library(readr)

ebay\_train\_y <- read\_csv("206/dmba/ebay\_train\_y.csv")

ebay\_train\_X <- read\_csv("206/dmba/ebay\_train\_X.csv")

ebay\_valid\_y <- read\_csv("206/dmba/ebay\_valid\_y.csv")

ebay\_valid\_X <- read\_csv("206/dmba/ebay\_valid\_X.csv")

y <- ebay\_train\_y$`Competitive?`

X <- data.matrix(ebay\_train\_X)

library(glmnet)

# lasso L1

# Find the best lambda using cross-validation

set.seed(123)

cv.lasso <- cv.glmnet(X, y, alpha = 1, family = "binomial")

# Fit the final model on the training data

modelL1 <- glmnet(X, y, alpha = 1, family = "binomial",

lambda = cv.lasso$lambda.min)

# Display regression coefficients

coef(modelL1)

# ELASTIC NET WITH 0 < ALPHA < 1

a <- seq(0.1, 0.9, 0.05)

library(foreach)

search <- foreach(i = a, .combine = rbind) %dopar% {

cv <- cv.glmnet(X, y, family = "binomial", nfold = 10, type.measure = "deviance", paralle = FALSE,

alpha = i)

data.frame(cvm = cv$cvm[cv$lambda == cv$lambda.1se], lambda.1se = cv$lambda.1se, alpha = i)

}

cv3 <- search[search$cvm == min(search$cvm), ]

cv3

md3 <- glmnet(X, y, family = "binomial", lambda = cv3$lambda.1se, alpha = cv3$alpha)

coef(md3)

coef(modelL1)

coef(md3)

**RESULTS:**

**Lasso:**

A screenshot of a computer program

Description automatically generated

**Elastic Net:**

A screenshot of a computer program

Description automatically generated