

> ROCPred <- prediction(predict\_reg, test\_reg$vs)

> ROCPer <- performance(ROCPred, measure = "tpr",x.measure = "fpr")

> auc <- performance(ROCPred, measure = "auc")

> auc <- auc@y.values[[1]]

> auc

# Plotting curve

> plot(ROCPer)

> plot(ROCPer, colorize = TRUE, print.cutoffs.at = seq(0.1, by = 0.1),main = "ROC

CURVE")

> abline(a = 0, b = 1)

> auc <- round(auc, 4)

> legend(.6, .4, auc, title = "AUC", cex = 1)