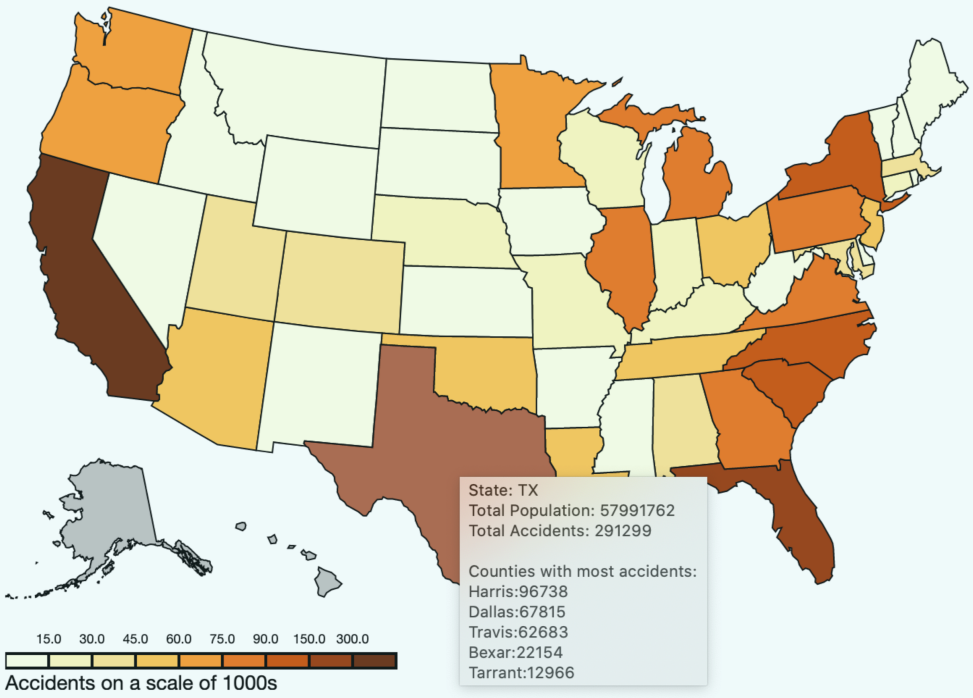
Analysis of Accidents in United States

Anuroop Katiyar and Gourav Mangla
Computer Science Department, Stony Brook University, NY, USA

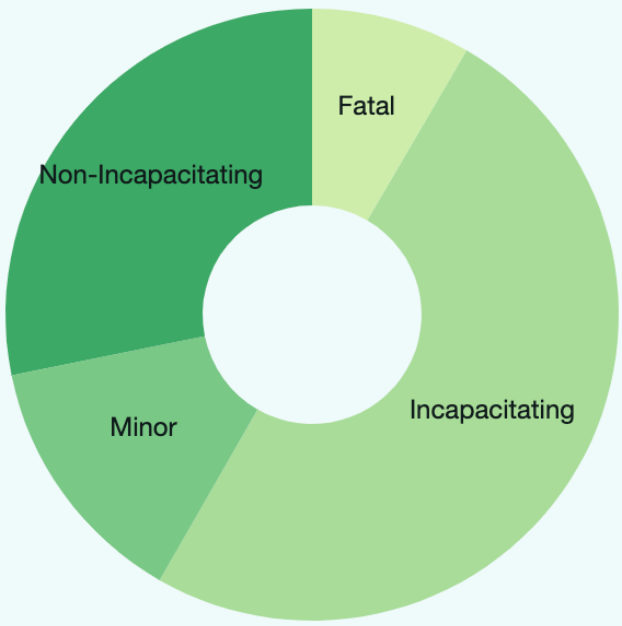
Introduction

Approximately 1.35 million people die in road crashes each year, and around 20-50 million suffer non-fatal injuries, often resulting in long-term disabilities. Road crashes are the single greatest annual cause of death of healthy U.S. citizens traveling abroad. In this poster, we provide a visual analysis of reported accidents in US across 8 years. We observe the number of accidents on the timeline between 2011-2019. We also observe state-wise total accidents in the country. Additionally, we visualize the weather condition on the day of accident to find correlation between them. The accidents are also split as per their severity to observe the impact of the accident.

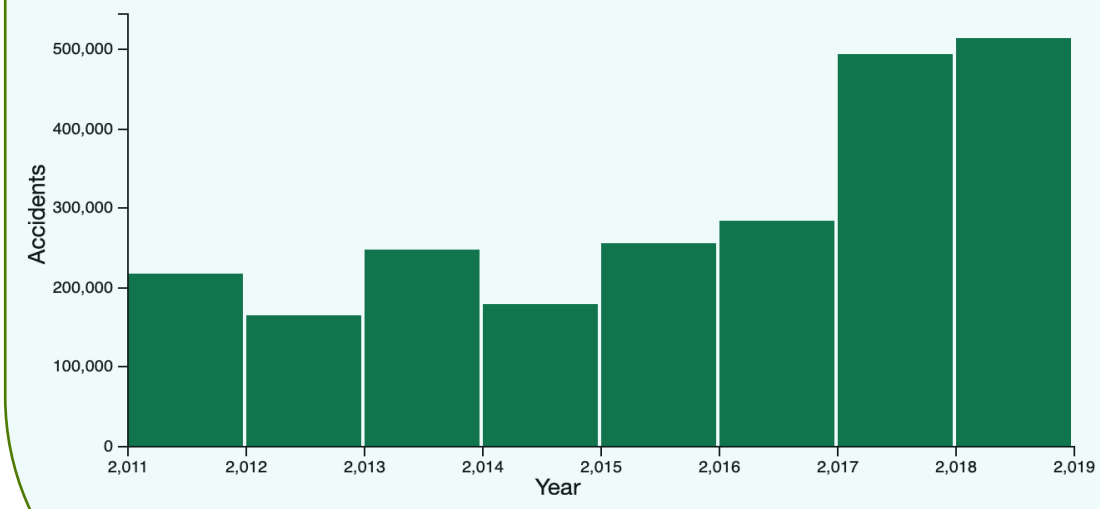
Observations



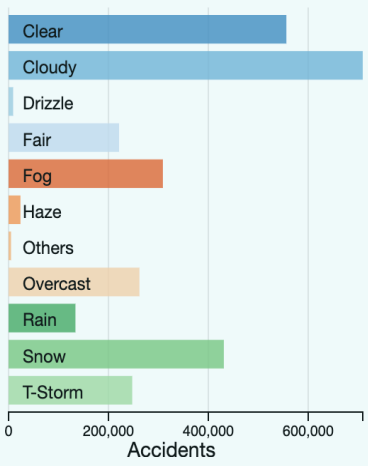
1. **State-wise data representation on US Map**: We can see that the populated states like California, Texas, New York, etc have high number of accidents. We can also check the counties for each state with high number of accidents.



2. **Severity of Accident:** The above pie chart shows that almost half of all the accidents in United States left the victim in an incapacitated state which means the victim required medical attention.



3. **Yearly count of accidents**: We can see from the histogram below that there is a spike in accidents in 2018 and 2019.



4. **Weather Condition:** The below bar graph shows that most accidents took place on days when the weather was cloudy, snowy or clear.

Conclusion

Using our analysis, we identified the states with the greatest number of accidents across the years. We were also able to list out the top 5 counties in a state with their accident counts. Due to the interactive nature of our dashboard, we could select single or multiple states at a time on the data map using which we found out trends in the accidents reported for the selected states over a particular time frame. Using the weather data, we tried to find a correlation between the weather condition on the accident day and found that weather could infact be the reason for the accident in some cases. The dataset we started off with had around 3 million records, which made it very difficult to analyze. Visual analytics not only helped us to represent the large dataset in a more meaningful manner moreover it also helped to extract useful information and find interesting correlations.