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Final Report - Team 5: Speed Camera Mapping Service

Link to where the app is running

<https://intense-basin-08466.herokuapp.com/index.html#>

Information Problem

We are attempting to address and bring attention to the negative effects of speed traps in Prince George's County through creating a mapping application. This will provide the locations as well as posted and enforced speed limits at each camera. Our information problem evolved from our initial problem of simply increasing awareness of speed cameras because we realized that there were already applications in place to address this problem such as Google Maps and Waze.

Stakeholders and Target Browsers

Our primary stakeholders are drivers in Prince George's County. We further divided our stakeholders into subgroups including University of Maryland students, daily drivers, commercial drivers, and rideshare/taxi drivers. The specific subgroups attempt to address those that are most widely affected by hidden speed cameras in the county.

Data our Team Worked with

<https://data.princegeorgescountymd.gov/Community/Speed-Cameras/mnkf-cu5c>

Strategies and Solutions for the Problem

Our biggest problem was finding a way to display the data that we found. We wanted to have a system that was easy to navigate and simple enough while also providing all necessary information. The solution that we decided on was a map with the locations of each camera pinned onto the map. Users can choose the district that they are in or driving through, and pins would appear on the map. When hovered over, the pin will display both the posted speed and the enforced speed. To maintain the simplicity of our system, we only included three pages, the home page with the map, an about page that included background information on speed cameras in Prince George's County, and a documentation page with a user manual.

Technical system decision rationale

Our group utilized multiple different programs for this project. On the front end, we worked with HTML, CSS, and JavaScript. These were used to improve the overall user experience and design through formatting, styling, and creating interactive elements within our system. On the backend, we used Leaflet, Node.js, and Heroku. Leaflet allowed interactions between Google Maps and the API, which was needed for the mapping function of our project. Node.js was utilized to accommodate for the use of our system on different devices other than just computers (for example, on phones). Lastly, Heroku offered a multitude of backend services for our system that made creating our project within a limited time frame more feasible.

How our Final System Addresses the Problem

While our system does provide similar solutions to existing systems such as Google Maps and Waze, we attempt to further inform our users of the purpose of our specific project. In particular through our about page, we provide background information on speed cameras in Prince George's County as well as past and ongoing legislation regarding the continued implementation of cameras in the county. By keeping users up to date with what is happening in the area, we are able to keep users informed of both the benefits and dangers that speed cameras can pose to drivers.

Challenges faced and impact on final design

During the creation of our project, there were many difficulties that we faced in both the technical aspect and overall time management. On the more technical side, one of the main problems was that the HTML and CSS code got messy and nearly unreadable at some points in the project. Because of all of the adjustments we had to continue to make to the code, it often became convoluted and difficult to follow. Regarding UX design, the page structure did not flow well, which prompted us to make multiple design changes. Since many of us were using GitHub for the first time, we encountered many issues with using and collaborating on GitHub.

Possible future work directions with this problem

For the future, there are a few things that we would like to continue to improve and adjust that we were not able to achieve during the limited time that we were given. First, we would reevaluate whether our system is positively contributing towards solving the speed camera information problem. At this moment, our effect on the information problem is unclear. We understand that what we are trying to achieve through our project has existing solutions, and if Google Maps and Waze prove to be far superior, then our group might decide to abandon the system. However, if we were to decide to pursue the system further, we would likely spend more time perfecting the layouts and usability/accessibility across all devices. For example, we would like to strengthen the UX design of our system to make it more user friendly and visually appealing.