Week 2 Workshop

Excel Case Study (4 hours)

This is a 3-part workshop where you will apply many of the Excel and presentation skills you have learned so far, including data cleaning, linear regression, and visualization.

Open the Excel workbook called cars\_data\_excercise.csv. This is a record of some of the vehicles sold in the United States between 1970 and 1982. Your mission is to clean the dataset, analyze it, and create a presentation for Karl Carson, the editor of, Cars Magazine.

You must cover the most interesting developments in the automotive industry in the past 12 years. Including changes in horsepower, displacement, weight, acceleration and so on.

There is a snag however, that data you will be using is not clean and has missing values. You will need to make educated guesses as to what the missing values might be and justify those guesses to Mr. Carson.

Are you ready for the challenge?

## Part 1 - Data cleaning

1. Remove duplicate rows
2. Replace or remove special characters
3. Make sure that all vehicle models are properly capitalized

The data contains a few duplicate rows, some garbage characters, some awkward capitalization and some missing data.

## Part 2 – Modeling Missing Values

1. Use linear regression to replace missing values
2. Record the variables used to create and justify your choice
3. Make sure to keep R-Squared as well as independent and dependent variables in mind

Once you have modeled the missing values be sure to record which values were missing and justify your methods for their replacement in your presentation. The only thing greater than Mr. Carson's love of cars is his irrational hatred of blind guesses.

## Part 3 - Presentation

1. Create a presentation that includes a clear explanation of your methods and conclusions
2. Use the PowerPoint presentation template provided to create an impactful talk
3. Dazzle Mr.Carson with the depth of your analysis and the elegance of your visualizations

Please work together as a table on this project and divide the presentation among the contributors to best tell your story. At the end of the day (~4pm) you’ll have the opportunity to share your presentation with the class!