Homework 3 Design Studio

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Part I - Analysis

Q. Who would be interested in using this visualization? List all usertypes that you can come up with. Prioritize the user list and pick up to three for which you design.

- **Government advisor/political think tank**
- **Online News Readers such as The New York Times and The Economist**
- **International institutions such as the United Nation and the World Bank**
- Non-profit organizations working in the international development space
- College students/high school students interested in international development

Q. What potential domain tasks could be interesting for the different user types? List them.

Government Advisor/Political Think Tank

- **Task 1**
    - **User Task**
        - Understand how the voting pattern has changed over the course of survey period
    - **Visualization Task**
        - Show a sorted bar graph showing the average number of votes for each priority in a selected time frame with highest average on the left and the lowest average on the right. Show the transition between different bars when the ranking of average changes as the selected time frame gets updated.
- **Task 2**
    - **User Task**
        - Understand how the age distribution affect the voting pattern
    - **Visualization Task**
        - Let the users select two different time periods. Using bar graphs with both positive and negative values, show the difference in the proportion of each age group in the distribution and the difference in the proportion of voting for each priority. The two graphs compared side to side would show how changes in age distribution would affect the proportion in the voting.

Online News Readers

- **Task 1**
    - User Task
        - Understand which civil issues are the most prevalent to the world
    - Visualization Task
        - Create a bar graph showing the total number of votes for each civil issue using a bar.
- **Task 2**

    - User Task
        - Understand how social media spreads and attract interest across the world
    - Visualization Task
        - Create an area chart showing the accumulate number of votes from the survey start date to the survey end date
- **Task 3**
    - User Task
        - Understand which countries are the votes coming in from.
    - Visualization Task
        - Create a bar graph showing the total number of votes coming from each country represented in the survey.

International Institutions

- **Task 1**
    - User Task
        - Understand how the voting pattern in a given time period compares to the overall average.
    - Visualization Task
        - Create a bar graph showing the number of votes for each priority in relation to its overall average in the horizontal axis.
- **Task 2**
    - User Task
        - Understand the trend for each priority depending on the time of the year.
    - Visualization Task
        - Create a stacked area chart that shows the total number of votes that each priority receives cumulatetively across the survey period.

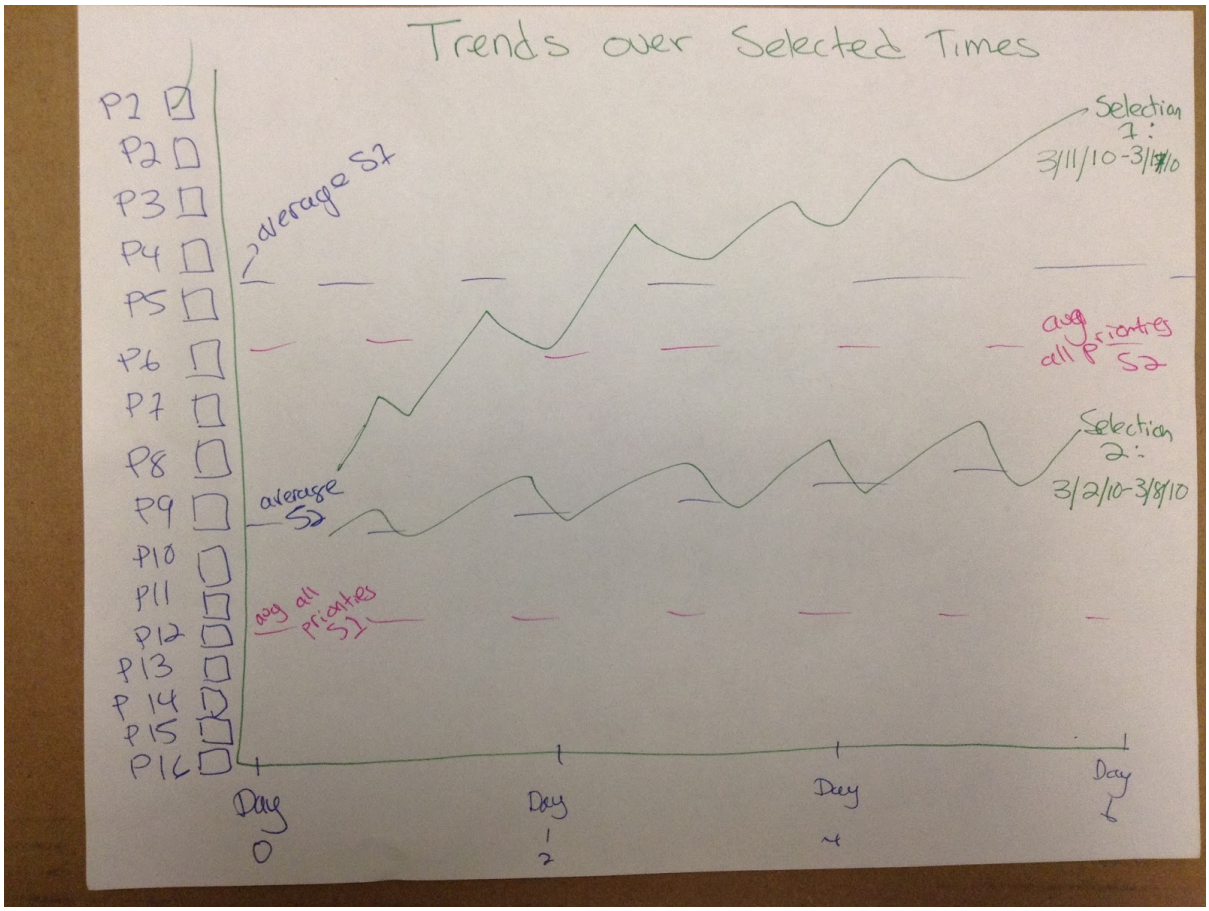
Part 2 - Sketches

Sketch #1

Title: Trends in Voting Pattern over Selected Timeframes

Description: This line chart shows the trends in voting pattern over the selected timeframe and allows for comparison between two different timeframes. It would allow toggling between priorities, and would also have horizontal lines to show relationship to the global average for that priority, and the average for each selection for that priority. It is probably the most descriptive design we came up with, but is outside the scope of what we could feasibly achieve for hw3, so we chose different designs.

Sketch:

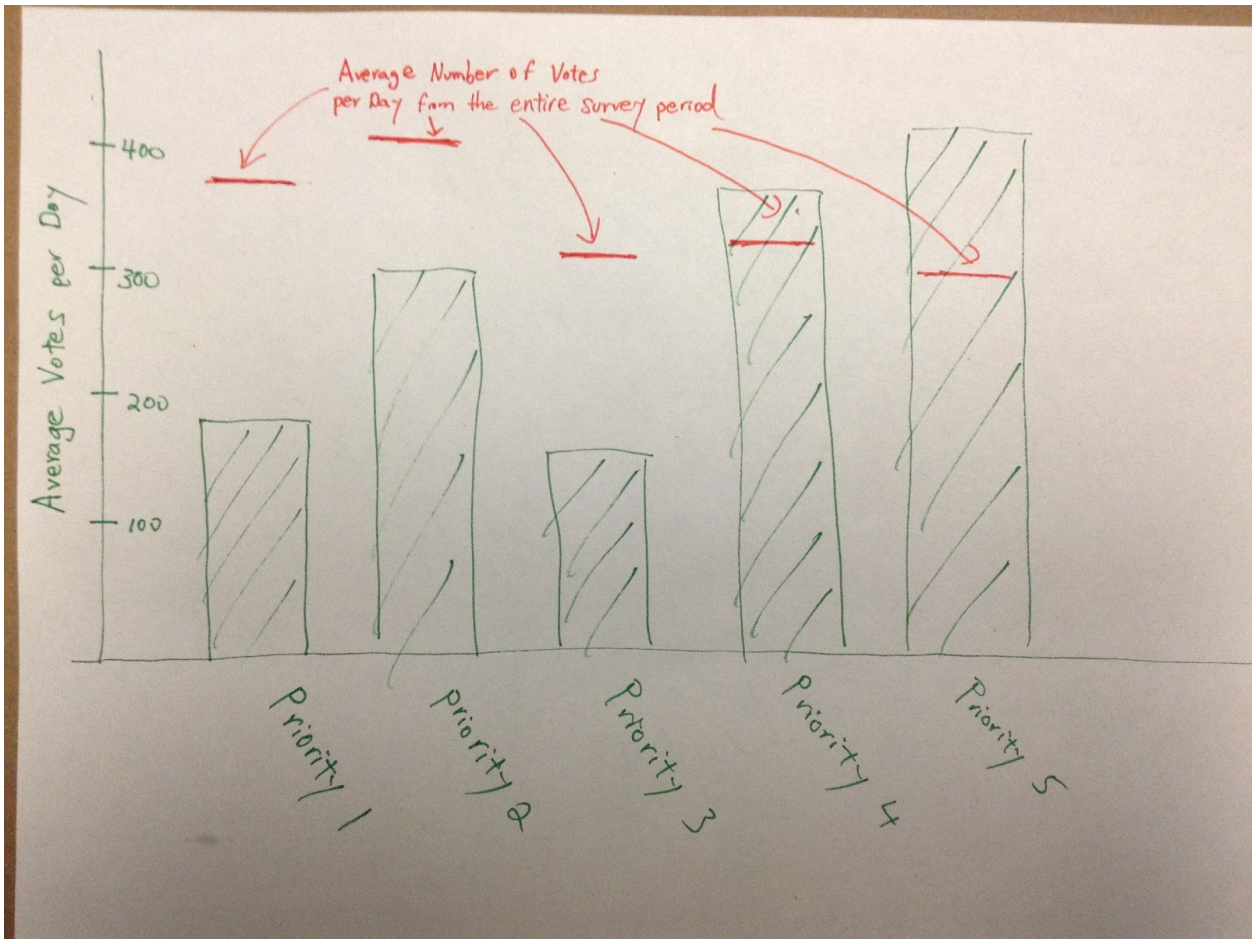


Sketch #2

Title: Comparison of local average and global average

Description: In this case, the short average is the average number of votes per day that each priority has received in the selected time period while the global average number of votes per day that each priority has received in the entire survey period. The bars in the graph represent the local average while the lines aligned with each bar represent the global average. These lines help to enable the comparison by showing whether the local average is short of the global average or has exceed it.

Sketch:

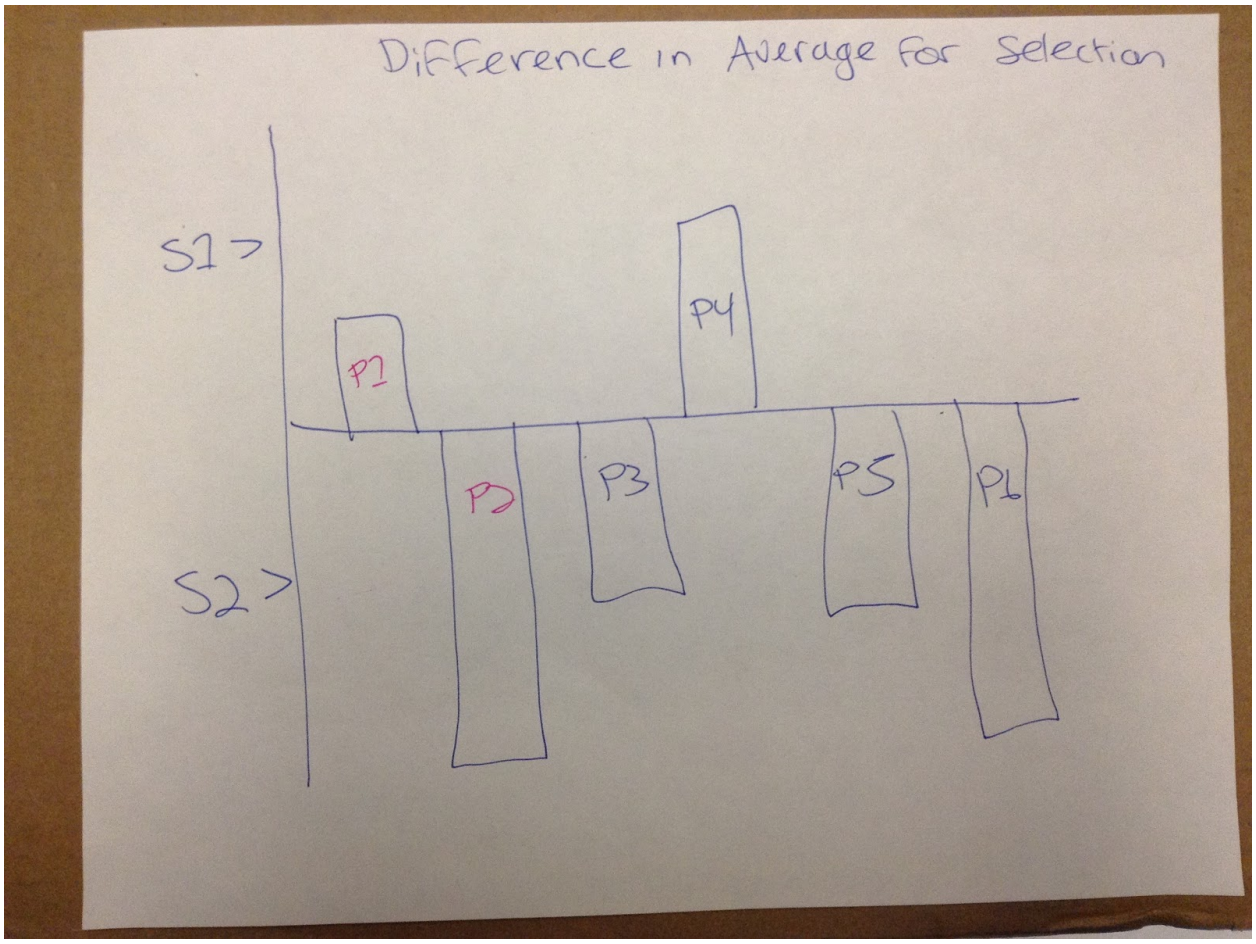


Sketch #3

Title: Difference in average for selection

Description: Similar to sketch #2, this bar graph also allows for comparison of average number of votes per day across two different time periods. The difference is that this design has more flexibility since it allows the user to pick any two different time frames. Also, the difference is shown by fixing the data from one timeframe as a reference and showing the average number of votes from another time frame in relation to the reference in both positive and negative directions.

Sketch:

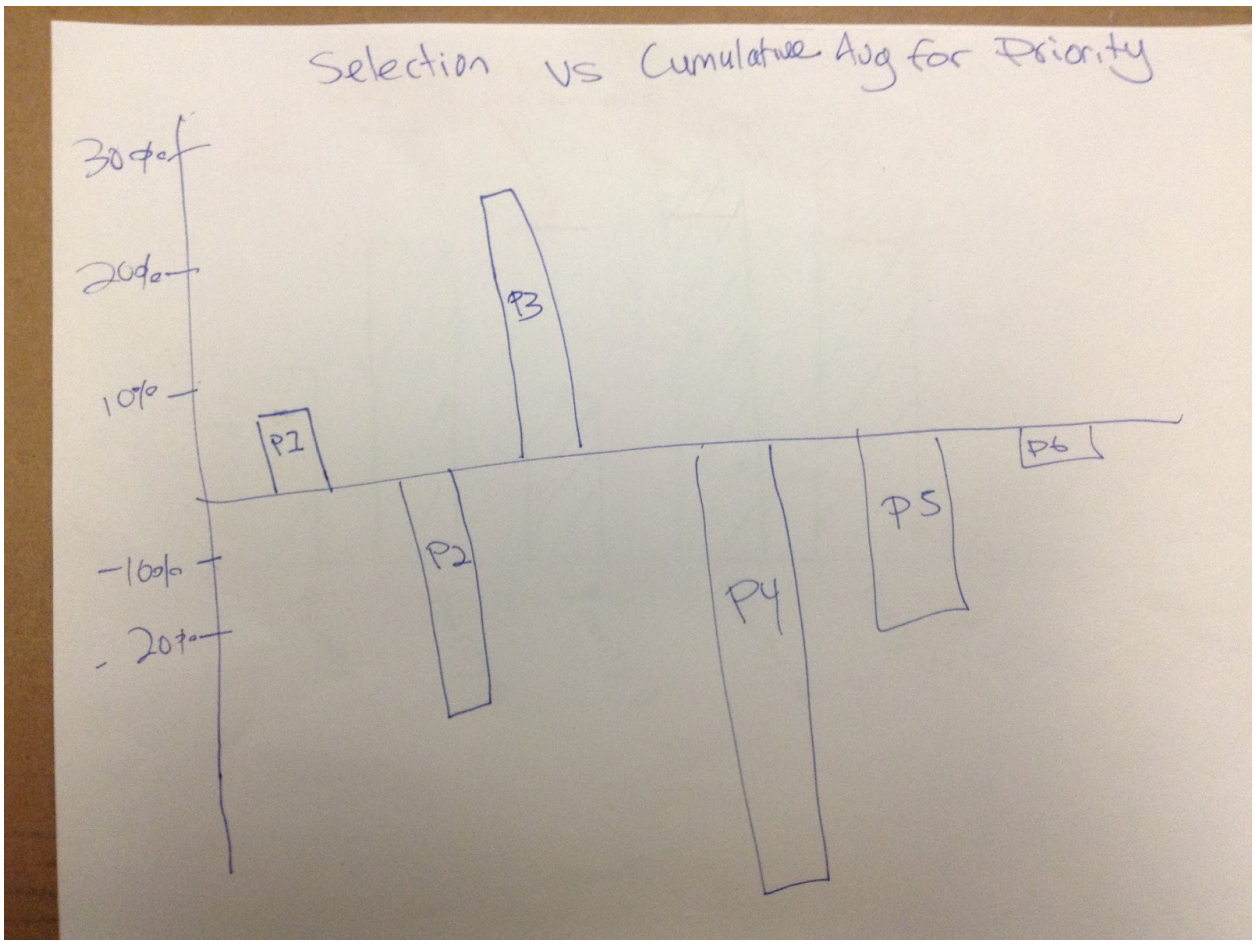


Sketch #4

Title: Trends Over Selected Time Periods

Description: This is the one Adriana selected. This design normalizes the average for a selection for each priority, and shows the percentage difference in vote count from the average for that priority that that selection produced.

Sketch:



Part 3 - Reflection

Out of 4 different designs, we came to the agreement that design shown on sketch#1 would the most interesting design to implement. This is because it allows a great flexibility for the users to compare voting pattern between any two different timeframes with any selection of priorities. However, we thought actually implementing the design on this homework would be relatively complicated since it requires creating complex filtering process in which we would have to filter the original data based on the two different timeframes and the priorities selected by the users.

Then, we discussed about the merits of designs shown on sketch#2 and #3 collectively since they both allow for the comparison of average number of voting per day across two different time periods. We concluded that design #3 allows for more flexibility for the users since it allows them to pick any two time periods while design #2 only allows the users to select one timeframe and compare the average number of voting per day from that time frame against the average number of voting per day from the entire survey period. In addition, we discussed about the aesthetic aspects of two designs. While design #3 uses both positive and negative values in the graph to show the differences, design #2 uses both bars and lines to show the differences. In this aspect, since they both accomplish the same goals, we decided that we can go with either design if we were primarily concerned about showing the differences in average number of votes.

Finally, we discussed about the design shown on sketch #4. This was a combination of ideas from both sketch #3 and sketch #4 since while we fix the comparison between the average number of votes per day from a selected timeframe and the average number of votes per day from the entire survey period, we also used both positive and negative values to show the differences.

In the end, we decided to try implementing design shown on sketch#2 since while it allowed for fixed comparison with local average and global average for simplicity, it also allowed us to explore creating a variation of stacked bar chart. Our plan consisted of creating the local average in full bars while creating global average as very narrow bars stacked inside or on top of the existing bars.