**Final Project Summary**

Auto accidents are one of those events that seem inevitable for an individual to be involved with at least once in a lifetime and there are varying types and severity of auto accidents that could take place, some more than others. But the question that is continually being assessed by insurance companies is what factors contribute to auto accidents and their severity and what can be done to minimize or prevent these factors. The focus on this project was to look at a handful of variables that may seem obvious to some but are likely contributors to accidents. They are accidents that have injuries and/or fatalities, type of collision that occurs, road conditions when accident happened, whether traffic controls were present, and the number of vehicles involved in the accident.

After completing the analysis on the dataset from 2014 national auto accidents, there were some surprising results. Regarding injuries and fatalities, both were very low considering the dataset had over 290,000 complete data entries. Also, a majority of accidents were in dry road surface conditions and took place in areas with no traffic controls. There was a good amount of variability when it came to looking at accidents based on the type of collision and the most common accident was where a vehicle rear-ended another with over 80,000 results. Some key takeaways from the analysis is that what may first look on paper to be major contributory factors, wound up only contributing to a small percentage of accidents. What seemed to be missing with the variable counting the number of vehicles involved was whether both vehicles were moving at the time of the accident or whether it was just the actions of one driver that resulted in a loss occurring.

Some challenges were with using categorical variables in my analysis and trying to make a coherent visual that would show the results clearly. Trying to run the PMF and CDF along with the regression analysis seemed impossible with the non-numeric variables. However, with these challenges it helped understand more of the coding foundations for different packages, libraries and code chunks. I believe with more practice on the concepts, the results would have been more fruitful and clear.