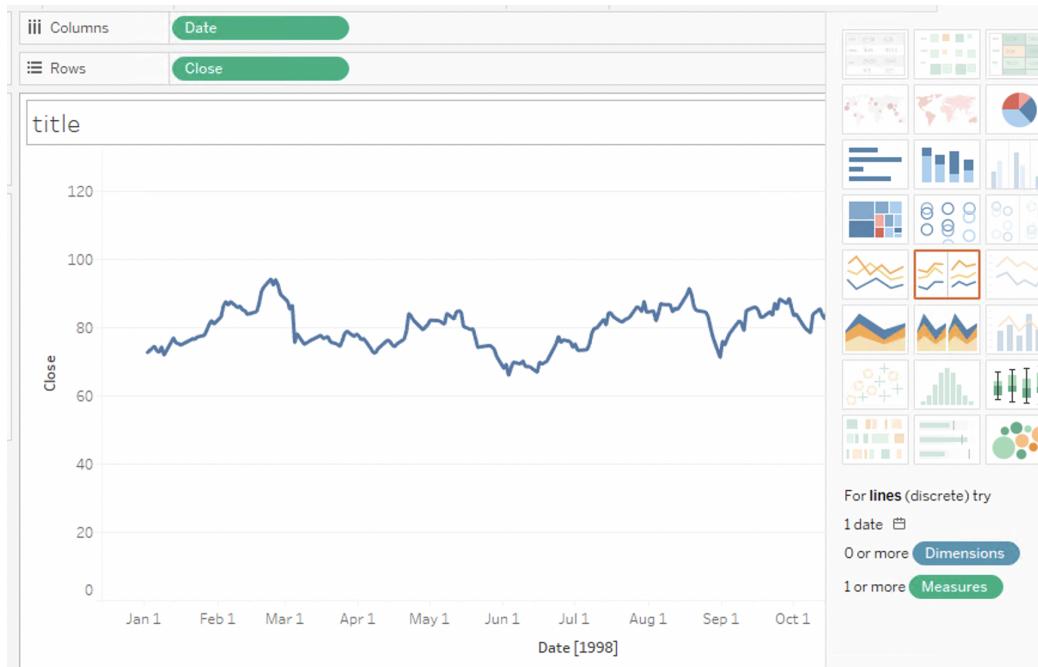


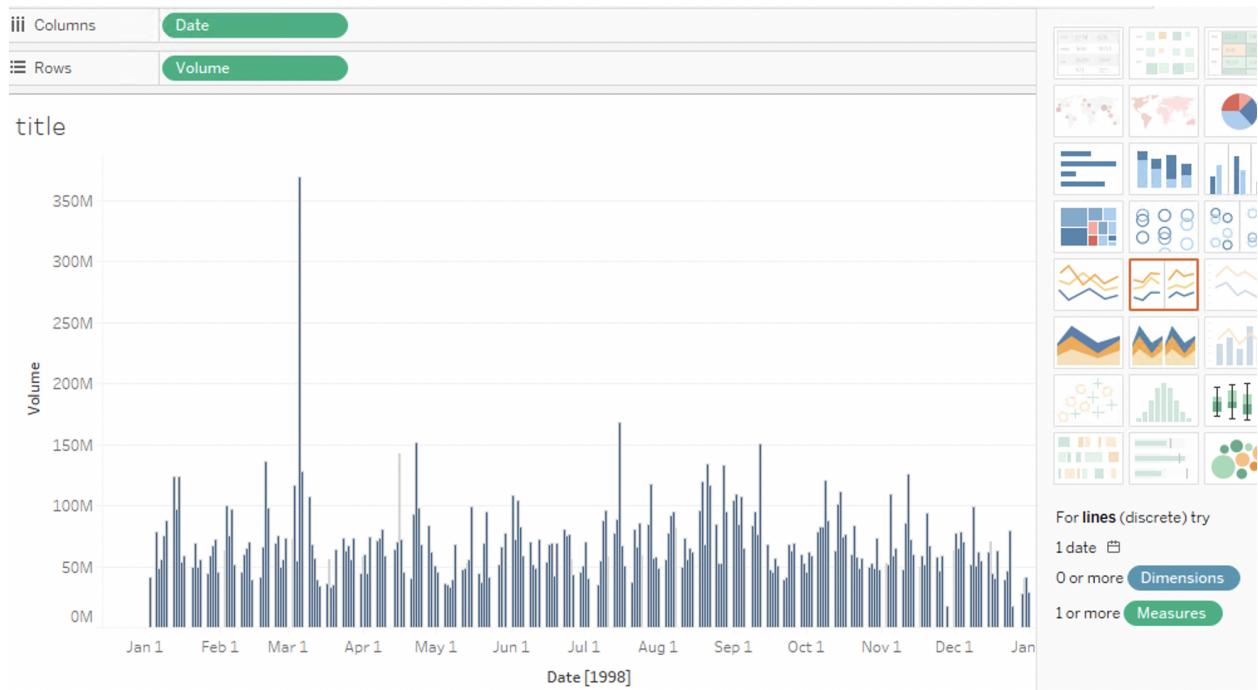
YunTzu, Yu  
2054878

1)

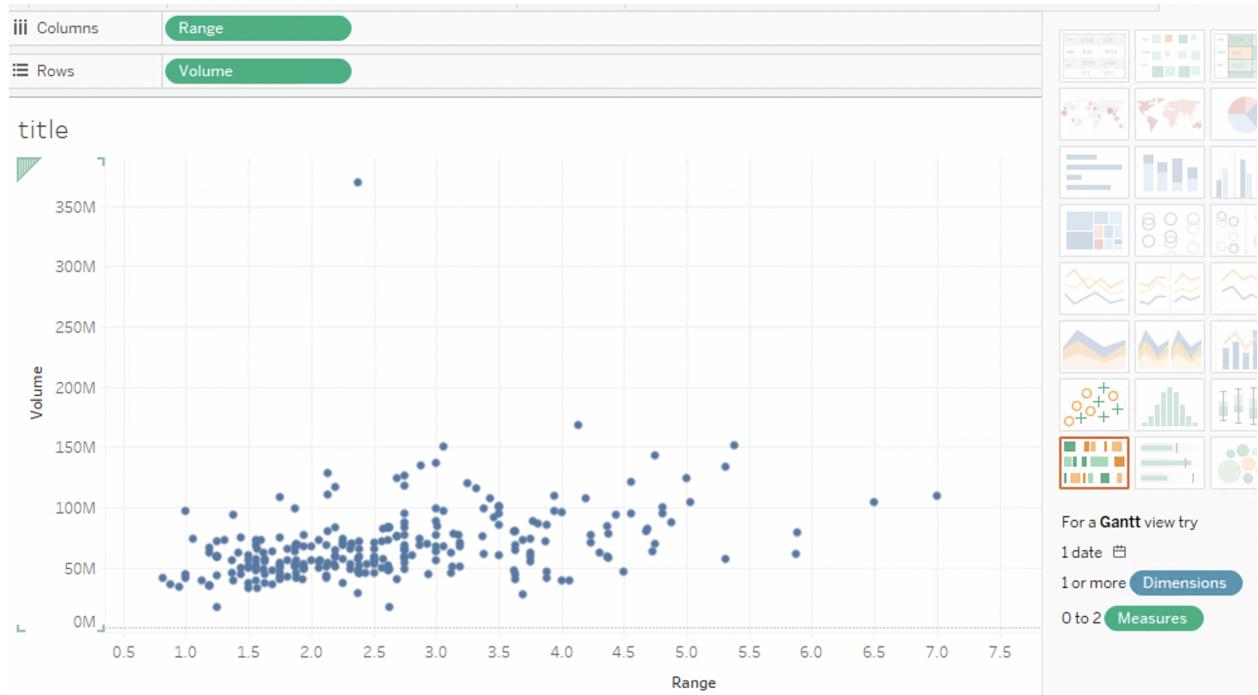
- a. Graph the closing price vs. the date with an ordinary line graph. If you use Tableau, you need to right-click on the Date and choose Exact Date from the dropdown menu so that it uses the full date with "day".



- b. Graph the Volume vs. the exact Date as in the last part with a bar graph.

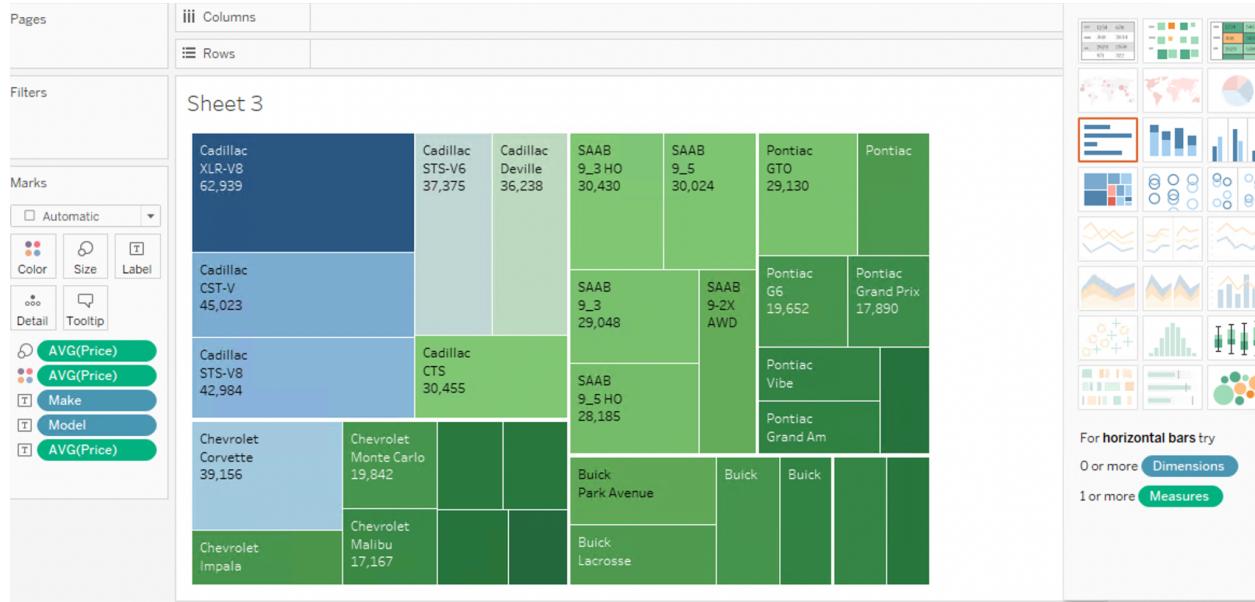


c. Create a scatterplot that graphs the Volume on the x-axis and the daily price range on the y-axis. You will need to create an additional column that contains the "range" of the prices for the day as the difference between the fields High and Low.



2)

a. A treemap based on Price with a main subdivision for the Make of the car and a minor subdivision based on the Model. Because each row of the data file represents a single car but each box in the treemap represents all the cars with a given make and model, pay very close attention to what kind of aggregation is being used.



b. A packed bubble chart of the same type.



c. Write a short paragraph discussing the differences between the two plots. Describe for each something that displayed more clearly than with the other.

In terms of treemap construction, a rectangle presenting a node contains the rectangles representing its children.

The graph a - treemap subdivided the data into 6 children based on the model and the make. We could also easily distinguish which area of model and map in the map could have the most expensive average price. As we can see , the graph a - treemap separates the data according

to its price by using color saturation and then by model , make. We could easily read the data by treemap through its saturation color and box size.

We also could easily distinguish which model and make have the highest average price from graph b, however , treemap is the graph which shows more detail, so I would say the treemap is better than a packed bubble chart.

d. Create a contingency plot (Tableau calls it a heat map under Show Me) showing with color the number of cars (Number of Records) of each Type sold by each Make. Explain at least one observation about that data that this chart makes it easy to see.



According to the area, we could see the type -Seden has the most sales among all types of the car.

3)

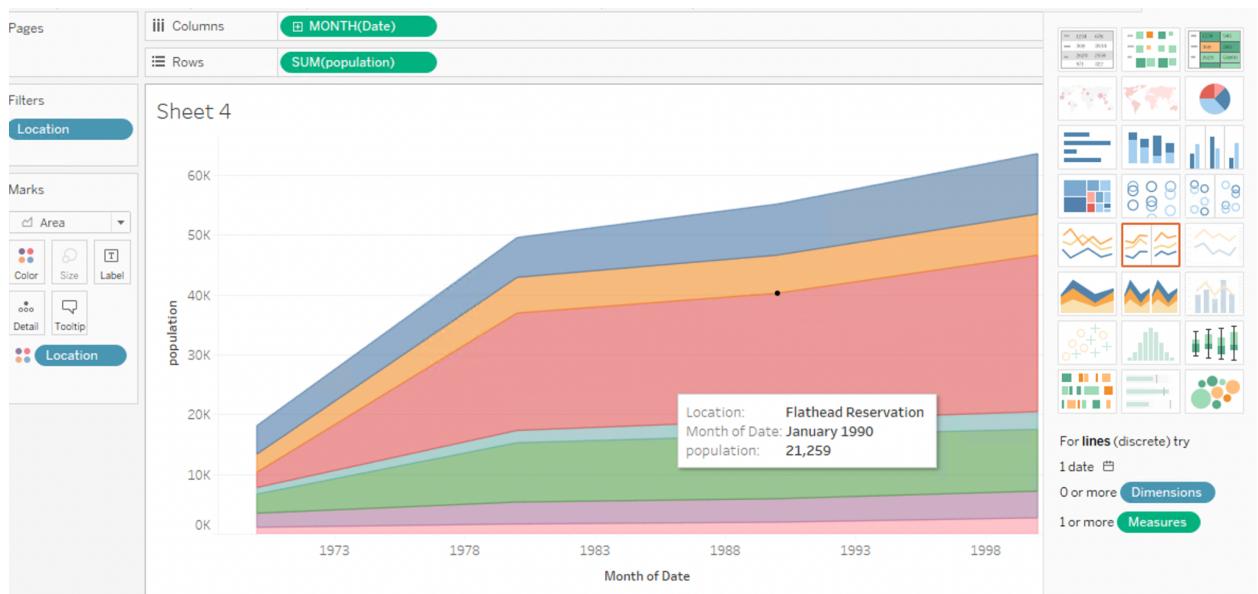
a. One chart that graphs the population growth over the years for the individual reservations.

I would choose the bar chart to see the population trend for the individual reservations through years.



b. One that graphs the total reservation population for each year, subdivided among the different reservations. The difference between this and (a) is that in (b) we are not looking only at each population individually but at the growth of the total population of all of them together, then subdivided by the reservations.

I would choose the area chart to not only see the population trend for the individual reservations through years but also the growth of the total population through years.



4) For this question, answer only with text. You may include an illustration if you would like, but you do not need to visualize data for this question.

a. Explain what we mean by 'pre-attentive' attributes. Are these as effectively recognized by human perception when they are used in combinations?

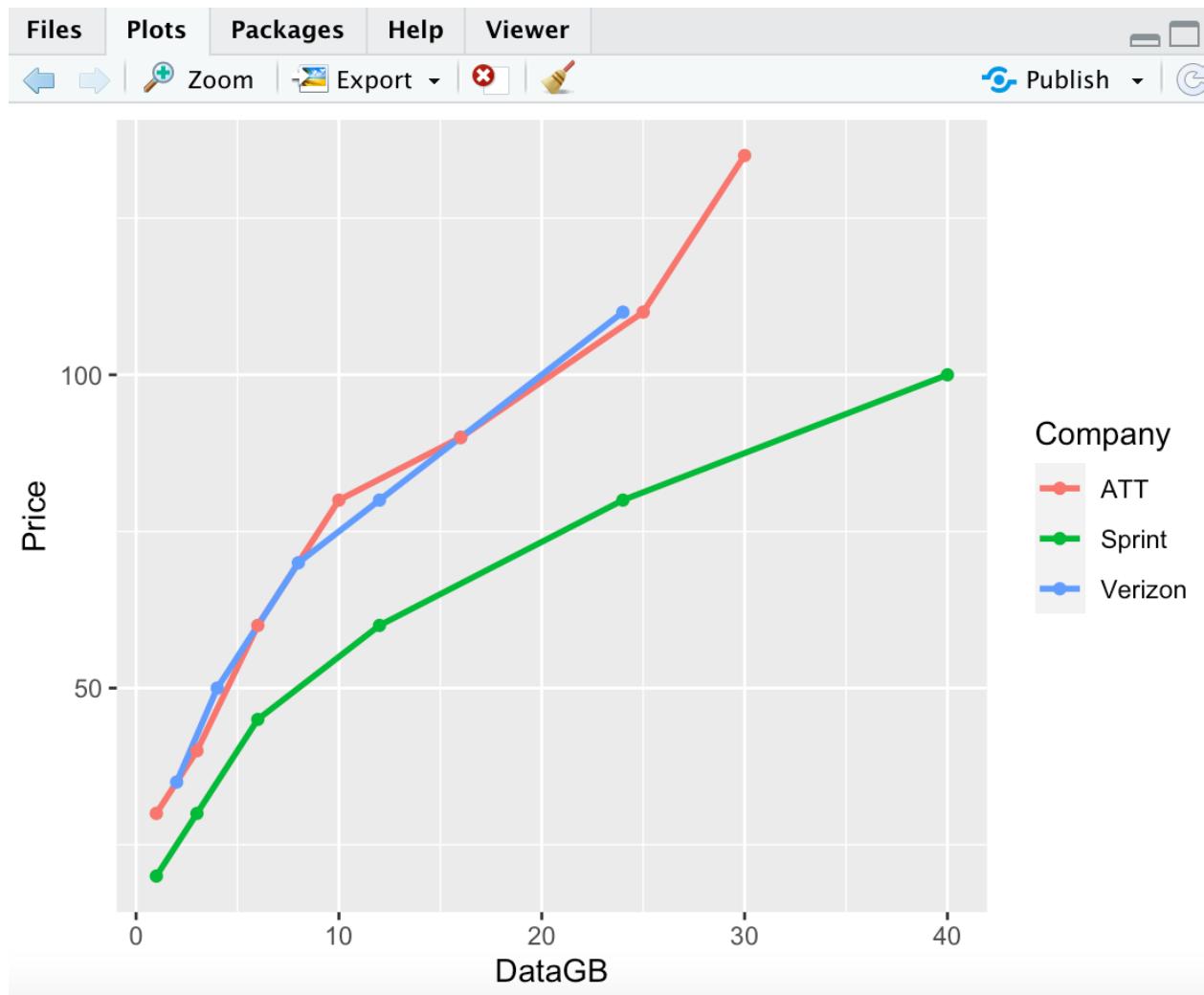
Pre- pre-attentive attribute means some things are so easy to see you do not even have to think, which means that we could use data visualization as a powerful tools to make the data easier for a user to understand. It enables us to let the users' attention towards the most important information that we try to convey by visualizing the data.

b. Use Weber's Law to explain why it is important to include 0 in the numerical axis of a bar chart.

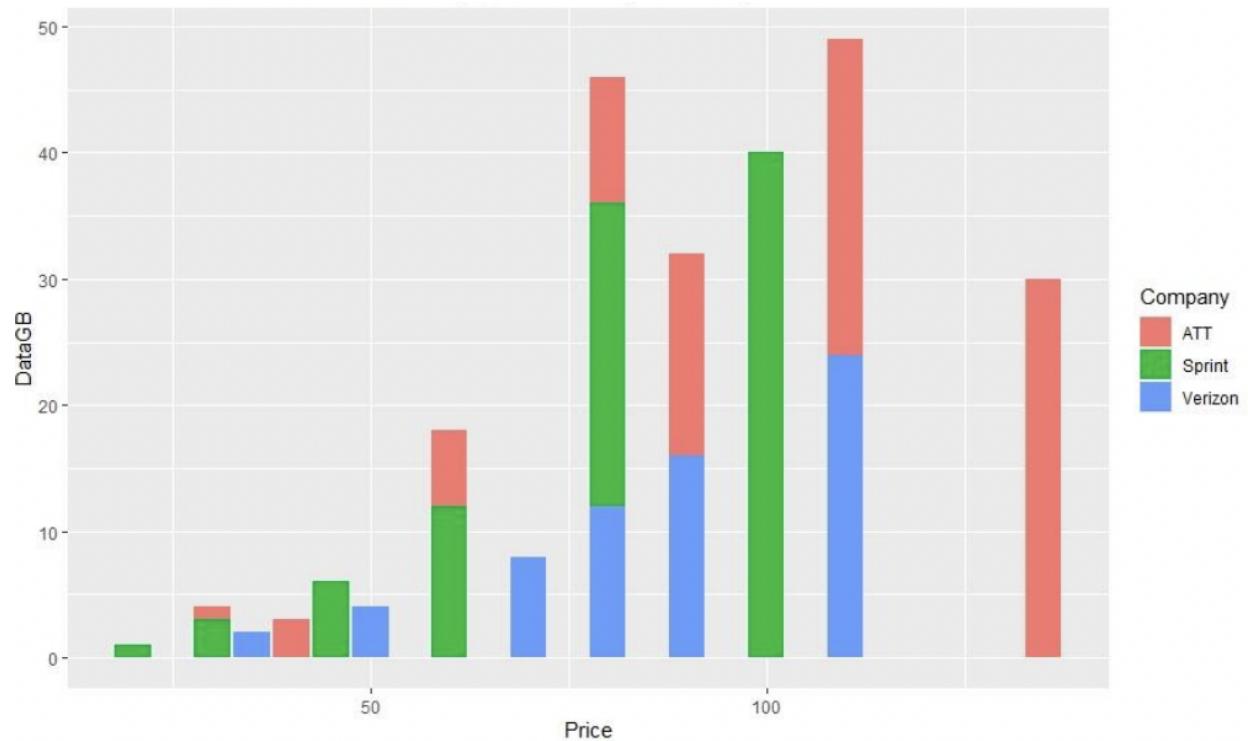
By including 0 on the bar chart it is simpler to determine the difference between all the values in the bar chart in comparison to the zero, which is easier in human perception.

5)

This graph of cell phone pricing plans is not very easy to use. Use R for this question and recreate this graph in two different ways of your choice. For each one, explain what you are trying to help the user see. For example, one might compare the cell phone companies to see what kind of plans they have. Another might be best for examining the trend of the relationship between price and data bandwidth. That relationship may hold overall, or you could look to see if it is different per company. You can decide what to visualize, i.e. what question to answer with your visualization, but make sure to explain what this visualization should be showing. To get full credit, you must produce a graph which makes the answer to your question immediately clear. It must also be well implemented, i.e. following the guidelines at the top for a clean graph.



```
ggplot(data =cellPlans, aes( DataGB,Price, color = Company ))+geom_line(size = 1)+geom_point()
```



```
ggplot(data=cellPlans, aes(x=Price, fill=Company, y= DataGB ))+ geom_col()
```