Lab 7: Automatic Model Selection

We will be using the cars2010 data set within the library AppliedPredictiveModeling.

a. Using the cars2010, perform a *forward selection* (using the p-value criteria at 0.10). What is the final model?

step(lm.0, scope = list(lower = lm.0, upper = lm.full), direction = "forward", k = qchisq(0.1, 1, lower.tail = FALSE))
Final model is: FE ~ EngDispl + CarlineClassDesc + DriveDesc + Transmission + NumCyl +IntakeValvePerCyl + VarValveLift + TransCreeperGear + TransLockup (lots of parameter estimates to write out..)

i. What was the first variable added?

Engine Displacement (EngDispl)

ii. What was the last variable added?

TransLockup

b. How many variables (out of the 13 possible) would result in the final model from using *stepwise selection* with the *BIC* criteria?

step(lm.0,scope = list(lower = lm.0, upper = lm.full), direction = "both", k = log(nrow(cars2010)))

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c. Are the two models from a and b the same?

No, they are not.