# DaigleHomework5.R

*mbair*

*Wed Oct 17 22:38:44 2018*

```
# Chris Daigle
# Exercise 5

# Apply logit, LDA, and QDA to Caravan ####
library(MASS)
library(ISLR)
# Logit ####
test <- Caravan[1:1000,]
train <- Caravan[-(1:1000), ]

glmFit <- glm(Purchase ~ ., family = binomial, data = train)
```

```
## Warning: glm.fit: fitted probabilities numerically 0 or 1 occurred
```

```
glmProb <- predict(glmFit, test, type = 'response')

glmPred <- rep('No', dim(test)[1])
glmPred[glmProb > 0.5] <- 'Yes'

table(glmPred)
```

```
## glmPred
##  No Yes
## 993   7
```

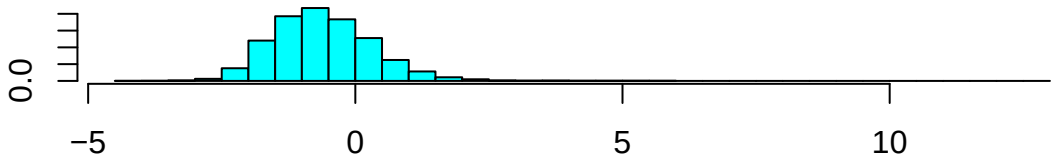
```
table(glmPred, test$Purchase)
```

```
##
## glmPred  No Yes
##     No  934  59
##     Yes   7   0
```

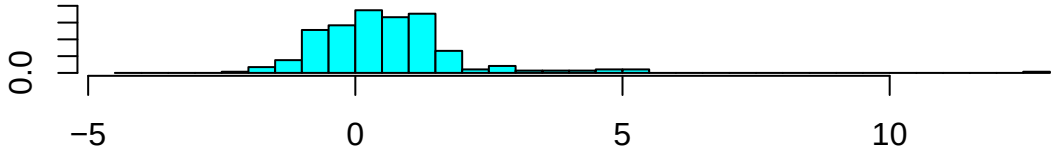
```
# LDA ####
test2 <- Caravan[1:1000,]
train2 <- Caravan[-(1:1000), ]

ldaFit2 <- lda(Purchase ~ ., data = train2)
# ldaFit2

plot(ldaFit2)
```




group No




group Yes

```
ldaPred2 <- predict(ldaFit2, test2)
# ldaPred2

ldaClass2 <- ldaPred2$class
table(ldaClass2)
```

```
## ldaClass2
##  No Yes
## 988  12
```

```
table(ldaClass2, test2$Purchase)
```

```
##
## ldaClass2  No Yes
##       No  933  55
##       Yes   8   4
```

```
mean(ldaClass2 == test2$Purchase)
```

```
## [1] 0.937
```

```
# QDA ####
# ISSUE WITH RANK (VAR/COV MATRIX) - WON'T RUN
# qdaFit <- lda(Caravan$Purchase ~ ., data = train2)
# qdaFit
# qdaPred <- predict(qdaFit, testX)
# qdaPred
# qdaClass <- qdaPred$class
# table(qdaClass)
# table(qdaClass,trainY)
# mean(qdaClass == testY)
```