In-class exercise: Two factor ANOVA without interaction

Names: (signatures only please, printed names will not be counted)

1.) 4.)

2.) 5.)

3.) 6.)

Overview

In this exercise we suppose we model gas mileage with two factors, one for car vs. truck, and one for city vs. highway.

Instructions

As usual, start by bringing your copy of the `MTH225_Fall2016` archive up to date.

Open a command prompt or terminal window, and use the `cd` command to change to the `MTH225_Fall2016` subdirectory. Then type the command:

```
git pull origin master
```

The pull operation should download the following files:

- The R-knitr code: `MTH225-10_two_way_anova.Rnw`
- The data in Rdata format: `EPA_mileage.Rdata`
- The STAN model file: `two_factor_anova_without_interaction.stan`

In this exercise, the data file is in Rdata format, which you read with a `load` command. The .Rnw file is set up to do this, you should not have to modify it or the .stan files.

Questions

Use the *Compile PDF* button to run the model, and use the output to answer the following questions:

1) What is the point estimate and 95% confidence interval for the difference between cars and trucks?

2) What is the point estimate and 95% confidence interval for the difference between city and highway?

3) What is the estimated median (50th percentile) mileage for cars on the highway?

4) What is the 95% confidence interval for mileage of trucks in the city?