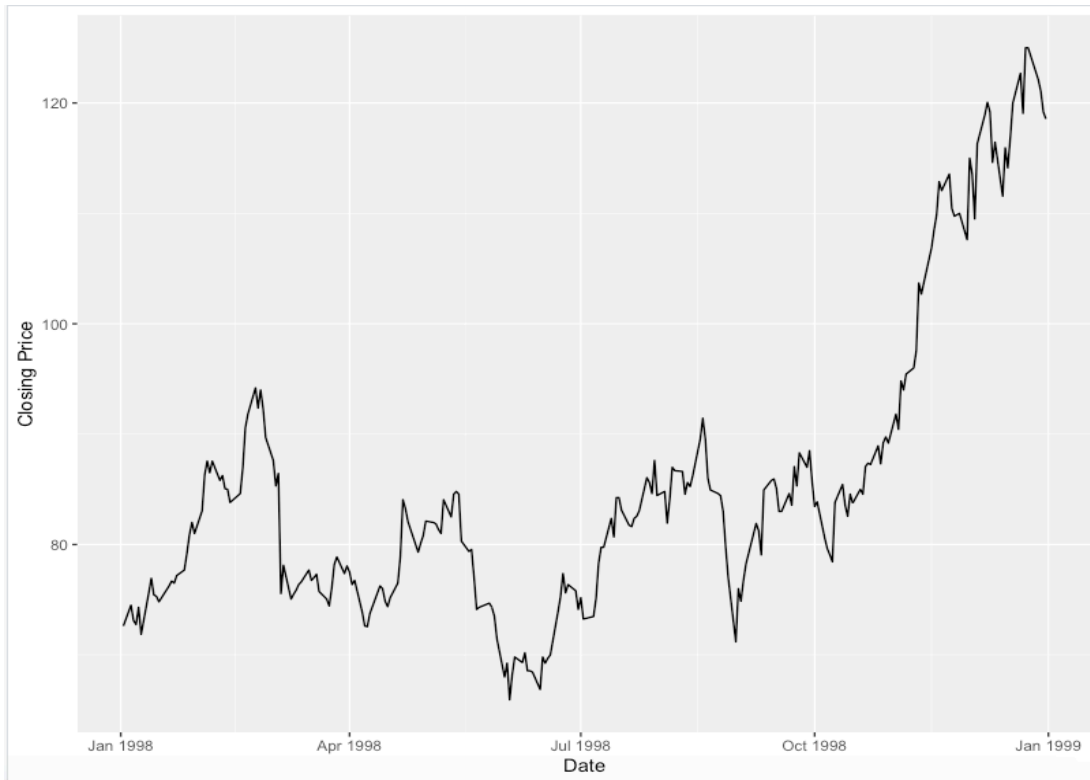


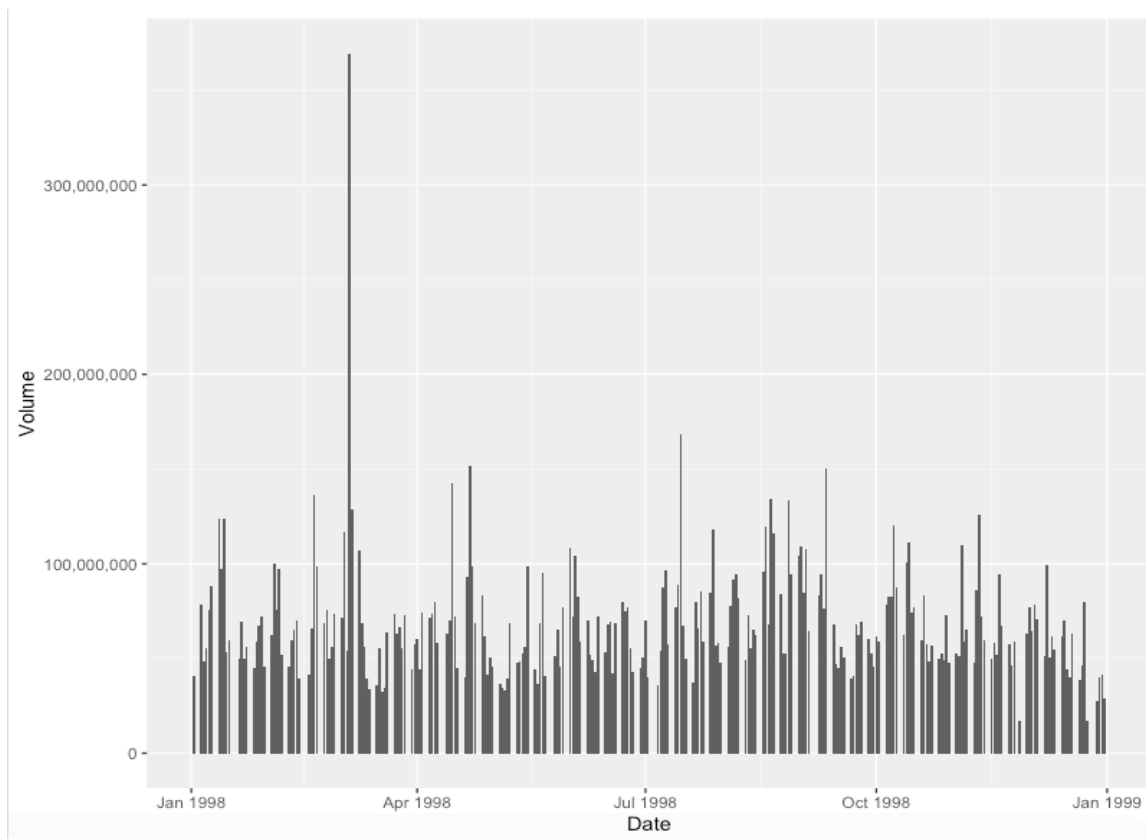
Homework 1
Kunal Roy
202337

1)

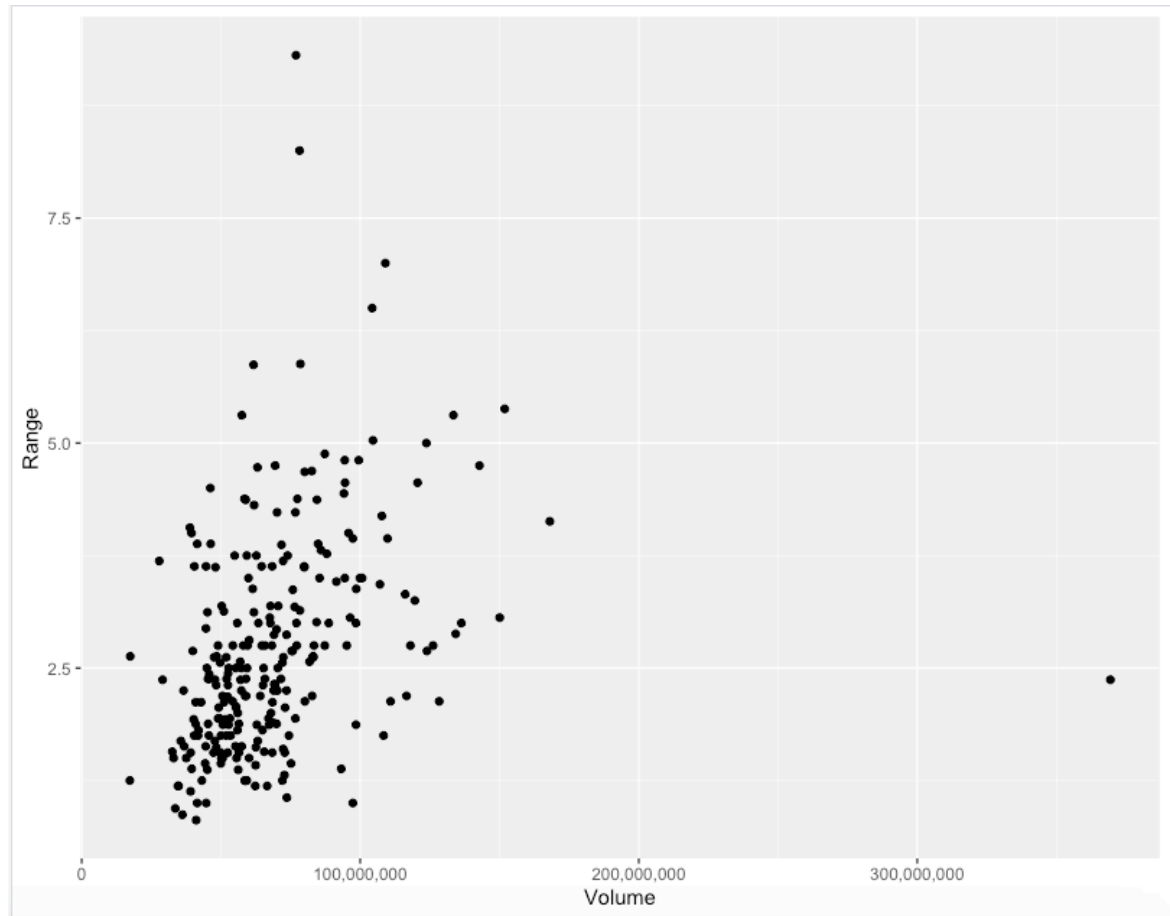
a)



b)

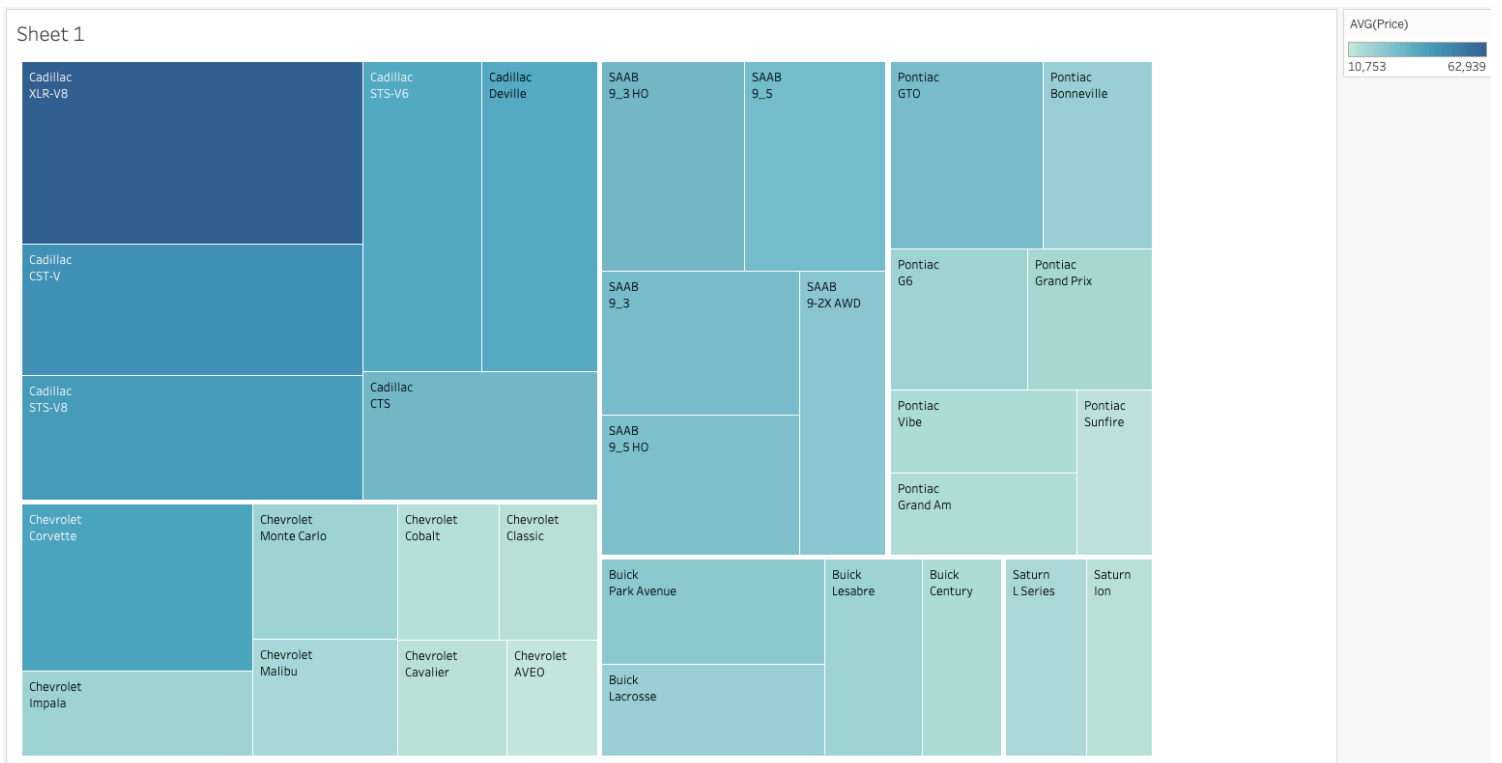


c)



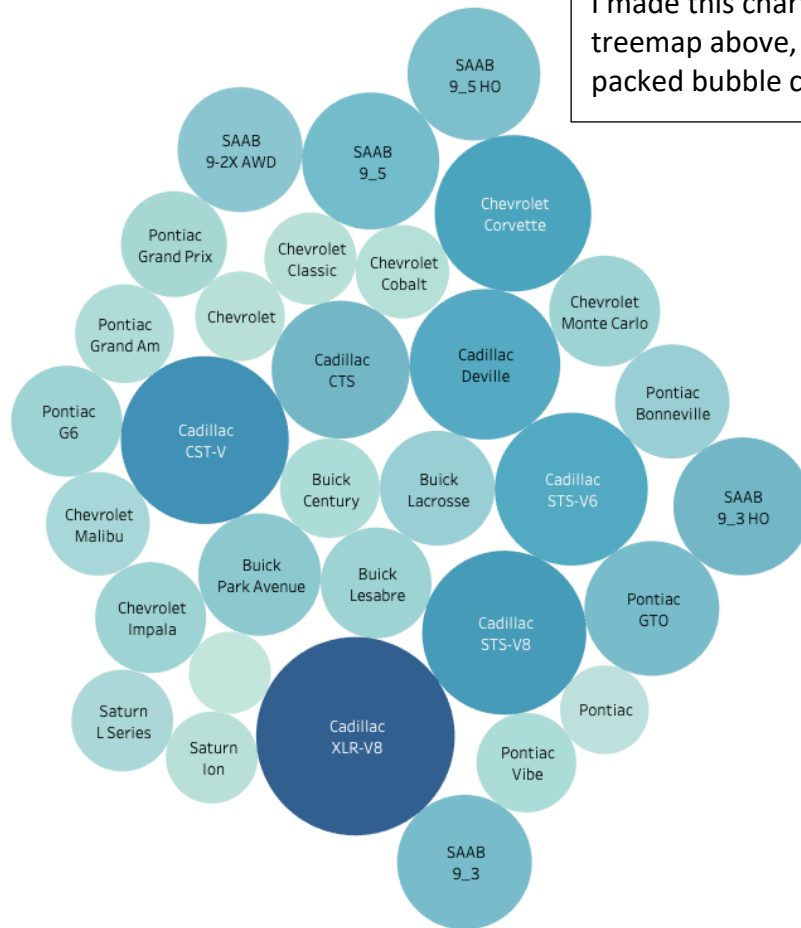
2)

a)



I made make and model a dimension and average price a measure and dragged them into the marks section. I used average as an aggregation as there are many cases of cars with the same make and same model, hence an average price of the same make and same model would be helpful for the audience to know.

b)

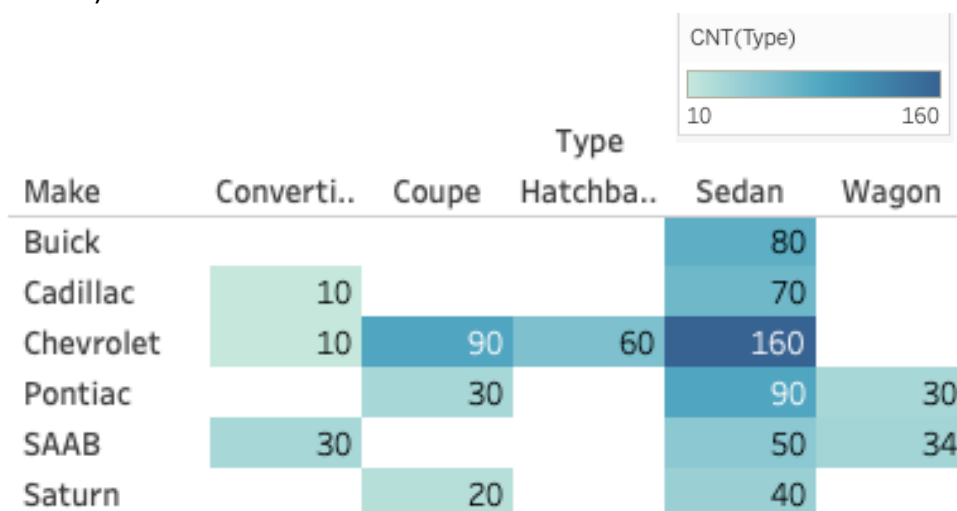


I made this chart the same way I made the treemap above, I just changed the setting to packed bubble chart under the show me tab

c)

The differences between these 2 plots above is mainly in the layout and the shapes used. In the first one it is laid out in a rectangle, the second is a lay out more random. The first is divided into rectangular shapes and the second is divided into circular shapes. I would say the second visualization containing the circles is better because its much easier to pick up the relative sizes of the circles, in the first one its more difficult to determine the relative sizes of the rectangles. Since this graph is encoding average price information by size and color, I would chose the second visualization as its easier to realize the relative sizes.

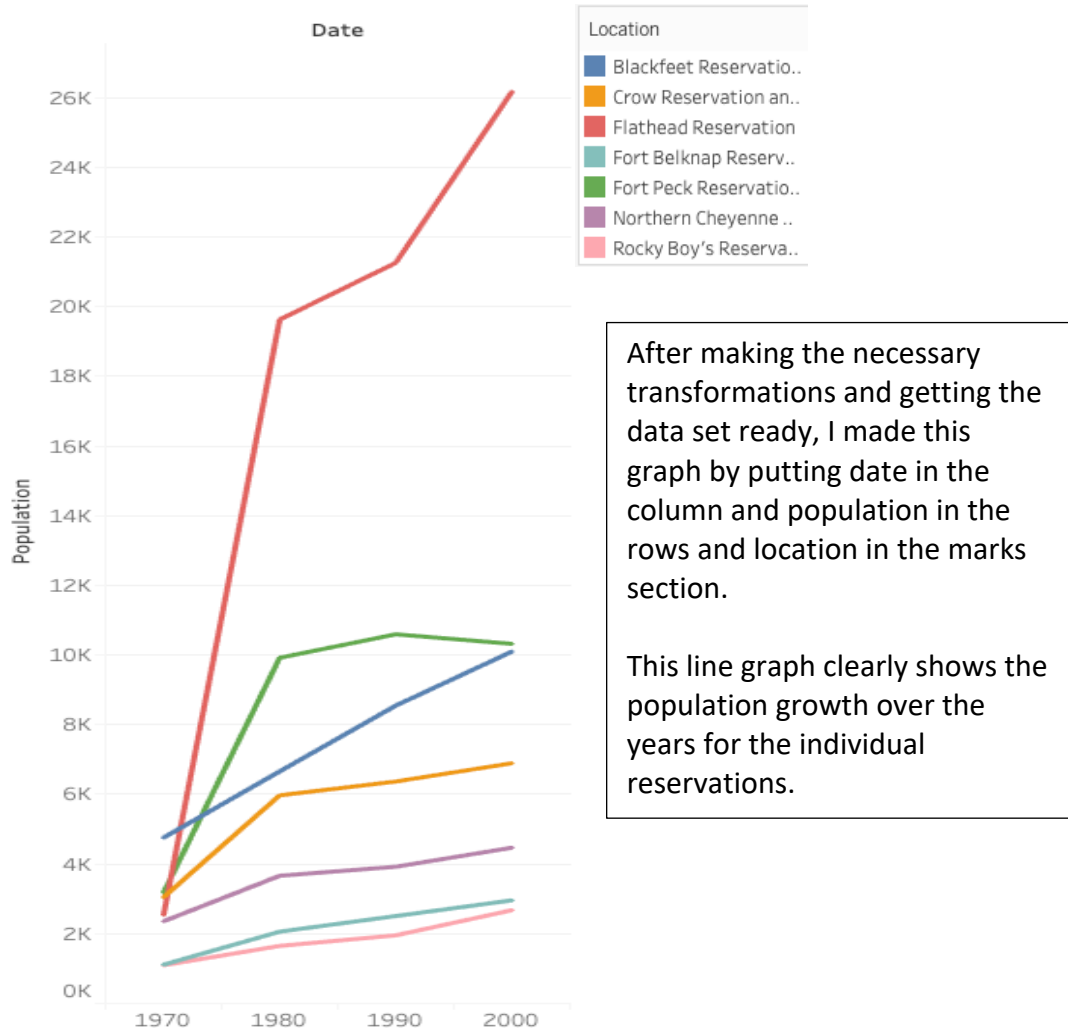
d)



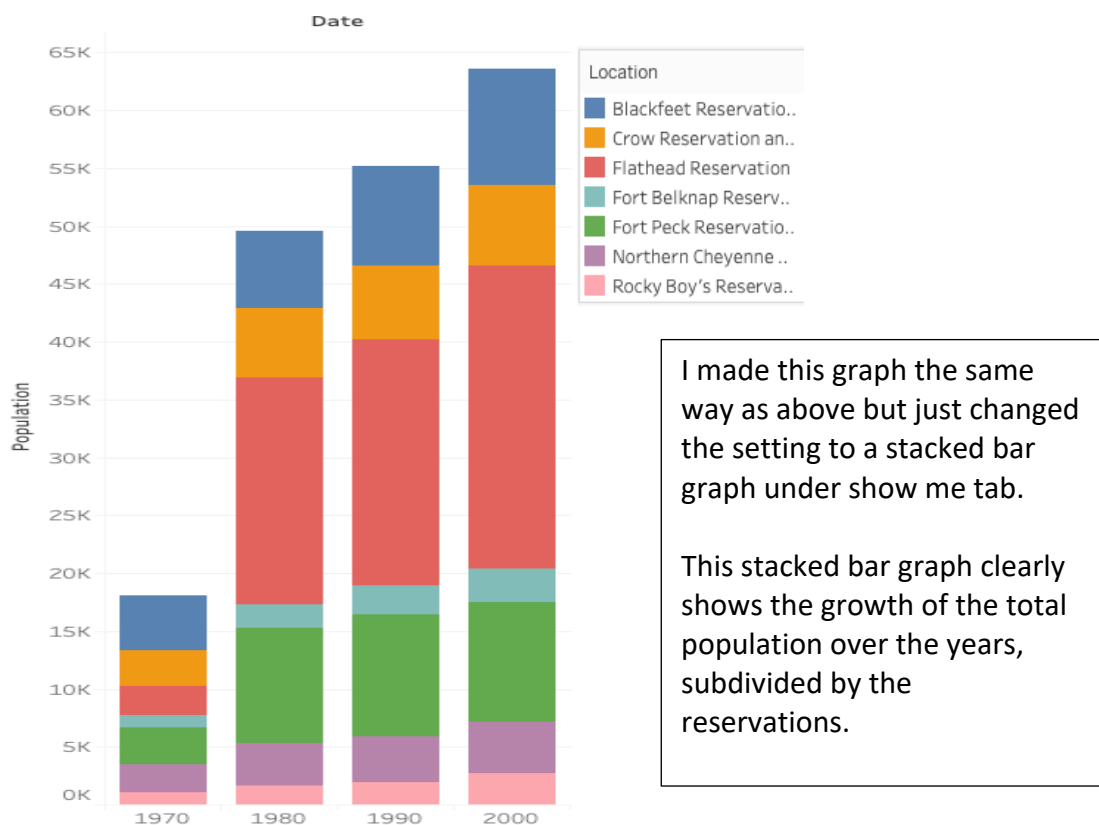
I made this heat map by putting type in the column, make in the rows and the type as count measure in the marks section.

One observation I can make is that there are a very high number of Cheverolet sedans for sale, 160 of them.

3)
a)



b)



4)

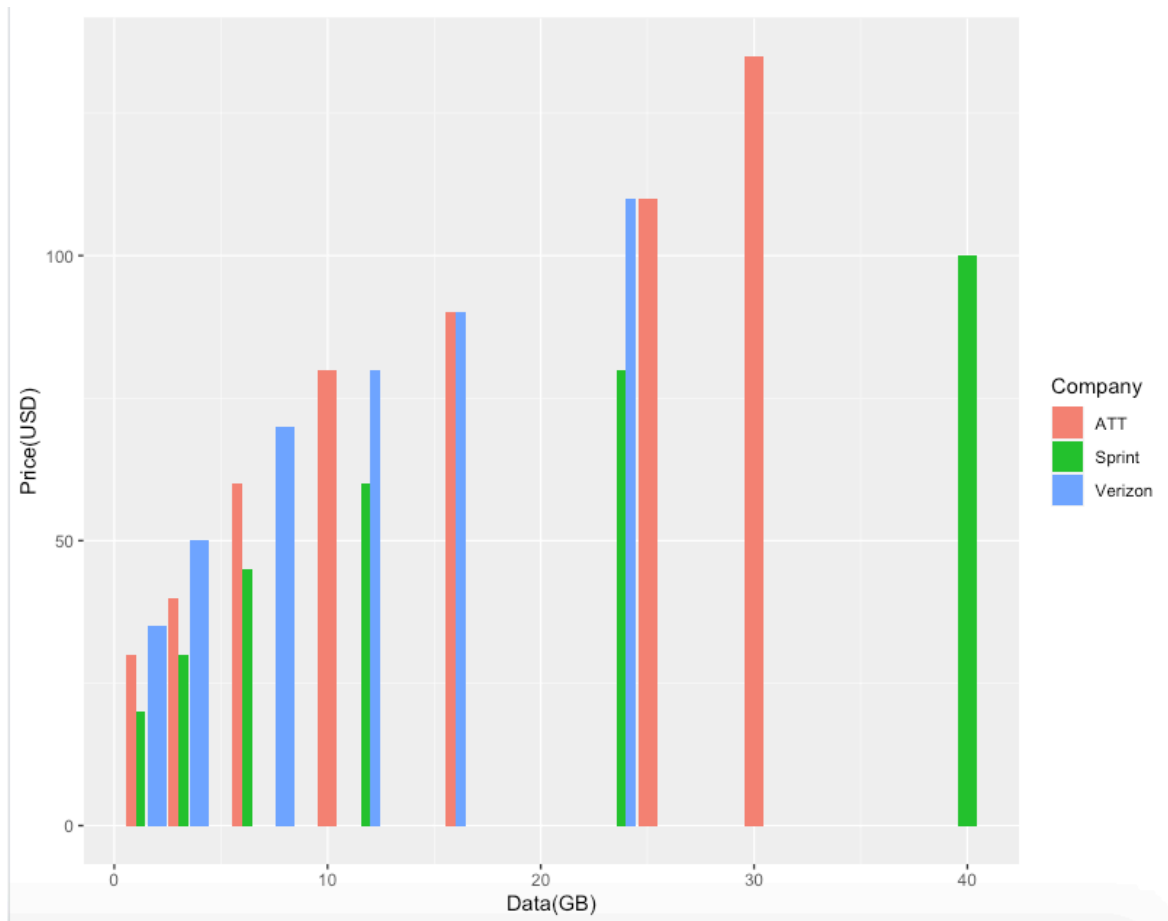
a) Pre- Attentive attributes are visual features we notice almost immediately after exposure to some visual stimulus and without too much conscious effort to notice them, these visual features basically tells you what your audience first notices when they first look at your visualizations. The 4 features are:

- Color(Intensity and hue)
- Form (orientation, line length, line width, size, shape, curvature etc.)
- Spatial Positioning
- Movement

Yes, when these are used in combination smartly and properly, they will be even more effectively recognized by human perception because the visual stimulus will be even more attentive when a combination of the features are used. However, if the combination of these features are used in a haphazard manner, it could put off the audience greatly.

b) Webber's law essentially states that human perception works by percentage increase, by this law it is important to have 0 in the numerical axis of a bar chart so that there is some baseline to work with, so 2 bars for example can be compared from the same baseline to accurately depict which one is higher. If their baselines are different, then it is hard to tell which bar is higher. Also, bar charts encode data by length, so when comparing lengths of different bars, a baseline or 0 in the numerical axis of the bar chart is a must to accurately realize which bar is greater in length. Truncating the axis or having different axes for different bars can mislead the audience.

5)
a)



With this graph I am trying to answer the question: how do the prices compare for different phone companies for different data plans?

This is a very important piece of information one might look at when deciding which plan to go for in terms of price and how much bang for your buck you get with the amount of data you get for that price. From this graph above, if you are looking for something in the 12 GB data range, you have the option of Sprint and Verizon, but sprint is cheaper for that same data range so Sprint is the more cost effective option so this graph clearly explains what it was made out to be.

b)

Company	DataGB	Price
ATT	1	30
Sprint	1	20
Verizon	2	35
ATT	3	40
Sprint	3	30
Verizon	4	50
ATT	6	60
Sprint	6	45
Verizon	8	70
ATT	10	80
Verizon	12	80
Sprint	12	60
Verizon	16	90
ATT	16	90
Verizon	24	110
Sprint	24	80
ATT	25	110
ATT	30	135
Sprint	40	100

This table is my second visualization. A table can also be a visualization. With this table I am trying to answer the question: What kind of plans do the different cell phone companies have?

With this table, one can clearly see what kind of data plans the different companies have. If one is looking for a 30-40 GB range plan, AT&T and Sprint have those options by looking at that table. If one wants the lower end of the spectrum of 1- 2 GB, the options of the companies are also visible to the audience from this table.