The U.S. Election throughout History
- Final Project Interactive Data Visualization

11. 01. 2016

Proposal

Basic Info

The project title, your names, e-mail addresses, GitHub ids, a link to the project repository (I encourage you to make it a public repo).

- Project title: the U.S. election throughout history.
- Team members:
    - Duanduan Liu: dliu3@wpi.edu, supermouseduan.
    - Kanrong Yu: kyu3@wpi.edu, uniquegino.
    - Weina Chen: wchen3@wpi.edu, viennachen.
- Git repo: https://viennachen.github.io/WPI_DV_Final_Project/

Background and Motivation

As the 2016 US presidential race heats up, there are so many politically motivated visualizations. But what prompts us to do this project is create an unbiased data-driven visualization, which won't mislead the interpretation from viz. Moreover, we are interested in capturing a whole idea of the evolution of US presidential election, both in general level and state-oriented level.

Project Objectives

We aim to obtain a general picture of the US election through demographic of election.

- Discover presidential shift from 1920 to 2012.
- Detect how the states stacked up in every election and how they have swung during the timeframe.
- Expose the relative relations with congress e.g. House and Senate Concurrence with Presidents, the preference of newspaper endorsements e.g. from NYT, and the trend of growth of the executive branch e.g. Federal Budget Receipts and Outlays.

Data

The main reference is from the Library of Congress, a post named "*U.S. Election Statistics: A Resource Guide*" (https://www.loc.gov/rr/program/bib/elections/statistics.html). This resource guide compiles a list of online and print resources that contain U.S. election statistics for both

federal and state elections. To be more specific, we mainly use three online resources listed in this guide:

- American Presidency Project: Presidential Election Data
  http://www.presidency.ucsb.edu/elections.php
- Clerk of the U.S. House of Representatives: Election Statistics
  http://clerk.house.gov/member_info/election.aspx
- Dave Leip's Atlas of U.S. Presidential Elections
  http://uselectionatlas.org/

Data Processing

For our project, data are quite straightforward, since most of them can be obtained directly from these data resources we mentioned in the previous section. And we expect very few data cleaning or quantitative calculation.

Visualization Design

There are two main pages in our final visualization: the first page includes presidential shifts and states shifts since 1920 to 2012; the second page focuses on the detail information of a state that is chosen in the first page.

We design 4 modules for the final visualization, please refer to the attachments sheet2-sheet5 for sketches of every module. And please refer to the attachment sheet6 for a sketch of final visualization.

Our choices of visual encodings include: map chart, line chart, bar chart, stacked-bar chart, slope chart, donut chart and etc.

Our operations in the final visualization include:

- Click:
  The timeline of every election year should be enabled to click as a filter.
- Tooltip:
  When the mouse hovers on a specific state in the map, the stacked-bar, the slope chart, or on a specific point in the line chart, or on a specific bar in the bar chart, there should pop up a relative tooltip to indicate some simple information.
- Highlight:
  When a certain election year has been chosen, a relative point and bar in the module B (line chart and bar chart) should be highlighted.
- Zoom-in:
  When one state in the map has been selected, it should immediately switch to the second page, which is module D presenting detail information of that state.

Must-Have Features

The two crucial elements of this visualization work is

1. The presidential political party of each election term.
2. The final voting result of each state of each election term.

In addition to those information, we should display the shift/ swing of them during a certain time period (e.g. 1920 - 2012), which would help the viewers better capture the whole U.S. president election history.

As a result, the must-have features include: the "Click", the "Highlight" and the "Zoom-in" operations described in previous section.

Optional Features

Optional feature include: the "Tooltip" operation described in previous section, since those tooltips only indicate corresponding information which is nice to have.

Project Schedule

- November 1 -- Project Proposals
- November 8 -- Data Preparation
- November 15 -- Must-have Design
- November 22 -- Optional Features
- November 29 -- Prototype Presentation & Feedback
- December 6 -- Improvement Based on Feedback
- December 13 -- Final Submission (with video)