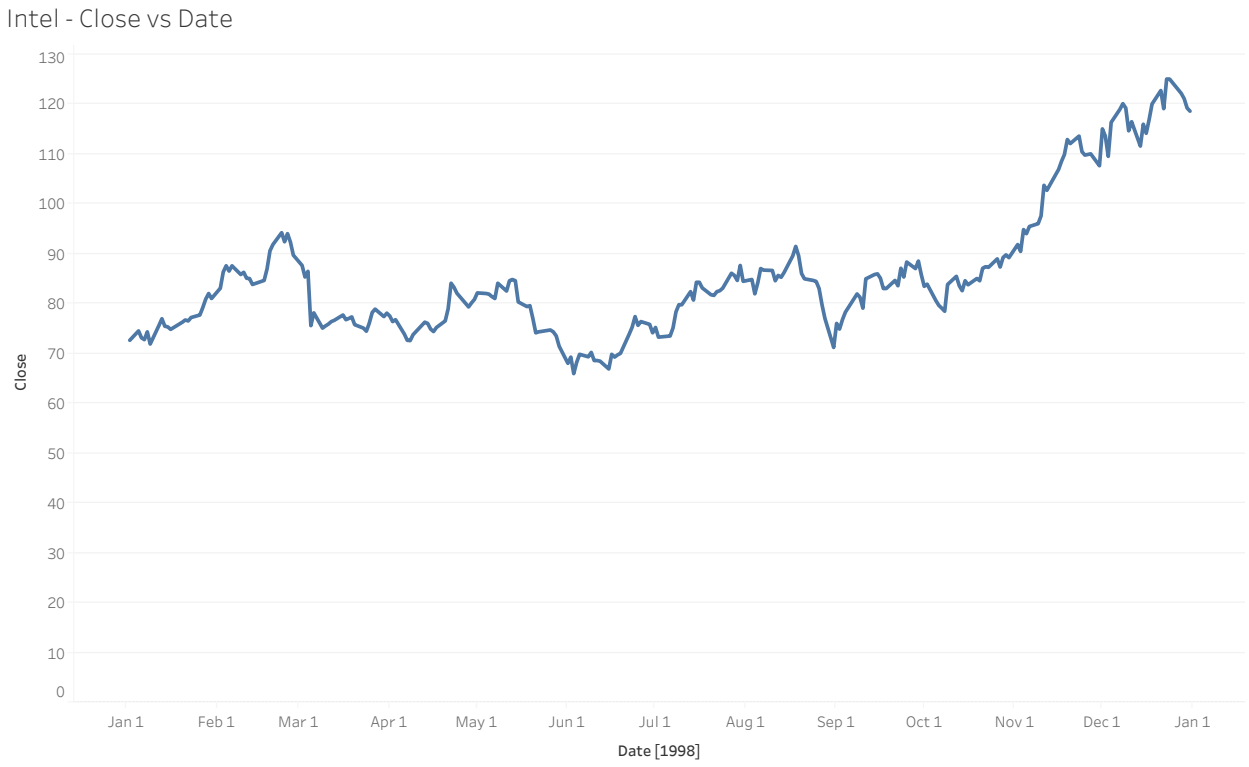
DSC 465: Data Visualization
Daniel O'Brien
Homework 1
01/17/21

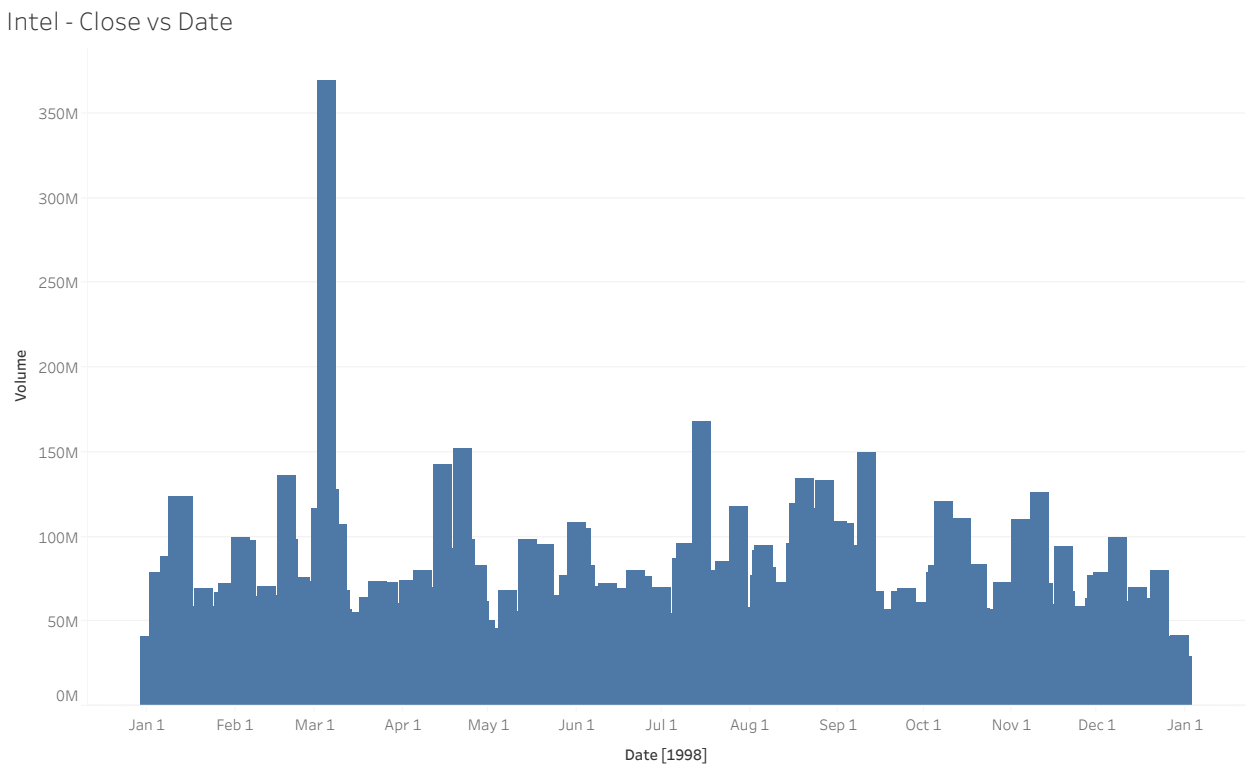
1.

a. Closing Price Vs. Date



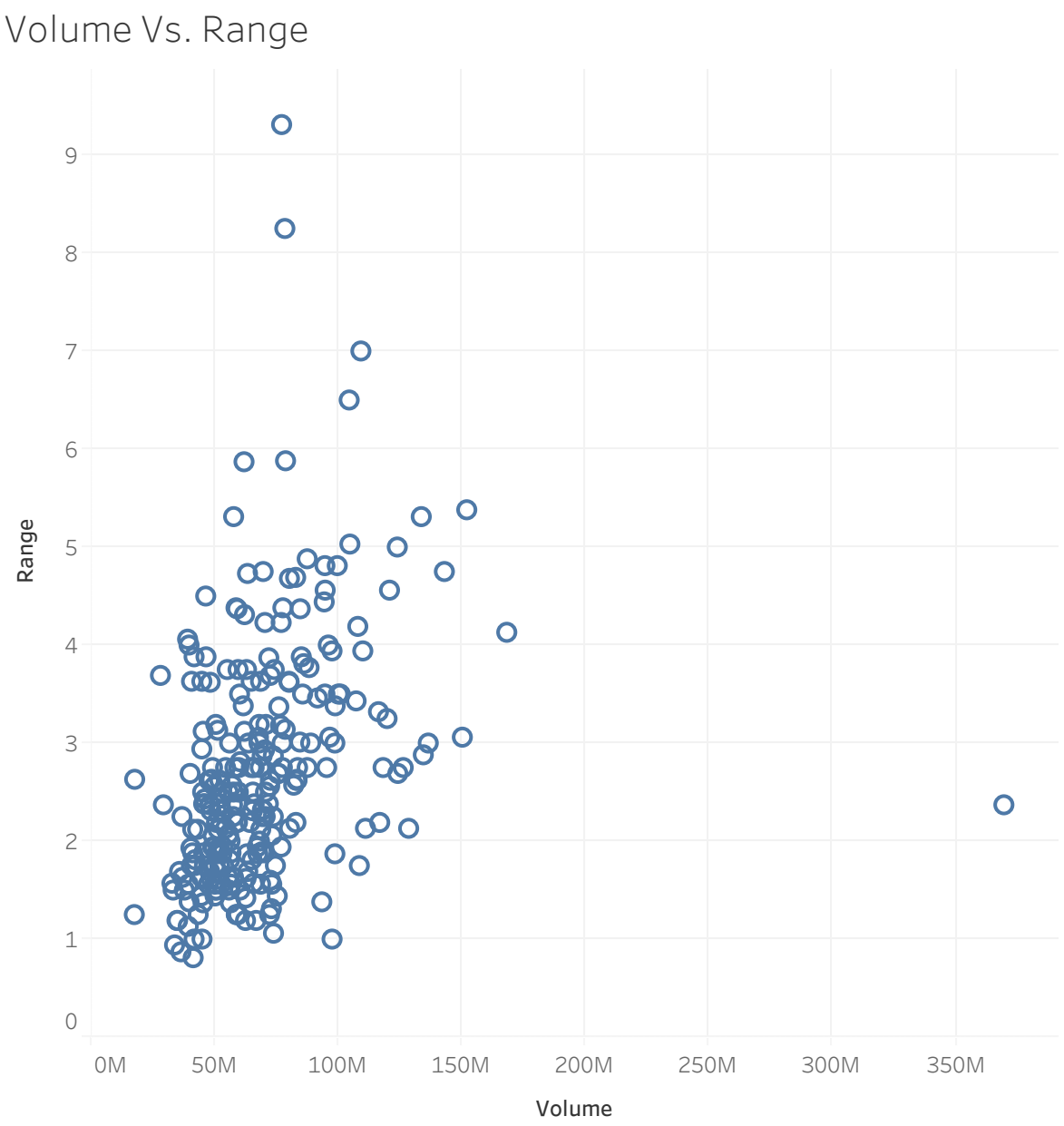
The trend of sum of Close for Date.

b. Volume vs Date (bar graph)



The plot of sum of Volume for Date.

c. Volume Vs. Range

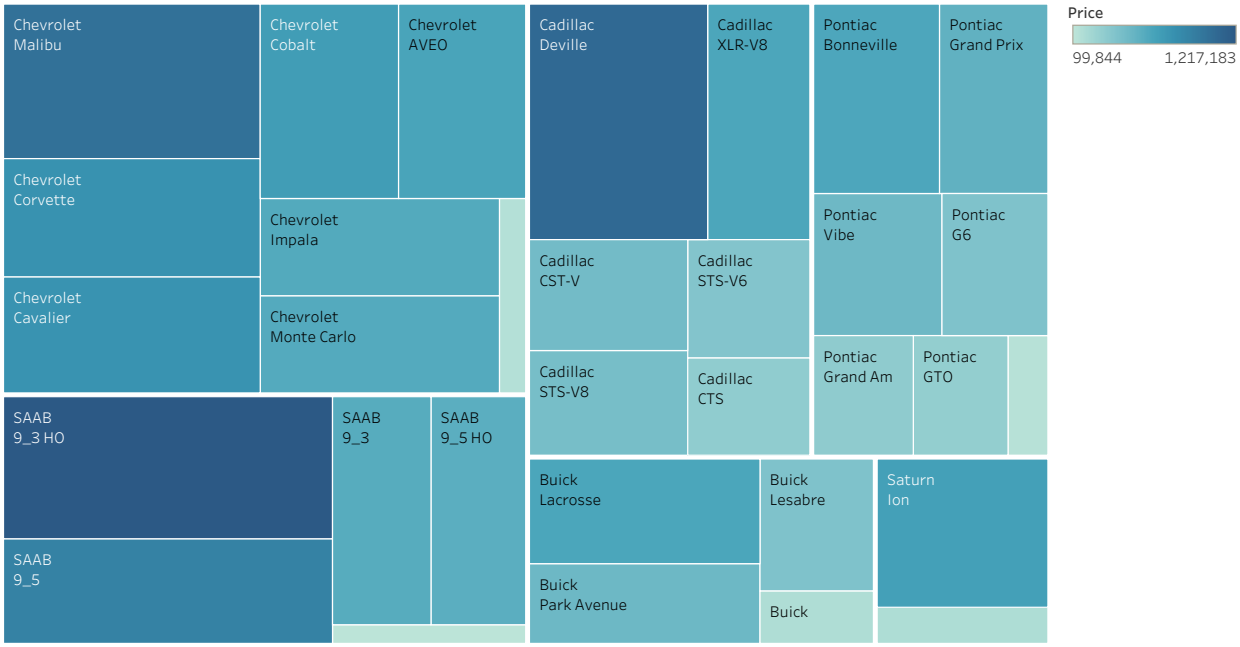


Volume vs. Range.

2.

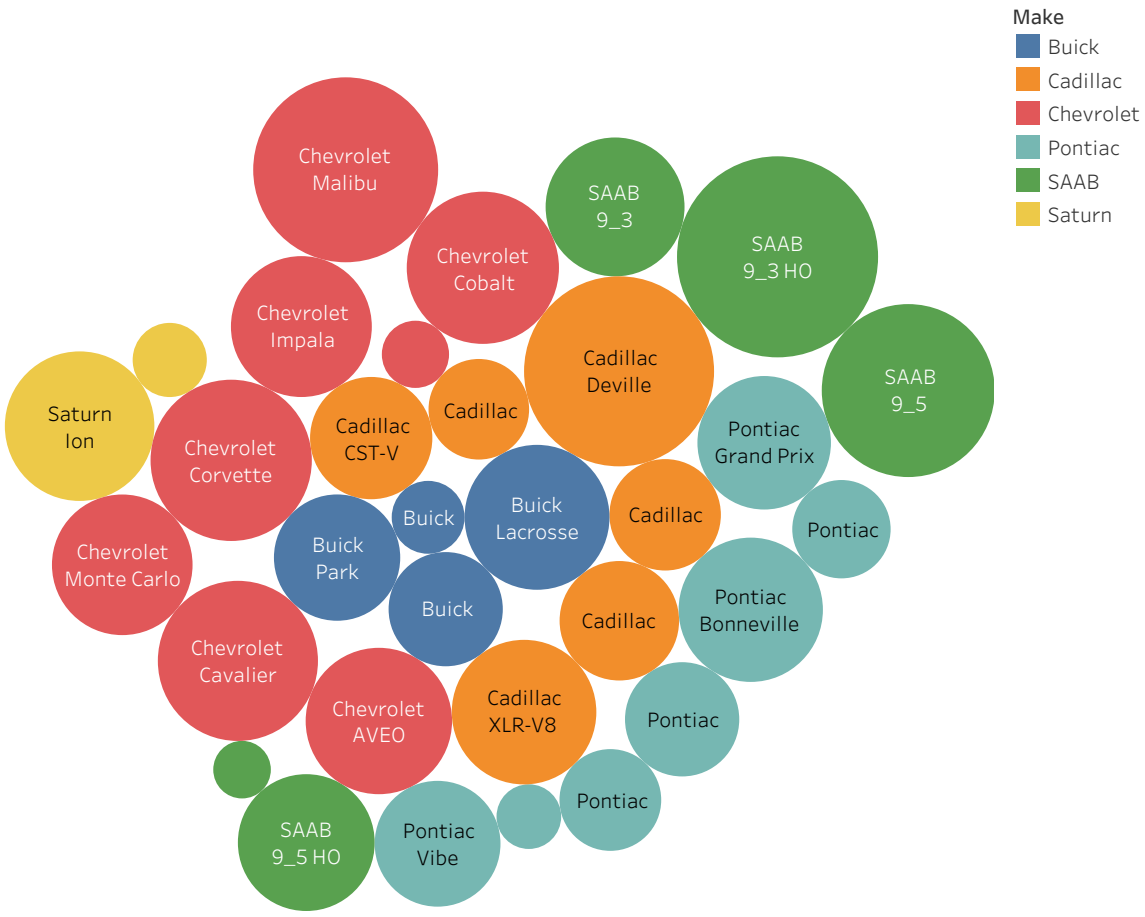
a. Price, Make and Model

Price, Make, and Model



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

b. Packed Bubble Chart



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

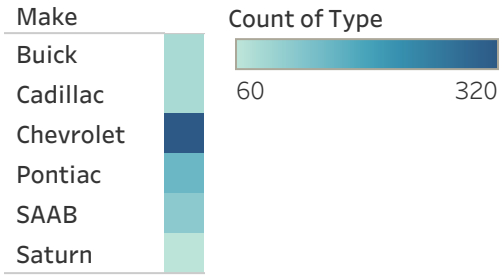
c. The packed bubble chart uses color hues to show the differences between car makes, while the treemap uses proximity and grouping to differentiate the different car makes. The treemap uses color values and size to show the differences in price between the different models of cars among the same make, while the packed bubble chart uses size alone to show the differences in price. I think that the treemap shows the differences in price more effectively, especially in comparison to cars of the same make, because they are all grouped together. I think that the packed bubble chart shows the differences in car makes more effectively, because the differences in color are immediately noticeable. Additionally, I think that comparing prices of the most expensive cars of each make is clearer in the packed bubble chart, because. the most expensive cars are closer together in the packed bubble chart.

d. Contingency Plot

In the contingency plot below, we can easily see Chevrolet has the most types of cars because the color is the darkest. We can also see that Buick, Cadillac and Saturn appear to sell a lower

number of cars. We can compare the number of types of cars that are in close proximity to each other, but the colors on opposite ends of the plot are harder to compare.

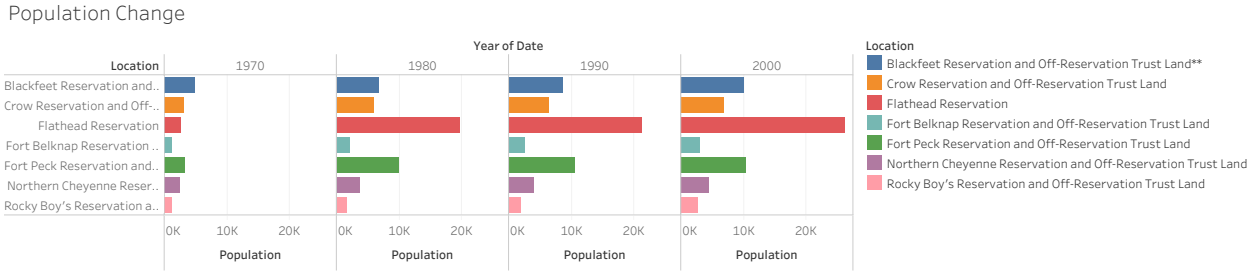
Contin-
gency
Table



Count of Type (color) broken down by Make.

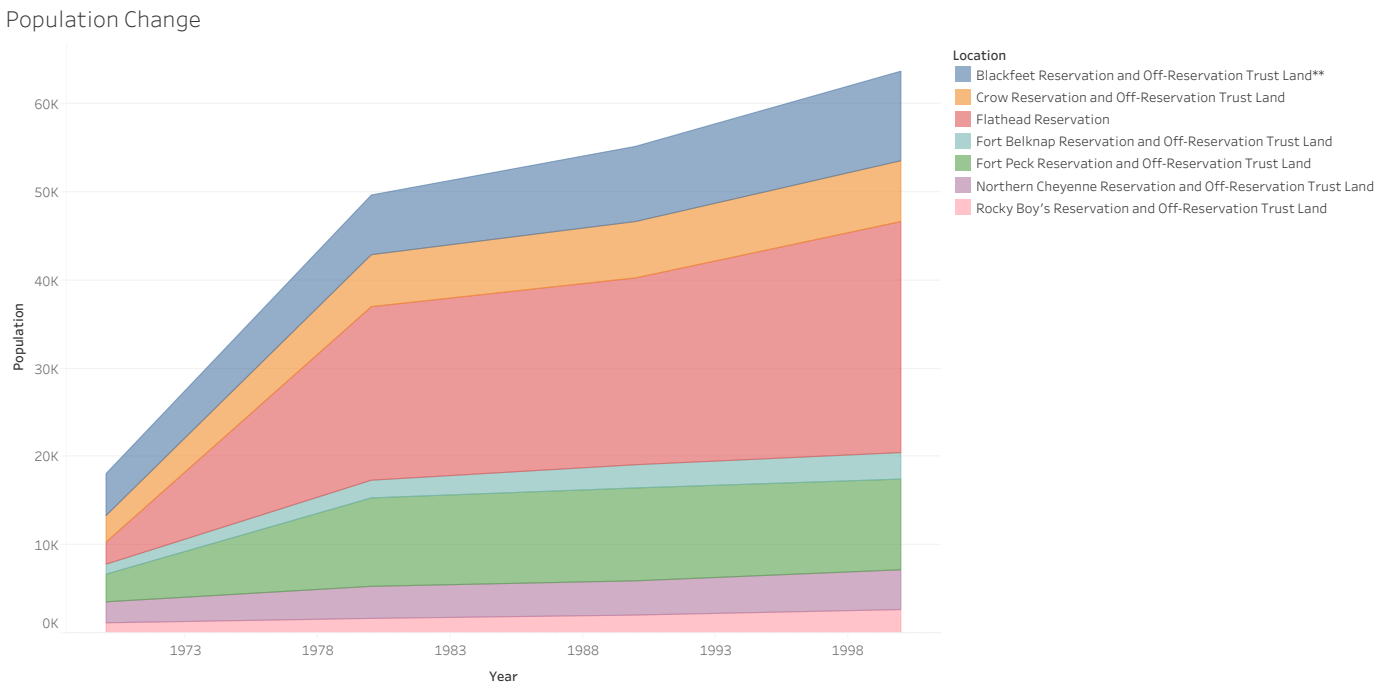
3.

a. Population growth over the year for each reservation.



Sum of Population for each Location broken down by Date Year. Color shows details about Location. The view is filtered on Location, which excludes Montana.

b. Reservation population for each year subdivided among the different reservations.

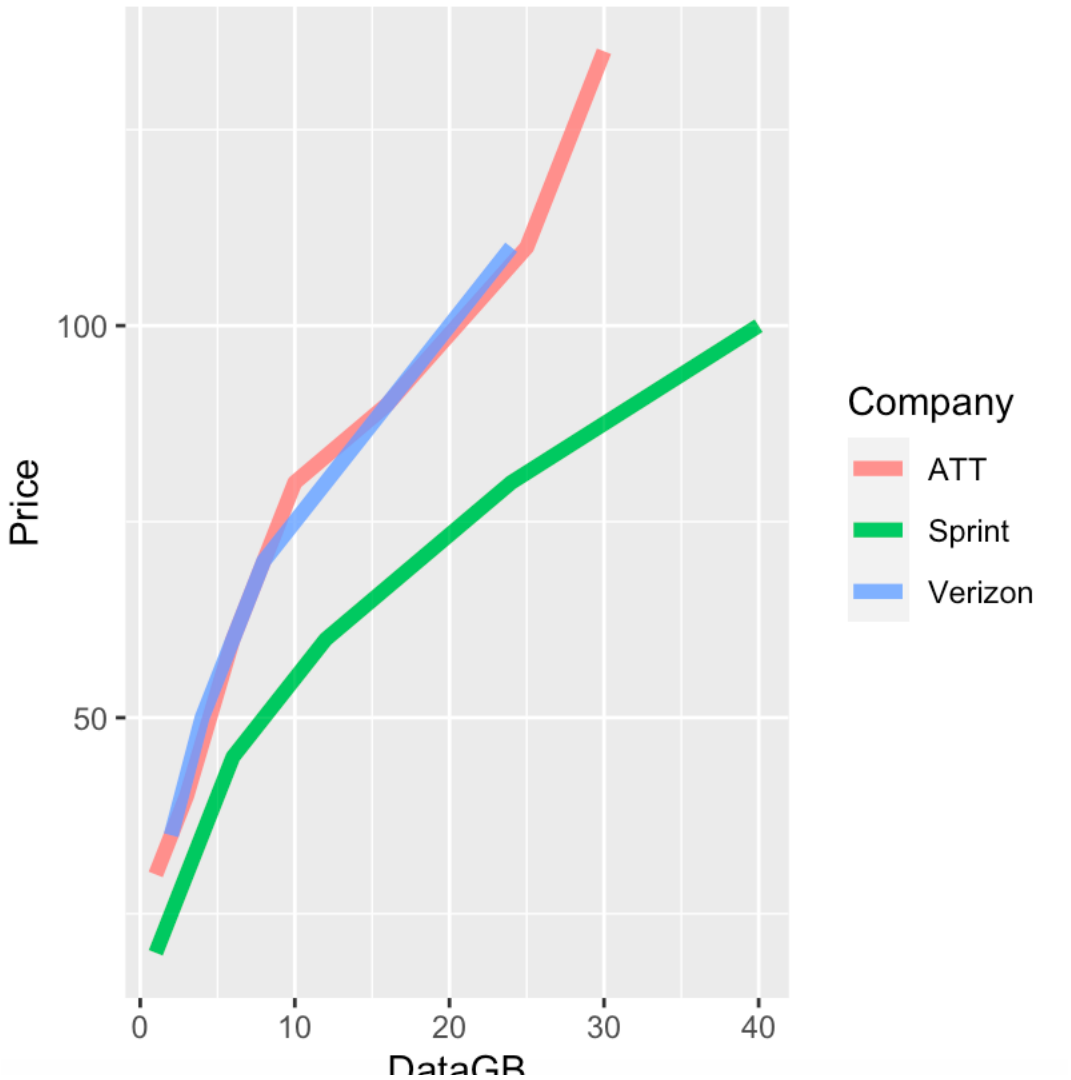


4.

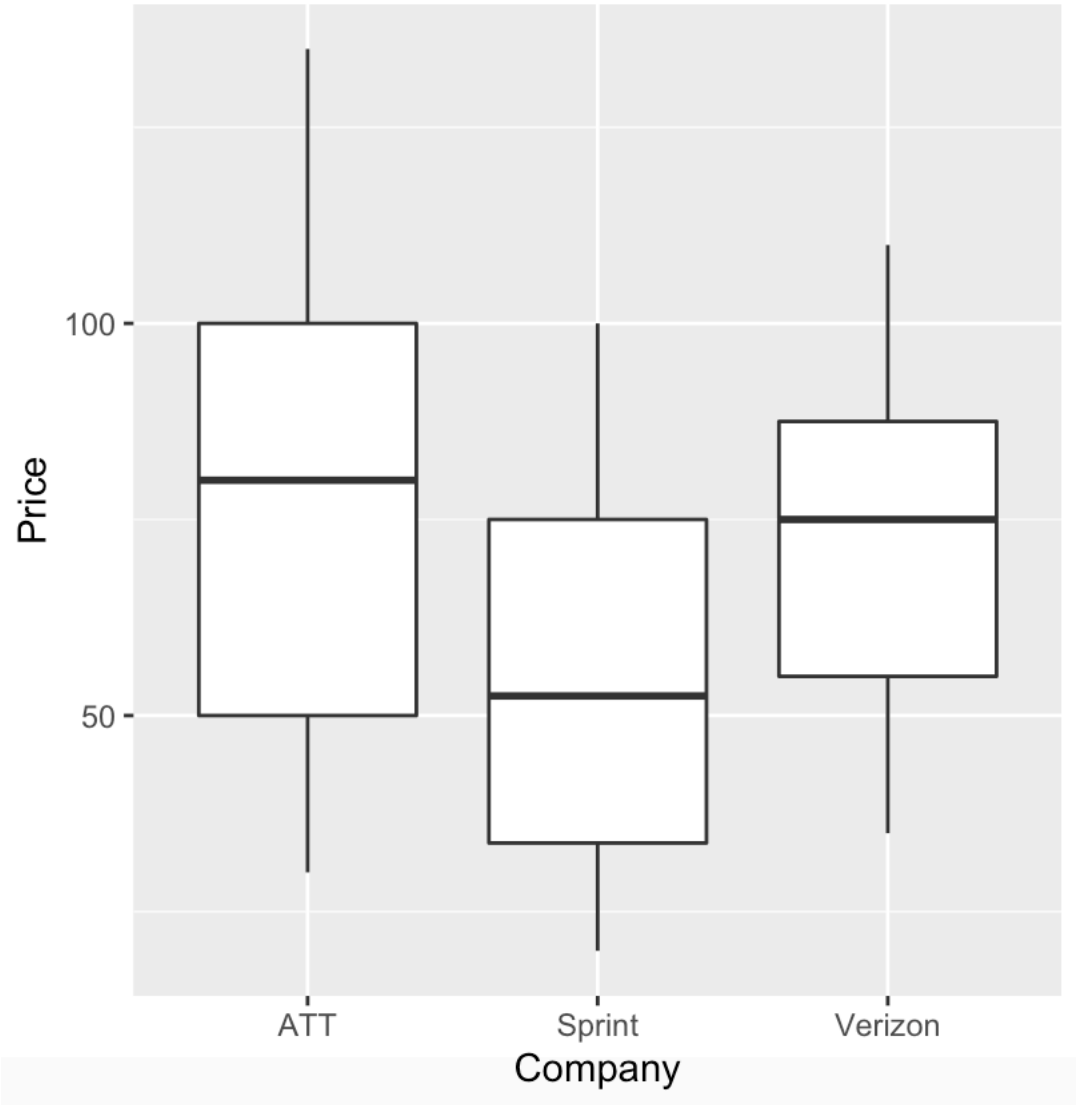
a. Pre-attentive attributes refer to the ability to process visual stimulation so quickly that no conscious thought is utilized. Pre-attentive attributes can be used in combinations, the type of encoding used in the representations may dictate how effective the representations are.

b. Weber's law states that, "the just-noticeable difference between 2 stimuli is proportional to the magnitude of the stimuli", meaning that humans can perceive the differences in two objects in relation to their percentage increases. Starting with 0 is important because it defines a scale that can build a stronger reference point for the two objects.

5.
This following line graph shows how the cost of each cell phone plan increases based on the amount of data included in the plan. The price is represented on the y-axis and the amount of data is represented on the x-axis. Each plan is shown in a different color to differentiate them. This representation allows consumers to look at each company in comparison to each other, and determine which one costs more depending on how much data is included.



This next representation shows the range of price each company offers. It also shows the price distribution for the plans of each company. We can see that overall Sprint tends to be less expensive than the other two companies, and ATT has the most expensive plans.


100
50
Price
ATT
Sprint
Verizon
Company