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Data Science

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For my final project, I only used Jupyter Notebook files to collect, clean, and visualize my data. Inside of Jupyter, I used the seaborn, pandas, numpy and matplotlib libraries to visualize the data I had collected. These libraries helped try and express answers for the questions I looked for in the data. The questions I had at the start of the project were:

* Is there any location in Baton Rouge that has the most amount of accidents? Why?
* Is there a pattern to why these accidents keep happening? A part of the road, a dim lit section?
* What is the most common accident?
* Is there any way to fix some of these reasons for the accidents? A roadway design, a sharp curve, etc.
* Are these huge accidents with many cars? Are they fatal? Is there a reason for that based on the location/ weather/ time of day, etc.?

But the most important question, and goal for the project…

* Is there any information I can give to the city of Baton Rouge to lower the rates of accidents?

The insights I discovered were not as astounding as I thought they were going to be. I gave a list of the top five most accident prone streets, and number one was ‘I-10 W’, that street being an interstate highway. There was no clear pattern to why these accidents keep happening, other than most rear end accidents happen on city streets, and most speeding accidents happen on the highway.

The most common accident was a rear end, occurring about 35% of the time. One of my findings showed that most accidents happen on roads that do not have a physical barrier in between lanes. One idea for the city of Baton Rouge would be to put barriers in between lanes wherever possible. It could stop up to 14% of accidents that are more likely without any barrier in between lanes. That includes side swiping, right turns, and head on collisions. There are very few huge accidents, most accidents only included two cars, between 60-70%. Almost none of them had injuries, and even fewer had fatalities. The weather, road condition, roadway surface, had little to do with any of these accidents. Most accidents occur on a dry road, on a clear day, in the day time, on a clean paved road. The opinion I would give to the city of Baton Rouge would be to put concrete barriers wherever possible. Some other piece of advice would be to maybe be more strict on the fines for these violations, put up more signage in hopes to reduce speeding, and maybe have people retake their drivers test. For future analysis, I would like to use some sort of satellite map to get a literal look at what the streets there look like. The data came with the exact longitude and latitude of the accident, so I could collect the most accident prone spot and look at it from a bird's eye view. I believe that would create an even better report for the city and really lead to some beneficial opportunities to reduce accidents.