**STT 811**

**In-Class Assignment 10**

This problem will use the OJ dataset. Note that you will use Purchase as the target (no need to convert to 0/1)

1. Split the data into training and test datasets (with a 75/25 split).

```

oj <- ISLR2::OJ

split\_pct <- 0.75

n <- length(oj$Purchase)\*split\_pct # train size

row\_samp <- sample(1:length(oj$Purchase), n, replace = FALSE)

train <- oj[row\_samp,]

test <- oj[-row\_samp,]

```

1. Build a LDA and QDA model for your target based on PriceDiff and LoyalCH. Compute the confusion matrix for both the train and test datasets. How do they compare?

```

oj\_train\_lda <- lda(data = train\_oj, Purchase ~ PriceDiff + LoyalCH)

test\_pred\_lda <- predict(oj\_train\_lda,test\_oj)

test\_cm <- confusionMatrix(as.factor(test\_pred\_lda$class), reference = as.factor(test\_oj$Purchase))

test\_cm$table

Reference

Prediction CH MM

CH 144 26

MM 25 73

oj\_train\_qda <- qda(data = train\_oj, Purchase ~ PriceDiff + LoyalCH)

test\_pred\_qda <- predict(oj\_train\_qda,test\_oj, type = "response")

test\_cm <- confusionMatrix(as.factor(test\_pred\_qda$class), reference = as.factor(test\_oj$Purchase))

test\_cm$table

Reference

Prediction CH MM

CH 123 38

MM 46 61

```