Project Proposal

Team members:

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Motivation / Inspiration / Case Study:

This project will analyze and visualize the information of Michigan State road accidents in 2020. It will examine and analyze the factors affecting road accident causalities such as different vehicles, speed limits, weather conditions, gender ratios, time of the accident, location, and number of fatalities across each region/county.

 Brief literature review of related projects:

The domain experts have posted annual reports with appendix data at Michigan State Road Accident 2020. One of the research paper "***Road Traffic Accident Data Analysis and its Visualization***" by Muhammad Babar Ali Rabbani, Muhammad Ali Musarat, Wesam Salah Alaloul, AhsenMaqsoom, Hamna Bukhari, Waqas Rafiq performed visualization on Road Traffic Accidents data in the Hayatabad area, Pakistan, using Python programming language that helped the researchers interpret the important information and devise effective prevention and safety measures to avoid the huge number of Fatal crashes and Fatalities in the future. The visualization consists of four major steps they are: Collection of Raw data from various sources such as GPS data, official local department statistics, or the incident logs, preprocessing the raw data by converting the data into temporal properties, making use of the visual symbols and icons like bar and line chart and finally the visualization was created by using Infographics and maps.

Where the data that will be used can be found publicly:

- **National Highway Traffic Safety Administration:**
  https://www-fars.nhtsa.dot.gov/States/StatesCrashesAndAllVictims.aspx

- **Michigan State Police**
  https://www.michigan.gov/msp/-/media/Project/Websites/msp/cjic/pdfs9/2020_year_end_traffic_crash_statistics.pdf?rev=4348f6d6236442c4bcd9b2307d574c4a&hash=A6D22EE397D73C51D875060BEF19277B

Tasks, Insights, and Research Questions:

Tasks or Research questions that are identified for the Road Accidents Analysis and Visualization in Michigan 2020 are as follows:

1) What is the overall pattern for crashes involving and casualties in Michigan over the last ten years, from 2010 to 2020?
2) How many accidents happened on each day of the week and time of day based on the total number of road fatalities in Michigan in 2020?
3) Which county in Michigan is more prone to accidents in 2020, and how accident-prone is each type of road within that county?
4) After gathering a variety of factual information on road accidents in Michigan in 2020, what are the takeaways that would be of great interest to the Drivers?