DATA 31500 Autumn 2024

Assignment 2

Due October 31, 2024

The objective of this assignment is to get some practice with choropleth maps and cross-filtering interactions. Students will use Svelte and D3 to create a lightweight dashboard that an end user can use to explore a geospatial dataset. The dashboard will contain a set of four linked views, including a choropleth map and three additional visualizations of the student's choice. Each visualization should have an interactive selection that enables the user to crossfilter the dataset, such that all views are linked and can be used to progressively adjust the user's selection.

Students will *work alone*. Students are encouraged seed their assignment with the code from our in class demonstation.

Students should submit their code as zip file on Gradescope. The README of the code should contain a link to a live deployment of the dashboard on the internet via Netlify or similar.

Technical Specification

First, **students must choose a dataset** to analyze. This should not be a dataset we discuss in class. *This should be a dataset that is of interest to the student based on their research and/or background.* Students who do not wish to choose their own original dataset may enjoy working with this data on `illegal pets in New York City`. Regardless of data source, students will need to download a geojson file from the internet to get the coordinates for the outlines of geospatial areas (e.g., zip codes, states, countries), which will be needed for your choropleth map.

Students will then **develop a lightweight dashboard using Svelte and D3**. Student's should create a prototype that meets the following design requirements.

- Must include one choropleth map. The color scheme should be chosen appropriately based on the data type of the visualized variable.
- Must include three other visualizations of the student's choice. Keeping things simple is fine, but these visualizations should show different variables.
- Each visualization must incorporate an interactive selection (e.g., pointer, brush).
- Interactive selections must crossfilter the dataset across all views in the dashboard.

Try to work incrementally and debug frequently so that errors do not pile up on you. Students are encouraged to write modular code by separating charts into reusable components.

The simplest approach to this assignment is to extend the demonstration from class for a new dataset by adding an additional histogram and making the choropleth map interactive, how-

ever, students who want to challenge themselves to become more adept at web development are encouraged to implement at least one chart component from scratch.

Finally, students will **deploy and submit their web application**. Here's how you deploy a Svelte application using `Netlify` or `Surge`, which are the options we recommend. This should produce a working url, which should be included in your README file. Then, the codebase including the README file should be compressed into a zip file and uploaded on Gradescope.