* A description of the problem and a discussion of the background.
  + Using historical data of previous traffic accidents to predict and warn drivers ahead of a potential accident they may be heading toward. I will try to create an alert that predicts based on known outcomes such as road, light and weather conditions. I’m going to focus the efforts to the most dangerous conditions that created the most severe results. I will also explore the non-injury impacts as well.  
      
    The study itself should be relevant to any person who drives and is interested in projected unsafe conditions. This data is specifically for the Seattle area, where this data set is taken and
* A description of the data and how it will be used to solve the problem.
  + The data set provided for this study contains over 194,000 traffic accidents and labeled fields that will be key to helping predict weather conditions are ideal for driving or if avoidance of an area/specific conditions should be alerted on. These fields contain, lighting, weather, road conditions, as well as, severity of the accident, what type of object was hit or description of impact. The data also contains lat-long coordinates (columns “X”,”Y” respectively) which could be used to create a mapping of the accidents, which in an advanced program could be used to program into your vehicle’s GPS to recommend said locations during met conditional periods of high risk.
  + Exploring the data I’m looking into the severity of the traffic accidents. Based on these results 70% of all accidents in this study result in property damage and only ~30% of them have an injury result.

Graphical user interface, text, application, email

Description automatically generated

* + Wanting to see some of the types of accidents that occurred, I split the dataframe into two unique sets. One for severe accidents and the other for the minor instances. We find that a quarter of all severe accidents involved a Rear Ended impact and another 23% when one of the vehicles are entering a roadway at an ‘angle’. For the minor data set. A third of all the property damage is a result of motorists striking into parked cars. We also noticed that 15% were also ‘angle’ strikes leading to a quick conclusion that almost 40% of all accidents, both severe and minor combined, involved the operator entering at an angle collision. It can also be determined that rear ended impacts rank high for both dataframes and together ‘Rear Ended’ and ‘Angles’ combine to tally 77% of all the various traffic incidents.

Table

Description automatically generated

* + Now that some of the key types of collisions have been explored I will break the dataframe up into all of the conditional factors that attribute to these impacts. The following block of code has a nice clearer set to work with and will be referenced here on out as the ‘dataframe’.

Table

Description automatically generated

* + Attempting to get a rough idea of what weather and road conditions produced the most amount of accidents. Surprisingly, there seems to be a larger percent of accidents that occurred during clear weather. Not as surprising the wet road conditions and raining weather attributed to the second highest amount of incidents.

A picture containing timeline

Description automatically generated

Graphical user interface, text, application

Description automatically generated

* Conclusion section where you conclude the report.
  + Surprisingly, after reviewing the above conditions Dry, Clear and Daylight are the overwhelming majority of accident prone conditions. Not specifically citing any fact here, but one could speculate that in a temperate weather zone and with the majority of commuter times during daylight, it would preclude why these numbers are higher. Higher amounts of people on the road = more accidents. Unfortunately, this does not support our initial assumptions of the data that wet and dark conditions would increase the likelihood of an accident.
  + Unfortunately any recommendations I have would be that driving in general is dangerous. Surely, when conditions are poor and you are distracted or some other outside factor is in play you would be more likely to have an impact accident. Given, the statistical data and the above noted conditions, it seems that the sheer volume of drivers on the road during the heavier commute times are causing more accidents than any one single conditional issue.