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Assignment 3

Storyboard/Data:
For our interactive visualization, we want to explore the relationships between states and how people move from one state to another. Specifically, we want to examine which states are most popular to move to for people living in a given state. We will use Census data that enumerates the number of people living in a given state one year that moved to another state the following year. Using this data, we will determine which state the most number of Alabamians move to, which state the most number of Alaskans move to, etc. in a given year. We want to display this information in the form of a map of the United States, since we feel it will be easier to distinguish between the data for each state rather than just including a scatter plot. We want the user to be able to hover over each state and see the most popular place to move to from that particular state. So, when the user hovers over California, we plan to draw a line between California and state most Californians move to in a particular year. We also want to be able to display the opposite too; when the user hovers over California, we want to also be able to see lines between the states where California is the most popular state to move to. This way, we are able to get a better idea of which states are most popular while also looking at the patterns in state migrations. We also plan to include buttons at the side of the graph where a user can change the year that the data is referring to. That way, the user can see how the state migrations change over the years.

Final Visualization:
Our final interactive visualization displays a map of the United States and a slider to slide between different years. Suppose that the most number of people who leave California in 2013 move to Texas. And suppose that in 2013, the most number of people who leave Washington, Nevada and Oregon all move to California. Then, when someone hovers over California, a red arrow from California to Texas and blue arrows from Washington, Nevada and Oregon to California will be displayed. Additionally, text on the top of the map displays the name of the state that is currently being hovered over. Additionally, we have a Hold feature. In order to activate the Hold feature, a user must click on one of the states. Then, only the data for that particular state will be displayed and it will be displayed permanently without having to hover over that state. Hovering over any of the other states will not change the view. A user can then use the slider at the bottom of the page to change the year and watch the migrations change over the years. This makes it easier to see the differences in the year, rather than having to hover over a state, memorize the arrows, change the year, and hover again. A user can click on a different to enable the Hold feature for that state alone, essentially disabling the Hold feature for the previously clicked state. A user can disable the Hold feature altogether by unclicked the state that is currently selected, allowing the user to return to seeing the data when hovering over each of the states.
The legend at the bottom of the page displays all the data from the arrows but in text form when someone hovers or clicks on a particular state.

Differences:
One difference between the final visualization and the storyboard is that we didn't anticipate needing to implement a Hold feature. It was only once we started coding the visualization that we realized that it is hard to see the changes between years with just the hover feature alone. Additionally, we colored the two different types of arrows and changed them from lines to arrows so that it was clear which state the person is moving to. Furthermore, we implemented a slider to change the year instead of displaying buttons to make it easier for the user.

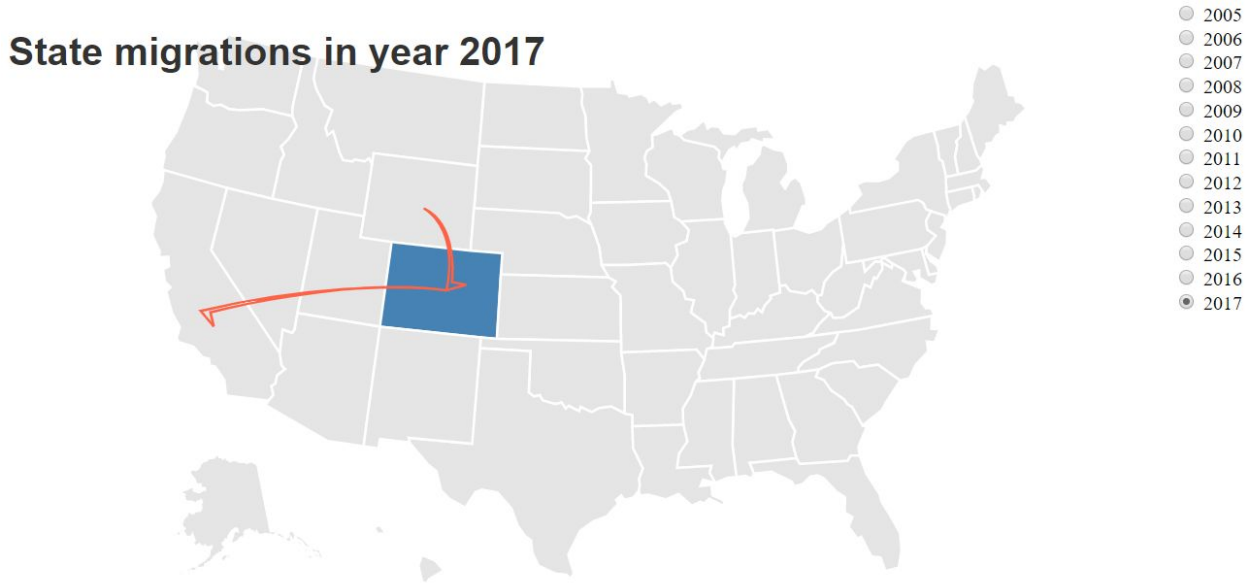

Figure 1. One of the earliest iterations of the visualization. Note the radio buttons for changing the year and that there is only one color for the arrows.

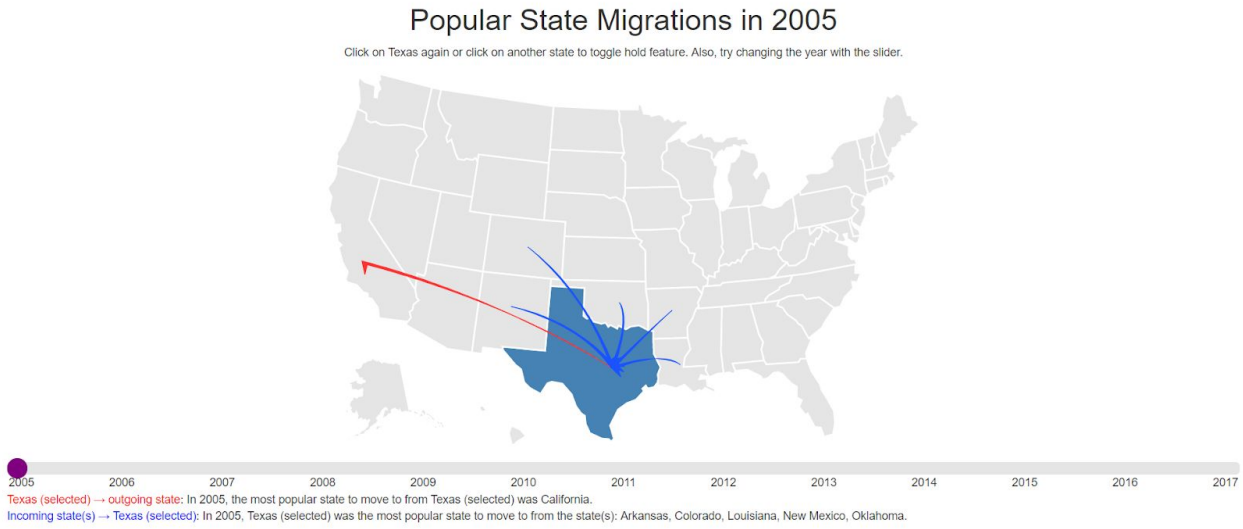

Figure 2. The latest iteration of the visualization. Note the timeline style range slider, the colored arrows, and the more descriptive blurbs.

Breakdown of the Work:
Crystal worked on preprocessing the all the state migration yearly CSV files to calculate the most popular incoming and outgoing states, importing the state data into javascript, structuring the data to be mapped, creating the responsive legend, title, and year slider, and styling the map.
Ashu worked with D3 to draw the map that included a hover feature that would read from the data in the arrays and draw the corresponding arrows. Ashu also implemented the Hold feature and the feature of displaying the name of the current state selected on the side of the map.

Time Estimate:
We probably spent about 15 hours on the assignment. The most challenging aspects of the project included: 1) getting the data into a format that D3 could understand and 2) learning D3 to implement the map feature 3) structuring the layout of the visualization to be easily comprehensible.