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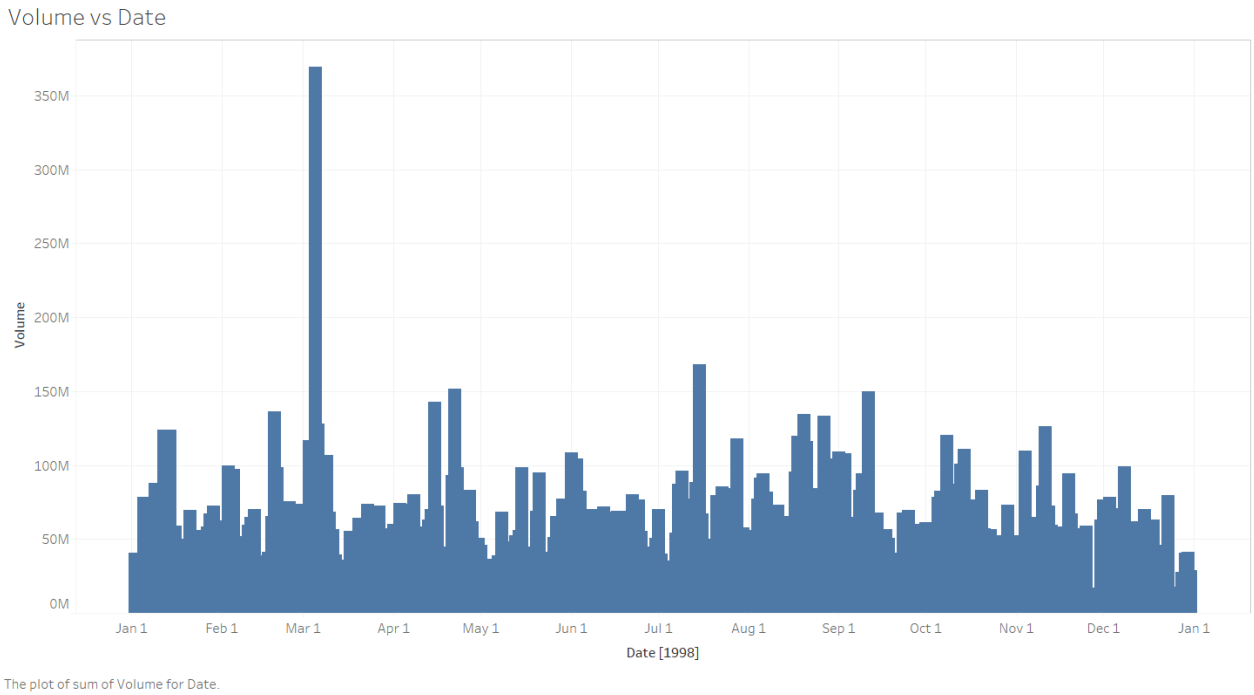
DSC 465 Data Visualization

Assignment 1

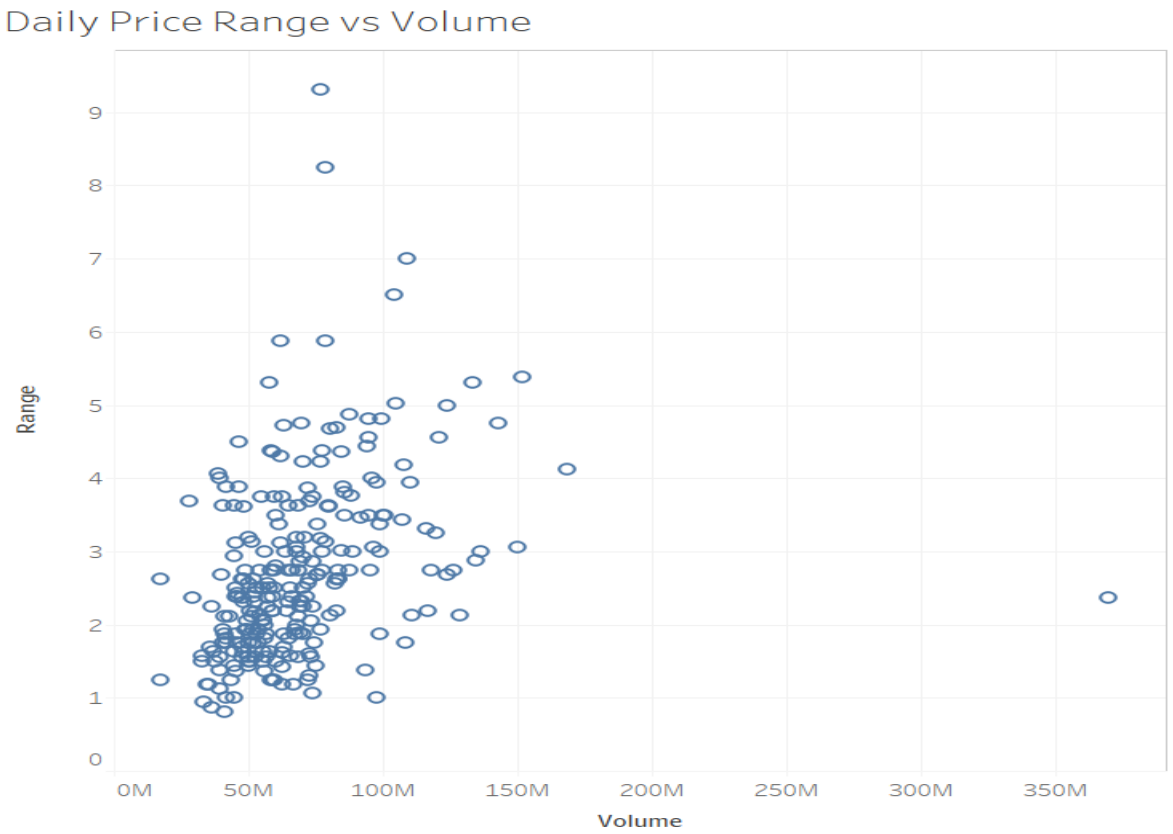
Problem 1

a.

b.



c.

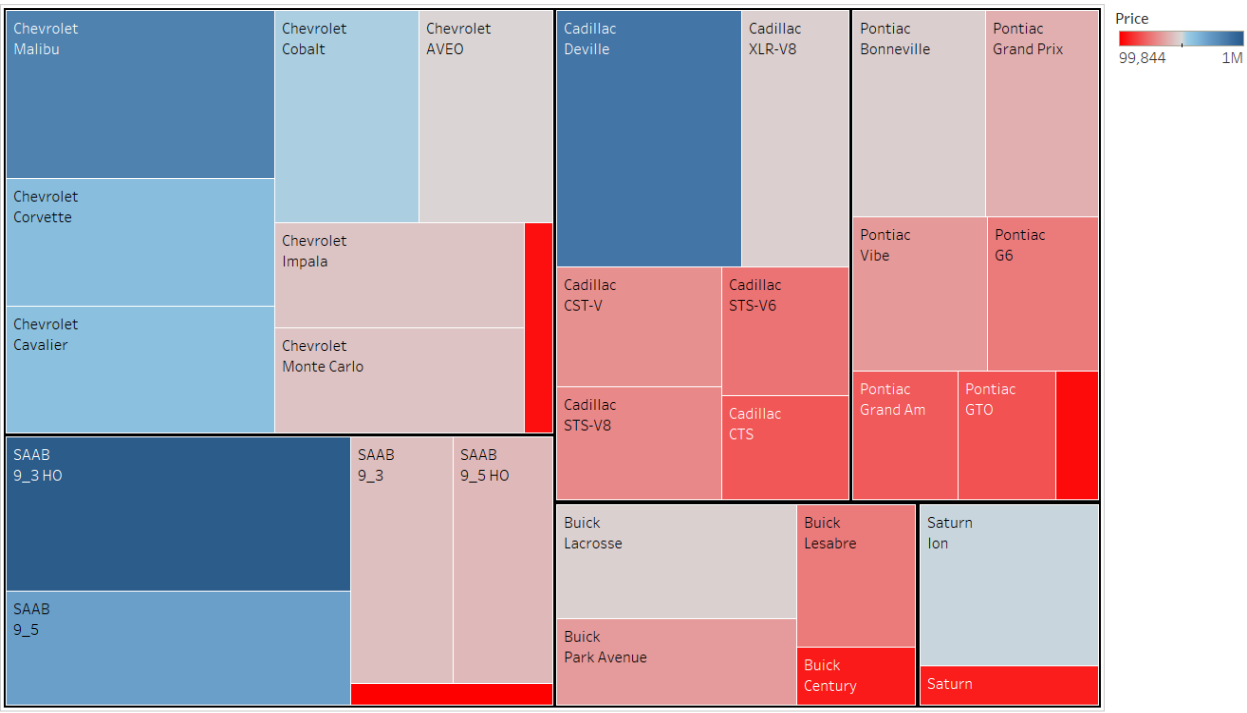


For this problem, I chose Tableau, since we do not need to preprocess, or make major calculations before applying any visualizations. In part a, line chart best describes stock price, and as we see, sum of closing price for every month. In part b, Volume over the dates, and most shares traded in March. Scatter plot in c shows the range between highest and lowest price of day lie between 50-100 M, despite the outlier above 350M.

Problem 2

a.

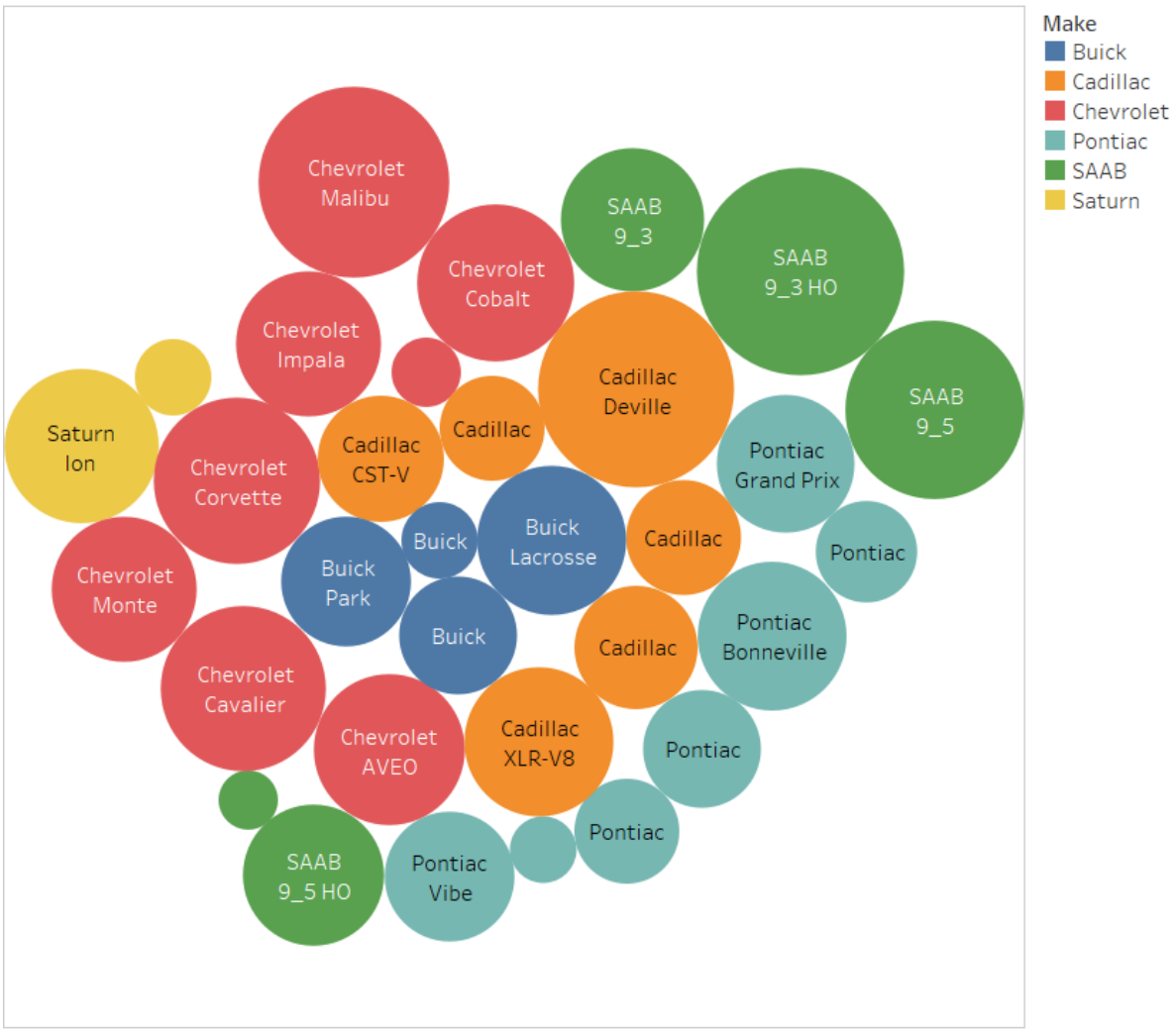
Tree Map of the model of cars and their Price



Make and Model. Color shows sum of Price. Size shows sum of Price. The marks are labeled by Make and Model.

b.

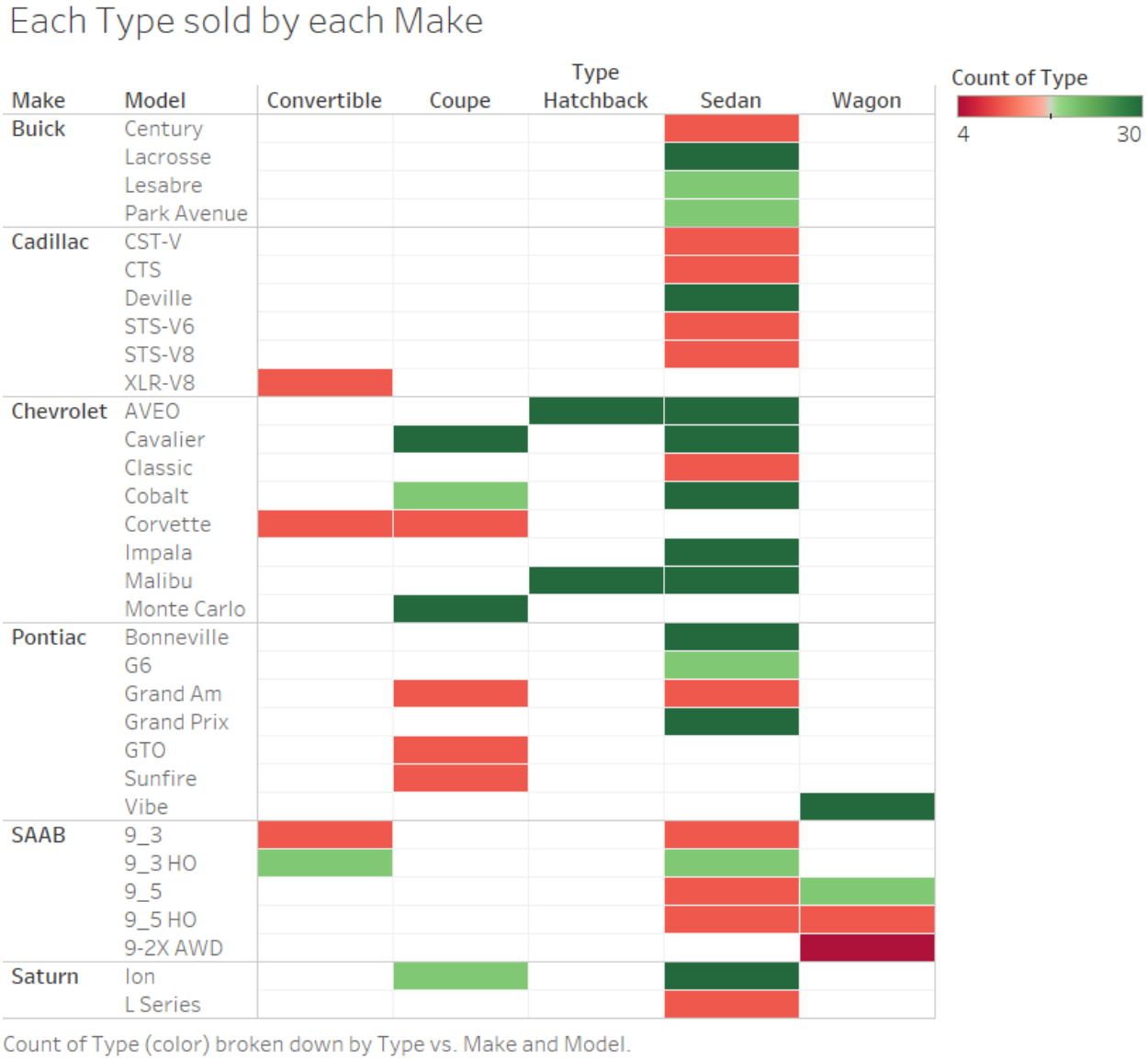
Bubble chart of the model of cars and their Price



Make and Model. Color shows details about Make. Size shows sum of Price. The marks are labeled by Make and Model.

c. The bubble chart makes visualization of the Make of the cars clearer and more understandable. Each color is different make, and price based on the size of bubbles. Audience can see how many models for each make. In the Tree map, price based on color density, and higher the price, the bluer the model. Borders that separate makes from each other are harder to see in tree map.

d.

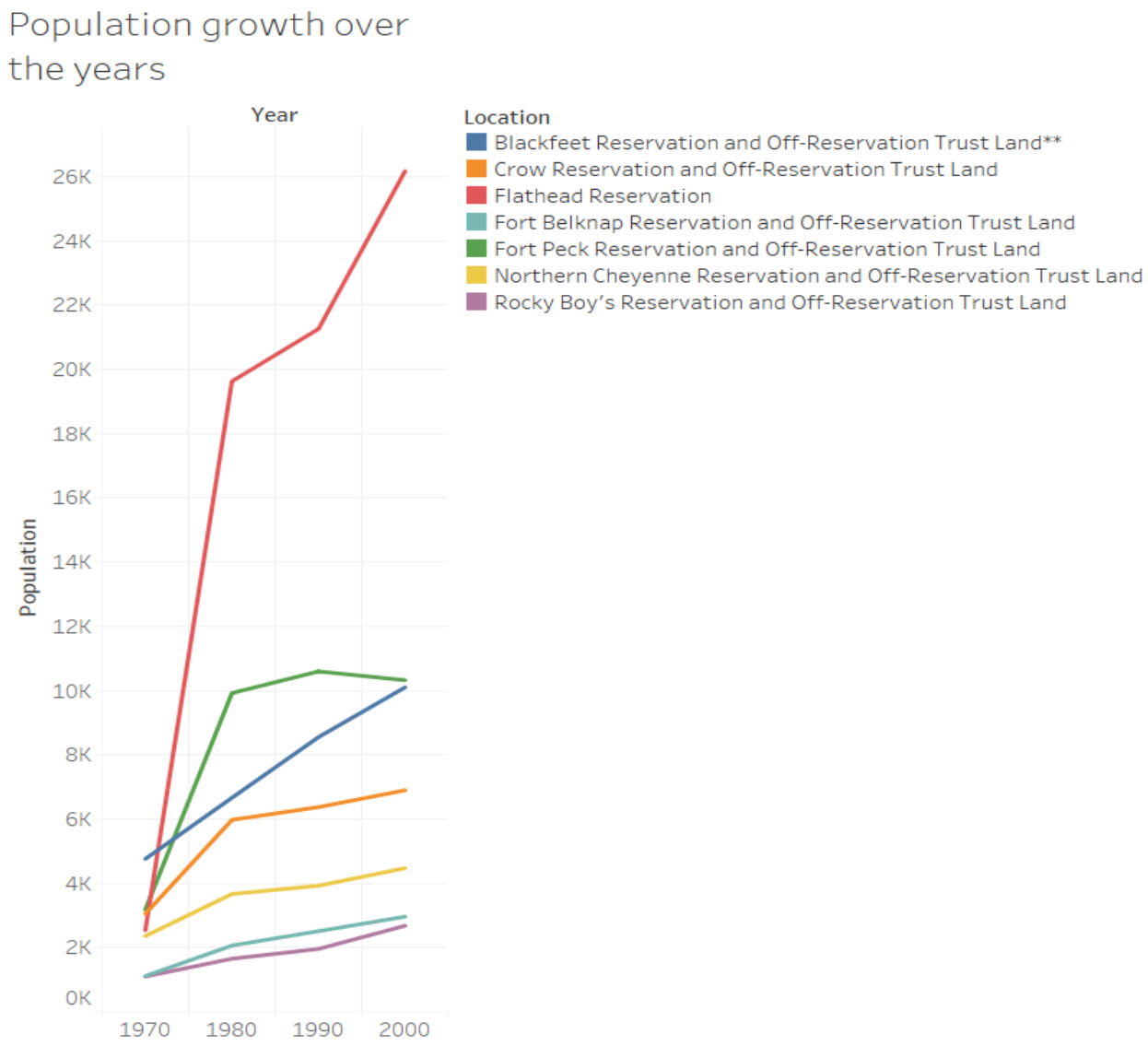


Count of Type (color) broken down by Type vs. Make and Model.

This heatmap shows the number of types sold by each make and we see the dominance of the "sedan" types over the rest. The color shows number of types sold by each model, and this graph explains well without any noise. For example, we can easily visualize that Buick focuses on sedans, whereas Chevrolet focuses on every type but wagon. If customer wants to buy wagon types, he/she can look at SAAB's.

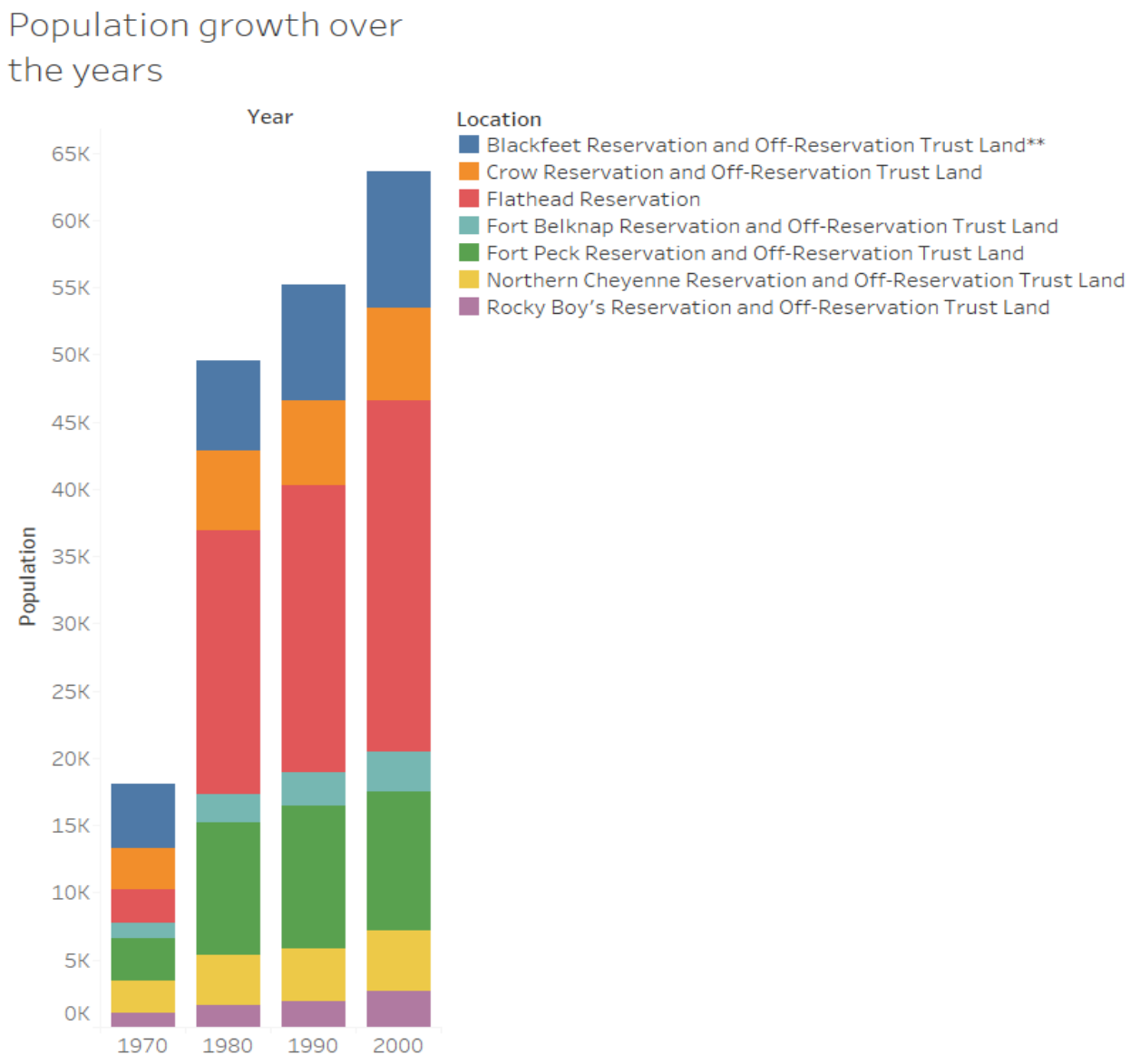
Problem 3

a.



The trend of sum of Population for Year. Color shows details about Location. The view is filtered on Location, which has multiple members selected.

b.



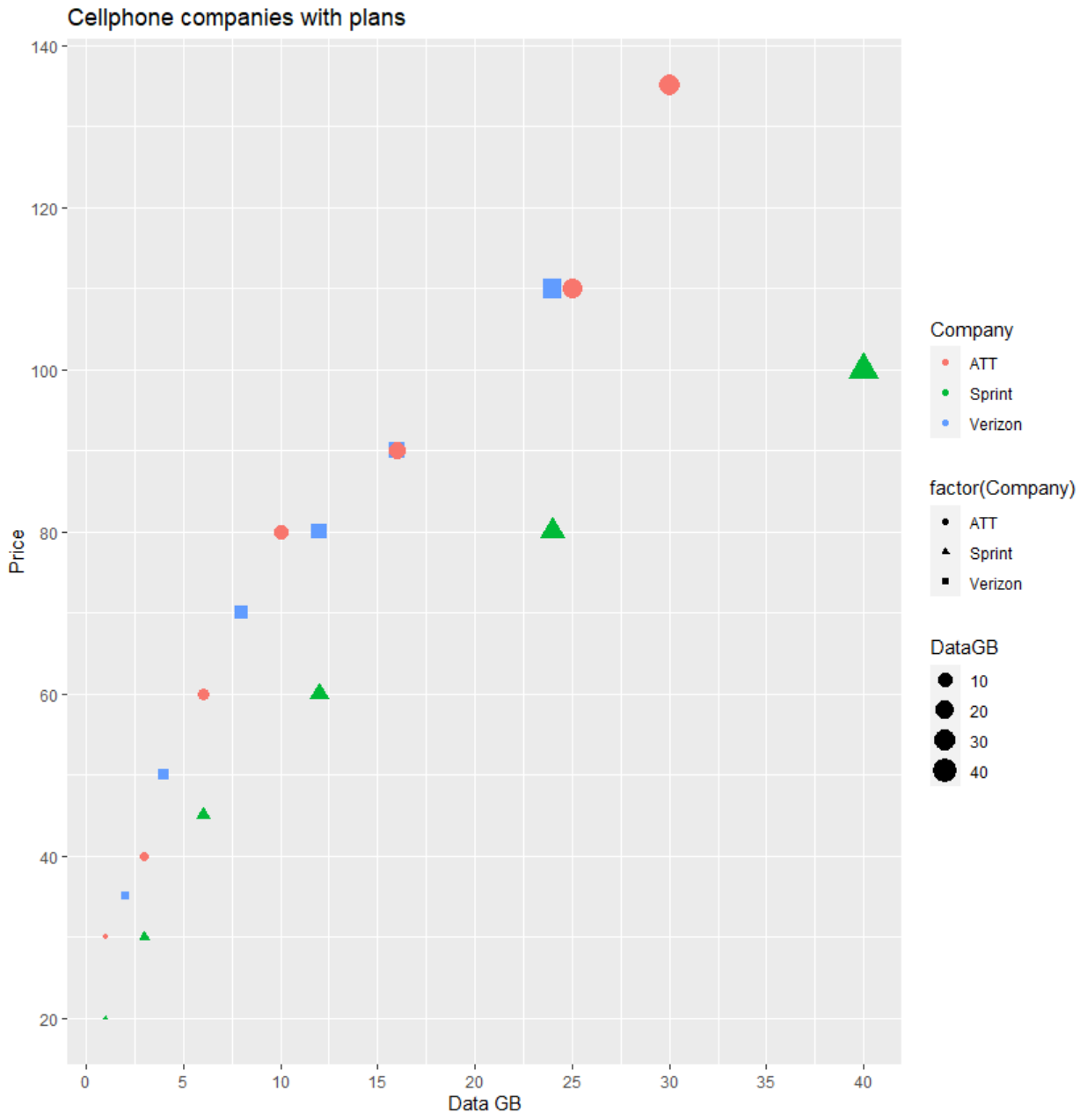
Problem 4.

a. Pre-attentive attributes enable us to direct viewer's attention towards the most important information in visual, simply saying determine what information catches our attention. Pre-attentive processes take place within 200ms after exposure to a visual stimulus and do not require any research. They are very powerful tool in term of visualization.

b. Without including 0's in the bar graphs we cannot say that one is longer or shorter than the other. Weber's Law states that it is specifically about the relative nature of our

perception, just noticeable difference between two stimuli is proportional to the magnitude of the stimuli. Weber's Law applies to the property of length, and we might expect to be able to decode length fairly well if include 0's in numerical axis.

Problem 5.



The graph above shows the price of each company and plans they have. Obviously, large plans are expensive, but if customers are interested in a bigger plan with less price they might go with sprint. ATT and Verizon are somehow connected in terms of plans and price. This graph assists customers in selecting the best plan for them to use.