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Geography 778: Project Idea

Project Description – Working at the Wisconsin Elections Commission, our job is to help manage election systems in the state of Wisconsin to benefit both members of the public looking to register and vote, but also to help the 1,850 election clerks around the state run elections and manage elections data.

Our voter registration system utilizes mapping tools to visualize two essential parts of the election process that ensures voters are provided with the correct ballots: address points, which voter records are tied to when a voter registers, and voting districts, which help to determine the unique ballot style a voter would receive for a given election if their address falls within that voting district. Address data is continuously updated to be prepared for each election and district data is updated as needed. Both state and clerk staff help to maintain this data within the voter registration system.

However, the current mapping API where these two datasets are displayed in our voter registration system are over 10 years old, relying on outdated Google Maps plugins to display data and originally designed by IT staff with limited GIS / map design knowledge. My goal for this project is to update that interactive map interface to provide better visualization of the data, better user experience and more functionality for both Commission staff and clerk users to be able to view and interact with district data. Especially because of the recent changes during the redistricting cycle, it is essential to be able to display this information in a clear and concise way.

Data – As mentioned above, the two main data types in our system are addresses and districts. Given the amount of time for this project and the sheer number of addresses in our system (over 2.5 million), I'm going to focus on the display of the district data. There are over 20 different district types in our system, though not all district types are found in all municipalities. Most of these districts already have GIS data created as part of our maintenence needs, but there are a few (like judical districts) that will need to be created from legal descriptions. The goal will be to display these districts and allow clerks and staff to interact with those datasets and visualize those areas.

Final Product Display – The final product of this project will be an interactive web map that clerks and staff can use within our voter registration system. Ideally, this will be able to be embedded within the Microsoft CRM system that we use for our voter registration system, but it could also be a standalone map depending on resource or technical limitations.

Conceptual Knowledge and Technical Skills – Nearly all of the classes as part of the program can be of at least some help in this project. From Geog. 572, the concepts of visual hierarchy, visual form and using visual variables will be very useful, as will the use of contrast and grouping of variables, given the number of district types I will be dealing with. Geog. 574 taught about using database models like an E-R model, which will help to organize the layers, as well as writing effective queries and creating spatial databases.

Geog. 575 taught the use of Javascript skills, which is the primary programming language I'm going to use for this project. It also talked about user experience and interface design, as well as user centered design - very important given the number of users in our system that will be viewing this map. From Geog. 576, the interaction of servers with the client-side will be very important when linking to data. Finally, Geog. 777 taught me how to effectively put a project together from beginning to end and how to create a feature rich interactive map, which is my goal here as well.