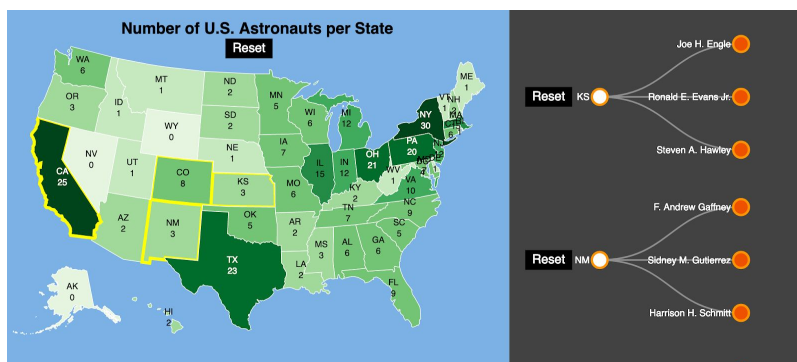


Project 1: Write-Up

U.S Map: Data and Interaction

I used a U.S. Map to show the number of U.S. astronaut because it allows me to categorize each state using their spatial region and show the quantitative difference using color saturation. I chose a green color saturation for the map to represent nature. I chose a light blue background color to represent the ocean. I decided to add a label to each state instead of using a tooltip because the tooltip would cover the some states and they overlapped each other when the user performed multi-selection. For interaction, I added multi-map selection to allow for

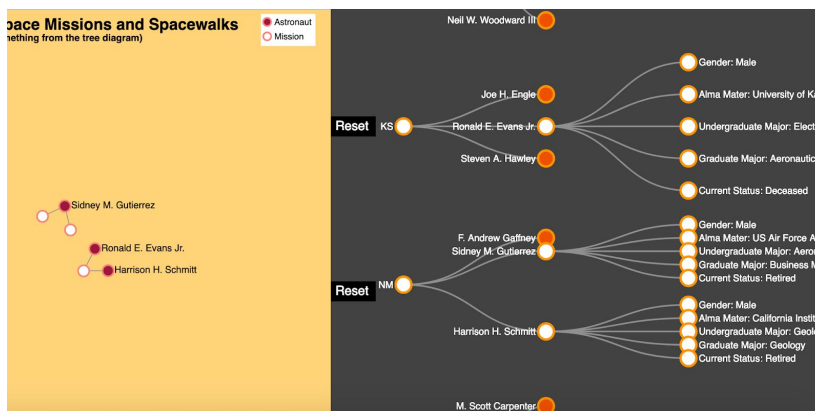


multi-granularity and multi-select filtering of the data. I also added a reset button to allow the user to unselect all the map items which will clear everything from the dendrogram and the network graph and reset the page to its initial state where the map has California highlighted and the

dendrogram showing California's astronauts shown below.

Dendrogram: Data and Interaction

I used a dendrogram to show the background information regarding each astronaut in the selected states because it allows me to show all the necessary information without using a tooltip. I used a tungsten background color because it complements the orange stroke of the nodes and its white labels. I used white fill for expanded node and dark orange fill for collapsed node to distinguish the expanded and collapsed node. I positioned the nodes vertically because it allows me to show the labels without them overlapping each other. For interaction, the astronaut's node

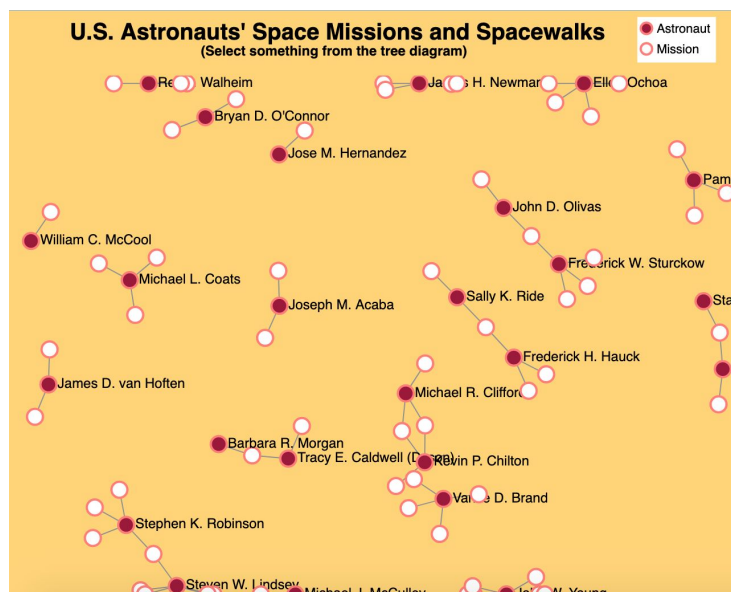


can be expanded to show their background information gender, alma mater, and college major. I added multi-node expansion even if the astronaut is in a different state to allow for multi-granularity and multi-select filtering of the data. I also added a reset button to allow the user to collapse all the

astronauts' expanded nodes and clear every astronaut from that state from the network graph. Expanding and collapsing the node will also add and remove data from the network graph. Due to space constraint, I decided to add scrolling within the dendrogram window so the user can scroll up/down and left/right to see the information.

Network Graph: Data and Interaction

I used a network graph to show the astronaut's missions and spacewalks because it allows me to connect the astronauts who went on the same mission together if the user happens to select the right names in the dendrogram. I used a slightly light yellow background color because it complements the light red stroke of the nodes and its black label and the blue background color of the U.S. map above it. I used two different nodes: mission node and astronaut node. I used a white fill for mission node and dark red fill for astronaut node to distinguish them in the network graph and I added a legend for extra clarification. Since the user can select a lot of astronauts in



the dendrogram, I chose to only show the label for the astronaut node to minimize the amount of text in the graph and I bounded the graph window (shown in the figure) so the nodes doesn't move past the viewable part of the screen. For interaction, when the user hover over the astronaut node, I used a tooltip to show the information about the number and total hours of spacewalks an astronaut did throughout their career. When the user hover over the mission node, I show the mission name that the astronaut

went on. I did not add a reset button because the user can reset through the U.S. map and the dendrogram. There's no selection possible for this visualization because the astronauts are already selected in the dendrogram, but the nodes in the graph are draggable.