**PART I.**

1. Load the dataset [mtcars.xlsx](https://maryville.instructure.com/courses/71038/files/16328251/download?wrap=1)[Download mtcars.xlsx](https://maryville.instructure.com/courses/71038/files/16328251/download?download_frd=1)into memory and convert column **am** to a factor using factor() function.



1. Split the data into training set and test set. The training set contains the first 35 observations, the test set containing the remaining observations.

Graphical user interface, text

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1. Build a logistic regression model with the response is am and the predictors are **mpg**, **cyl**, **hp,** and **wt** using glm() function



1. Compute the test error on the test data set using a confusion matrix. Is it a good model based on test error?

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It is an excellent model based on the test error. Although you probably wouldn’t want to rely on a model that uses 6 samples!

**Part II.**

1. Build a linear model to forecast number of total rentals (**count**) using potential predictors, **season, holiday, workingday, weather, atemp,**and **registered**.



1. Perform best subset selection using bestglm() function based on BIC. What’s the best model based on BIC?

See the code for best model.

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1. Compute the test error of the best model based on BIC using LOOCV.

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1. Calculate the test error of the best model based on BIC using 10-fold CV.

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1. Perform best subset selection using bestglm() function based on CV. What’s the best model based on CV?

See code for best model.

Text

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1. Perform the backward stepwise selection using stepAIC() function. What’s the best model?

See cod for best model.

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