**STT 810**

**In-Class Assignment 12**

All questions should be answered with ggplot. We will be using the cars\_multi dataset for the problems. Be sure to label all graphs with a title, and all axes with a name.

1. Create a histogram for the weight variable. Use your favorite color for the histogram. Color name lookup: <http://www.stat.columbia.edu/~tzheng/files/Rcolor.pdf>

g = ggplot(data = cars\_multi, aes(x = weight)) + geom\_histogram(fill = "deepskyblue4")

g + labs(x = "Car Weight", y = "Count", title = "Car Weight Histogram")

Chart, histogram

Description automatically generated

1. Next, create a histogram for the acceleration variable, with separate values by cylinder.

g = ggplot(data = cars\_multi, aes(x = acceleration,fill = as.character(cylinders))) + geom\_histogram() + facet\_grid(cylinders ~.)

g + labs(x = "Car Acceleration", y = "Count", title = "Car Acceleration Histogram by # of Cylinders")

Timeline

Description automatically generated with medium confidence

1. Create a box and whisker plot for the horsepower variable.

g = ggplot(data = cars\_multi, aes(y = as.integer(horsepower))) + geom\_boxplot()

g + labs(y = "Horsepower",title = "Box and Whisker Plot of Horsepower")

Table

Description automatically generated

1. Plot a scatter plot of mpg vs. weight (y is mpg, x is weight), colored by cylinders (you will have to use as.character to do this). What can you say about the relationship between these 3 variables?

g = ggplot(data = cars\_multi, aes(x = mpg, y = weight, color = as.character(cylinders))) + geom\_point()

g + labs(x = "mpg", y = "weight", title = "Mpg vs Weight Scatter Plot")

Chart, scatter chart

Description automatically generated

The lesser the weight the higher the mpg is!