**ABSTRACT**

Technology significantly evolves over the time in a way that almost everyone relies on GPS-based navigation systems in their daily commute to navigate from one place to another. In order to select the best possible way for a user to get from location A to B, some decision factors include the ETA (Estimated Time Arrival) and/or the shortest distance needed to get to the destination. However, other factors such as the distribution of “accidents previously occurred along a route” are not incorporated. This study integrates navigation systems to visually display a real-time risk level of accidents that occurred, including the type of accident frequently involved on the selected road to keep the drivers notified and attentively pay attention to the road laws in order to safely get to their destinations.

In detail, we develop a web-based navigation system using Google Maps Platform along with data on Motor Vehicle Collision Reports for New York capable of displaying this information. The system has two main functions: a data visualization of previous collisions based on their location and a display of collision along the selected road of the map. On top of that, the system counts each collision to make a report notifying about their frequency on each street. We develop this powerful information system based on the advanced web development tools.

**OBJECTIVE**

- Design a web-based navigation system
- Represent a data visualization of previous collisions occurred in NY
- Integrate collision data into route selection

**METHODS AND MATERIALS**

- The data used is NY transportation collision summarizing crashes that occurred between 2010 to 2020 saved in a CSV format.
- We convert this file into a MySQL database using PYTHON.
- We also integrate Google Maps JavaScript APIs.

**RESULTS**

**CONCLUSION**

- The integration of recent collisions into the road planning is a plus for drivers since safety is our primary goal in this study.
- Drivers can now be notified about the frequency of collisions that occur on each street of their selected road.
- A count summary of collisions occurred on each street of the steps can also be displayed.

**REFERENCES**

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