Final Project Proposal

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**Historical County Flood Impact in Iowa**

**ABOUT THE PROJECT**

This project will show how floods have impacted each county in Iowa from 1996 to 2016.

**DESCRIPTION**

98% of U.S. counties impacted by a flooding event. This project is made to show people the historical flood impact in each county in Iowa using data visualization technology. The website contains a map and a chart to display all the data. A map with different colors for each county shows the level of the frequency of flood impact. Users can select the county that they live at to see the floods frequency. Once the users move the mouse over a county, the map will show the total number of flooding event happened in that county in the last 10 years.

Below the map is a line chart that display the number of floods in each year. Once a user moves the mouse over a county in the map, the chart will change to show the specific historical flood impact in that county.

**DATA SOURCE**

All data used in this project comes from fema.gov ([*https://www.fema.gov/media-library/assets/documents/130222*)](https://www.fema.gov/media-library/assets/documents/130222))

Since the data contains most county in America, it is too large to load in JS Bin. Thus I will only use the data for Iowa.

**TECHNOLOGY**

Bootstrap --- Front-end framework for faster and easier web development

GeoJSON --- Format for encoding a variety of geographic data structures

Leaflet --- JavaScript library for mobile-friendly interactive maps

Highcharts --- Interactive JavaScript charts for web pages.

**CHALLENGES**

First of all, I am not in computer related major. I have no previous experience about website developing before taking this class. The first challenge I met is the layout of the web page. I spent a long time to find out an easy way to create a clear web page which is using Bootstrap template. But I still have to understand the code in order to add map and chart to my website.

Secondly, Leaflet needs GeoJSON to generate the map with data. However, the raw data I found at fema.gov is .xlsx file. So I have to convert my .xlsx file to GeoJSON by using the online converter.

Thirdly, I want to change the color of each county based on the the frequency of flood impact. I am still trying to understand the CSS for Leaflet.

At last, I still have to learn Highcharts to display the line chart below the map.