Selena Tuyen

**Bike Share in San Jose**

For my overview visualization, I implemented a network of the top five most active bike stations in San Jose. I chose to use a network because it allowed me to see if there were any significant differences or strong connections between each station. Within this network, each node represents each of the top five stations, and their size is based upon the number of trips taken from that station. In addition, each line between the stations represent the number of trips taken between the stations. The color of the line is based upon the starting station. The user can interact with the system by hovering over the lines and nodes to reveal the total number of trips between the stations or taken from the station respectively. The user can also interact with each station by clicking on it to reveal the average trip duration for that station.

For my detailed view, I implemented a line graph depicting the average trip duration of each station. I chose to use a line graph because it would best depict any dramatic differences such as increases or drops in trip duration within each station. To access this detailed view, the user clicks on a station from the previous overview visualization and the line graph will appear below it. The line graph shows the average duration of each trip in minutes on the y axis and the numeric month value on the x axis. Each point on the graph represents a month. The user can interact with this visualization by hovering over each point to reveal the rounded average in minutes. In addition, the user can interact with this visualization by clicking on a point and it will reveal the average temperature during that month.

For my third visualization, I implemented a bar chart depicting the average temperature for each day of a month. I chose to use a bar chart because the size of each bar allows the user to quantify the degrees of each day. To access this visualization, the user clicks on a point on the previous line graph to select a month. The bar chart then appears below it for the selected month. The bar chart has the average temperature in Fahrenheit on the y axis and the numeric day value of the selected month on the x axis. The user can interact with each bar by hovering over it to reveal the average degree. This visualization also features interactive filtering. At the bottom of the visualization, there is a checkbox that allows the user to filter the temperatures based on the overall average temperature for the month. Upon checking this box, each bar on the chart will change its color to green if the average temperature of that day is above the overall average, and the bar will change to red if it is bellow it.

Overall, I did not find a consistent trend for a certain month that had more bike users than others. Each station peaked at different months in the year which may be due to the station’s location. I did find that there is a lot less bikers during colder temperatures.

My student evaluation experience was helpful in seeing if my system was intuitive. The student did not know to click each node so I changed the mouse pointer and node color upon hover to draw more attention to its intractability. The student evaluator also found a bug in my bar chart. The x axis day numbers were not dynamically changing upon each change in month.