STAT542 - Coding Assignment 2

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1.BostonHousing1.Rdata

```
method_names = c("Full","AIC.F","AIC.B","BIC.F","BIC.B","R.min","R.1se",
                 "L.min","L.1se","L.Refit")

load("BostonHousing1.Rdata")
HousingData = Housing1

r = 50
n = nrow(Housing1)
ntest = round(n*0.25)

#Prepare test ids for all iteratiosn
all_test_ids = matrix(0, ntest, r)
for(t in 1:r){
  all_test_ids[, t] = sample(1:n, ntest)
}

#Make matrix to store MSPE and DF info for each iteration
MSPE_Stat = matrix(0, r, length(method_names))
colnames(MSPE_Stat) = method_names

DF_Stat = matrix(0, r, length(method_names))
colnames(DF_Stat) = method_names
```

Method 1: Full Model

```
start.time = proc.time()

for (i in 1:r) {
  test_ids = all_test_ids[,i]

  full_model = lm(Y ~ ., data = HousingData[-test_ids, ])
  Ytest_pred = predict(full_model, newdata = HousingData[test_ids,])
  MSPE_Stat[i,1] = mean((HousingData[test_ids,]$Y - Ytest_pred)^2)
}

proc.time() - start.time
```

```
##    user  system elapsed
##   0.196   0.006   0.202
```

2.BostonHousing2.Rdata

3.BostonHousing3.Rdata