Politivis : Impact of Redistricting in 21st century America

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Background and Motivation

The motivation behind this project is linked to a desire to understand the implications of redistricting, the process of redrawing United States electoral boundaries. The process occurs every 10 years after the U.S census is completed. More often than not, especially in the southern regions of the U.S, redistricting has become more and more susceptible to unfair partisan gerrymandering. When redistricting is being decided, states require that their own redistricting committees comply with the federal Voting Rights Act. However, the impact of redistricting over the years is not entirely transparent to many Americans. A solid link between redistricting and the movement of socioeconomic transformations within the newly created districts has not been fully established, despite readily available civic data. We aim to combine available data into a presentable form that will allow users to view redistricting in the U.S on a larger scale (and over time).

Project Objectives

As mentioned previously, we are trying to understand redistricting on a larger scale. The visualization will deviate from typical representations of redistricting. Most just focus on a specific state, or even district. We want to allow the user to still have those component views while being able to see the larger picture. Redistricting is something that is mentioned frequently in the media, but does not garner a lot of visibility by the typical user. We want to ensure that we answer questions that we had as well as answer the questions of those with less familiarity:

- What is redistricting?
- Does redistricting target specific areas the most?
- What are abovementioned areas' demographics?
- Is there a link between redistricting and education?
- What about redistricting and the distribution of age?
- What about redistricting and race?
- What about redistricting and its relation to unemployment?
- How does migration fit into all of this? Are certain districts more prone to unpredictable migration due to changing of districts?
- What about political affiliation?

The benefits of answering these questions through a visualization include, but are not limited to:

- Greater understanding of a topic that has a tremendous impact on voting, especially in states that do not particularly lean towards a certain party

- Allows any user who is interested in the visualization of data to understand a comprehensive and often unknown topic (learn what redistricting is in a comprehensive, but intuitive manner)
- Notice any of the abovementioned patterns and see if redistricting is unintentionally restricting one's ability to vote.
- Gain a broader comprehension of domestic migration in the U.S over a decade (between the 2000 and 2010 census)

Data

Our main source of data is derived from the U.S census which will provide the latest redistricting information (since redistricting occurs at the same time as the census). When user is zooming in on the map (see main features), we will display the new district information using the google civic API which provides information on different representatives (fields include party affiliation, etc.)

Data Processing

Since census data structure about the redistricting is a topoJSON file for U.S. congressional districts, we have to convert it into an usable data structure.
This website tells us how to convert the data into usable data.
http://stackoverflow.com/questions/14565963/topojson-for-congressional-districts
http://www2.census.gov/geo/maps/cong_dist/uswall/cd113/CD113_US_WallMap.pdf
We would like to convert the data into the map. We want the map like the following.
http://bl.ocks.org/mbostock/4657115

Visualisation

We will have four components to our visualisation. The first is national (Sketch1.pdf). It will depict a map of the United States with a time slider below. As the person drags across the slider, the districts will change on the map. Furthermore, there will be an option to depict migration shifts based on demographic factors, much like that of Mike Bostock's here.
The second component is state (Sketch2.pdf). If you click on a state on the national map, it will zoom into it. The state level will provide a clearer depiction of what is happening in the districts and how people are migrating over time (a slider will also be displayed here). In addition, hovering over a district in this view will allow the user to see more information. This information includes demographics and elected officials of the district. Our third component (Sketch3.pdf) is the district which you can access by clicking on it in the state view. Here, we will be implementing force layout to illustrate how neighborhoods have been pushing away from each other based on demographics and see if there is any relation to how the district has been sliced. An example of using force layout as such is here. The fourth component (Sketch4.pdf) illustrates information on district demographics using bar graphs.

Must-Have Features

Our main feature is depicting redistricting on the US national map, showing how it has changed from 2000 to 2010. We also want to implement the second view (the state) showing the districts. Another must-have feature is using the Google Civic API to display elected officials upon hovering on a district in the second view.

Optional Features
Other features we would like to implement are ones concerning demographics (how people have shifted, bar graphs, force layout, etc).

Project Schedule
We plan to adhere to the following timeline:
Tentative to change:
April 4-7: Solidify individual roles, begin process book
April 7-10: Clean up and extract data from source, create hierarchal structure for our visualization site
April 10-14: Implement map of the US that displays one of the above listed demographics
April 15-17: Implement at least two more demographics with respect to the US map, and clean up code for Milestone 1
Milestone 1
April 20-26: Meet TF and Get Feedback
April 17-24: Finish all demographics, make sure hovering is complete
April 24-26: Test current visualization to ensure it is robust
April 26-30: Begin adding additional features
May 1- May 5: Test for bugs and finalize process book
May 5: Project due

**We would like to request Kevin Sun as our TF guide, please.