Two Visualization Designs

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1. The first visualization design is as follows:

(1) Upon brushing the year chart, a dataset is created to include all the years that has been selected;

(2) An event is triggered afterwards so that the dataset containing all the years in (1) is passed to the svg in the shiftChart;

(3) Since we have another brush for states, now, in svg, we have two coordinates, the first of which is(are) the state(s) that is chosen in electoralVoteChart.js, and the second of which is(are) the year(s).

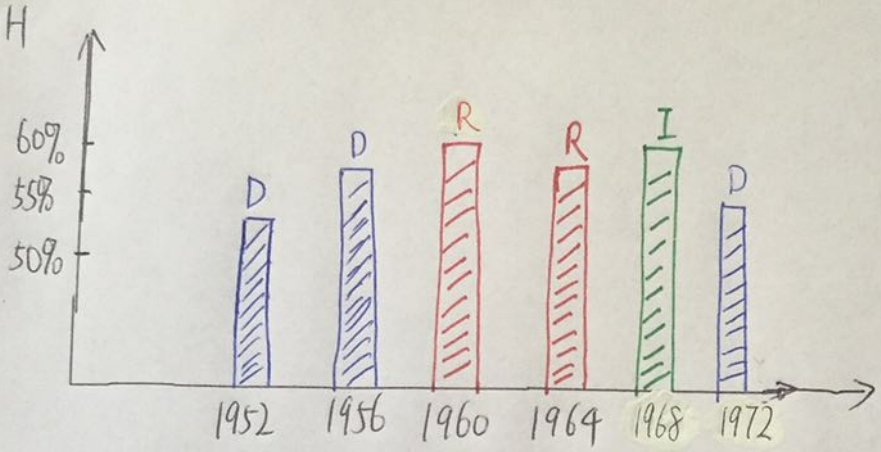
(4) We here append a bar-plot to each state name in the selection, in such a way that the plot shows the winning party over time of that state . In this plot, the x-coordinate would be years that are chosen, and y-coordinate would be the percentage of votes the winning party gets. The color of the each individual bar would be blue, if democrat wins; would be red, if republian wins; and would be green, if independent wins. We also add colored text above each bar, to indicate which party wins that year.

(5) The merit of this design is that we have two brushes to select, one for spatial variable, one for temporal variable, so that our selection is freely. Also, since each bar is colored by the winning party, the time series of the trend is very easy to see, and the letters (D,R or I) above each bar makes it more clear and confirm the colors. Also, the relative height of each bar can also show the popularity trend of the winning party if the party wins the game in a series, within the selected time period.

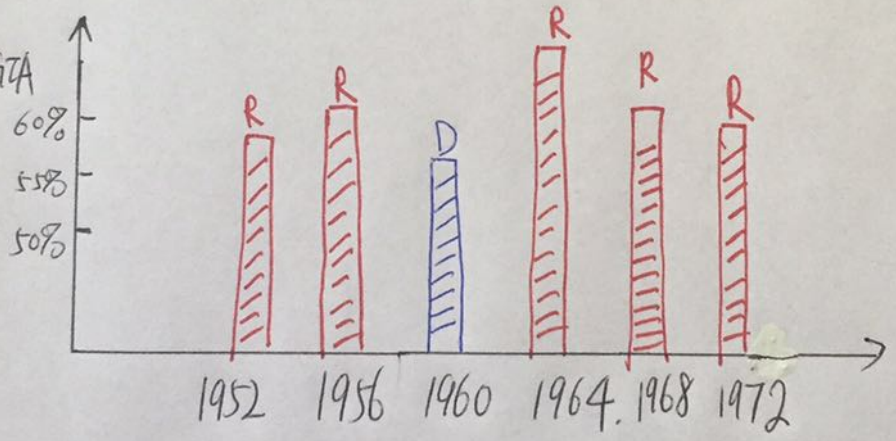
(6) An example, with the selected years being 1952, 1956, 1960, 1964, 1968 and 1972, and with selected states being Utah and Georgia is shown on the next page. This figure is assumed to be located in the brush selection svg in the original homework.

Brush selection { Years selected: 1952, 1956, 1960, 1964, 1968, 1972
states selected: UTAH, GEORGIA.

• UTAH



• GEORGIA



2. The second visualization design is as follows:

(1) Pretty much like the table in HW4, we create a table, whose first column is the set of the states selected, whose second column is the set of abbreviated strings of the winning party in the selected years, and whose next column consists of a series of pie charts, encoding the percentage of votes for each campaign in each year. (Details explained later)

(2) In the first column, we show the selected states.

(3) In the second column, we show the first letters of the winning parties in those selected years, for each state. For example, if the selected years are 1960, 1964, and 1968, and for Utah, the winning party are Democrat, Democrat, and Republican each time, then that cell contains letters 'D' 'D' 'R'. 'D' will be filled by blue, 'R' will be filled by red, and 'I' will be filled by green.

(4) In the third column, we make several pie charts, the number of which depends on how many years have been selected. For each pie chart, it will encode the percentage of each campaign voted. We place the largest percentage (which corresponds to the winning party) on the left side of the pie chart. For example, suppose in the year of 1968, Democrat wins Utah, then we place the color blue in the left, and the color red and green at the rest of the place. The stroke of the pie is also colored, depending on which party wins.

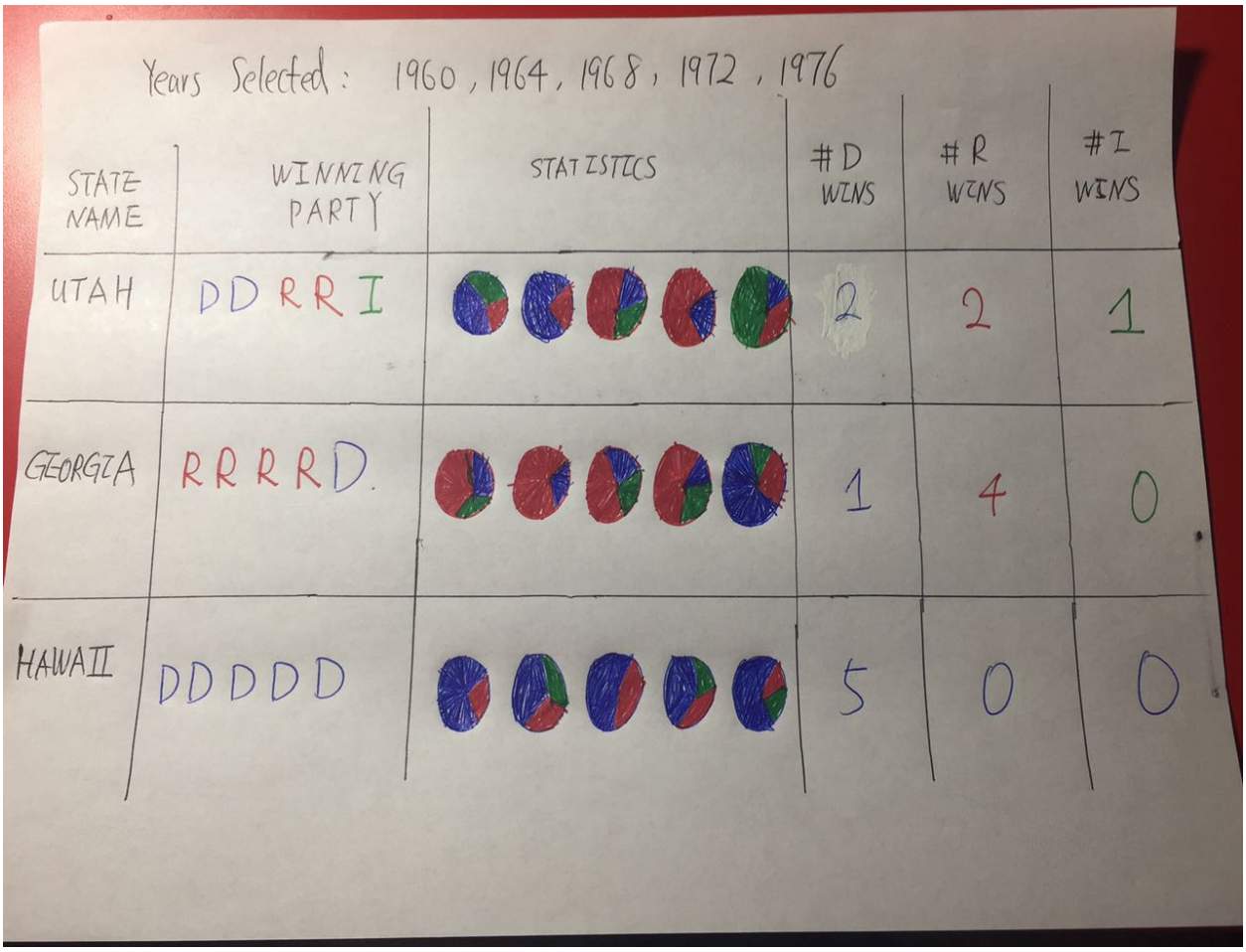
(5) In the next column, we list statistics for the total number of wins made by Democratic party. Since for each state, it will always have such an property, ranging from 0 to the total number of years selected, then we can of course sort from largest to smallest or the other way around by clicking on the table head, if such a function is implemented.

(6) For the next two columns, we do the same thing as in (5), except we count the total number of wins made by republican and independent, respectively.

(7) One other thing is that the title of the table will be: Year Selected: 1960, 1964, 1968, 1972, for example, to indicate within which period are we doing all the statistics.

(8) An example is seen on the next page. Suppose the years selected are 1960, 1964, 1968, 1972, and 1976. States are UtahGeorgia and Hawaii.

(9) The merit of this design is that the trend is clear from the time series of strings and if one needs more (detailed) information about the actual percentage of each party or how percentages evolve through time, she or he can refer to the next column. Also, the Total number of wins made by each party will also indicate the overall performance of each party in that state. To contrast among different states, we can use the sort function.


Years Selected: 1960, 1964, 1968, 1972, 1976
STATE NAME
WINNING PARTY
STATISTICS
#D WINS
#R WINS
#I WINS
UTAH
DDRRI
2
2
1
GEORGIA
RRRRD
1
4
0
HAWAII
DDDDD
5
0
0