**CSCE 5320 SCIENTIFIC DATA VISUALIZATION**

**PROJECT PROPOSAL**

**Description:**

* Team Members:

In the description section of a project proposal, you should first provide the names of team members.

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* Title:

The Impact of Road Conditions and Traffic Patterns on Accident Severity.

GitHub Link**:** <https://github.com/Saibhargav2001/DV-PROJECT>

* Introduction to Domain:

This project examines road safety and traffic conditions, focusing on how road conditions and traffic conditions can affect traffic severity.

**Goals and Objectives:**

* Motivation:

Poor road conditions and heavy traffic can cause accidents. This project aims to investigate the relationship between crash severity and road conditions and overall traffic.

* Significance:

Understanding these interactions can lead to the identification of road maintenance priorities, targeted safety interventions, and traffic management strategies to reduce the negative consequences of accidents.

* Objectives:
* Create D3.js visualizations showing accident locations, density and severity, which can be covered by road safety data (if a suitable dataset is found).
* Use Tableau/Power BI to analyze the relationship between the severity of the accident, road conditions (if applicable), and the number of vehicles in the affected areas
* Look for temporal relationships – do accident severity and traffic volume increase during specific times of the year, days, or special events?

**Features:**

* D3.js visualization:
  + Several interactive maps showing accident crash locations, severity, traffic volume (heat map or flow map), and potentially, road condition description (if a suitable dataset can be found that).
  + Temporal perspective comparing long-term accidents and traffic.
* Tableau or Power BI Graphics:
  + Systems that compare the severity of an accident to the number of vehicles at different locations, times of day, or when special events occur
* Source Information:
  + Basic: Car Accident Database (Kaggle) .
  + Supplement 1: Traffic volume/population dataset (available from Kaggle) .
  + Supplement 2: Path structure/condition dataset.

**References:**

* Nextmillionaire. Traffic accident dataset. Kaggale is the character. <https://www.kaggle.com/datasets/nextmillionaire/car-accident-datasets>
* Smith, J. (2022). Impact of road surface degradation on traffic accidents: Transportation Engineering Journal, 148 (5).
* Department of Transportation. (2023) is the. Annual report on road condition and maintenance.