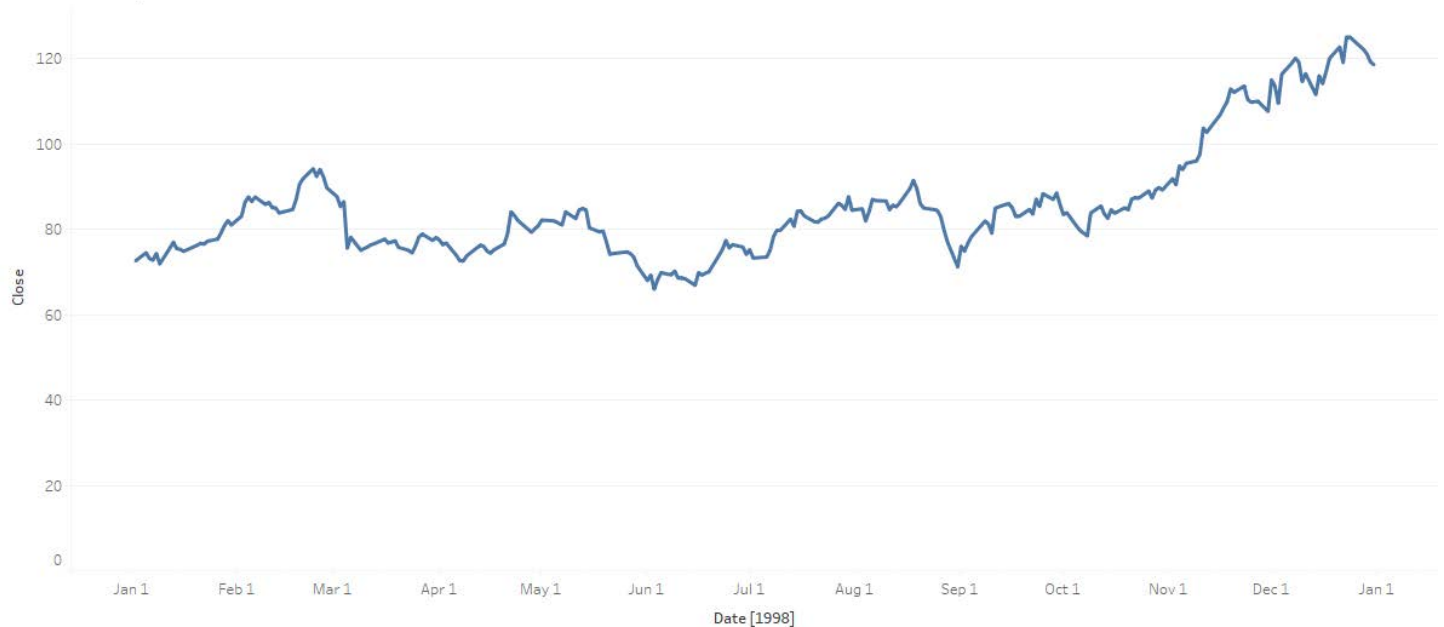


Problem 1.)

a.) Graph the closing price vs. the date with an ordinary line graph...

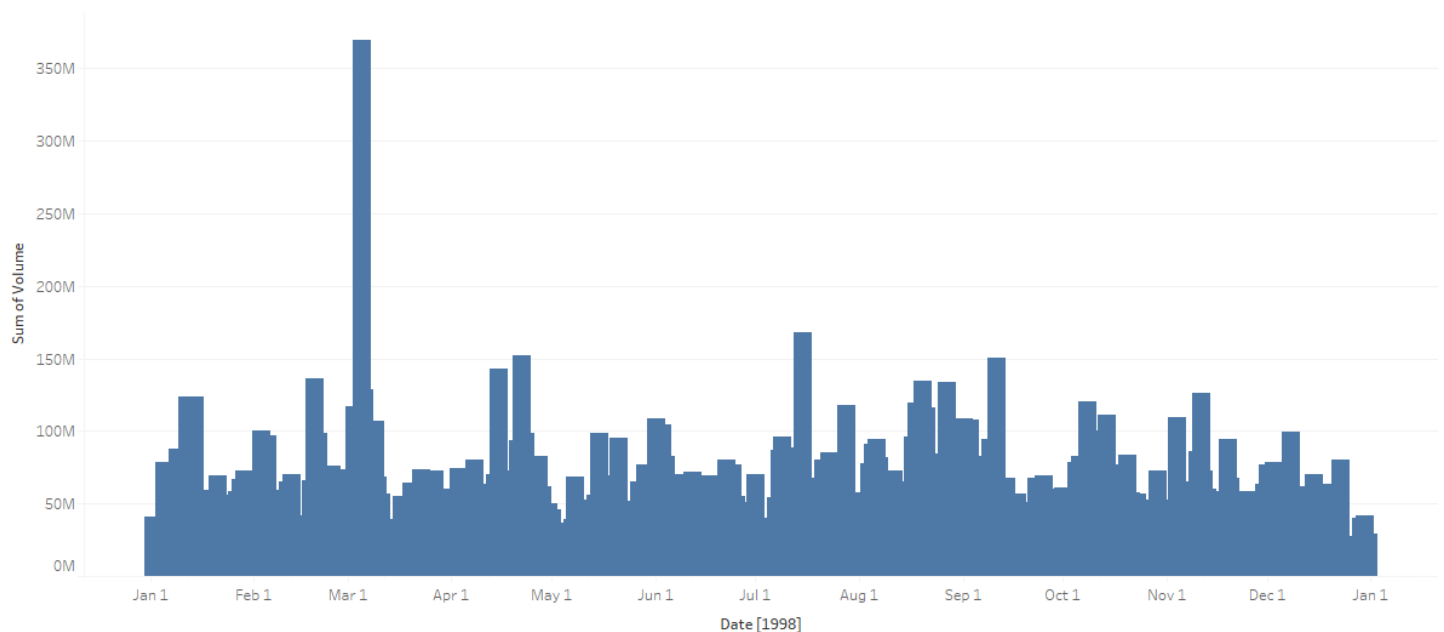
Answer 1.a.)



The trend of sum of Close for Date.

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

Answer 1.b.



The plot of sum of Volume for Date.

c.) Create a scatterplot that graphs the Volume on the x-axis and the daily price range on the y-axis...

Answer 1.c.

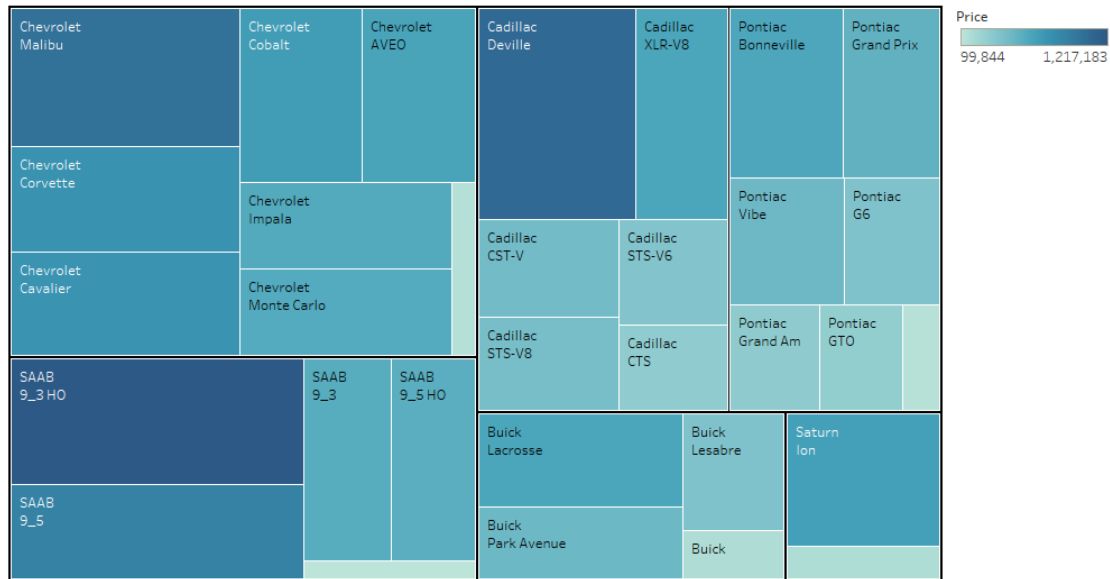


Volume vs. Range.

Problem 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...

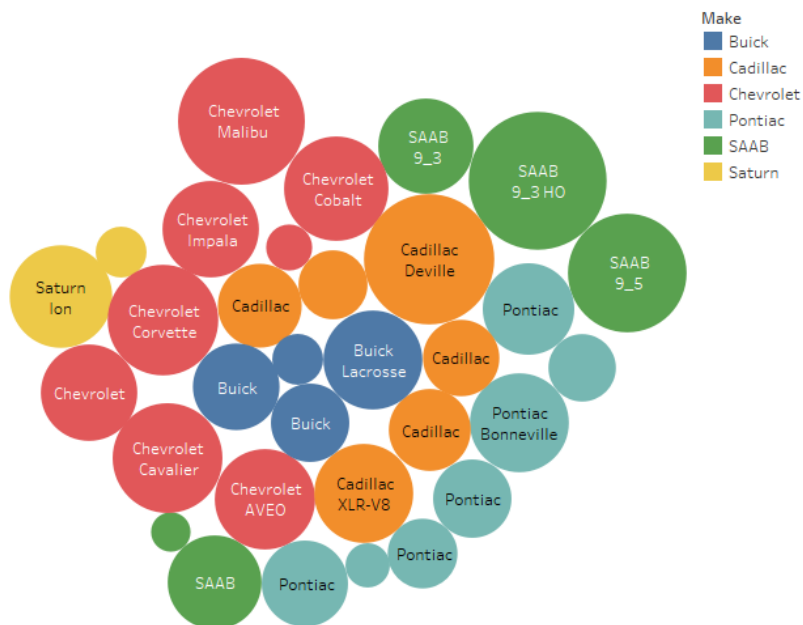
Answer 2.a.



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

- b.) A packed bubble chart of the same type

Answer 2.b.



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

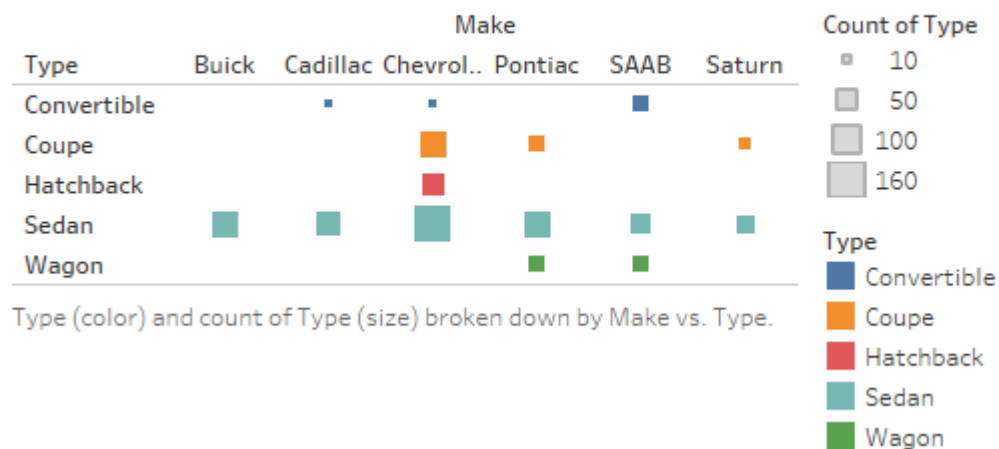
c.) ... short paragraph discussing the differences between the two plots.

Answer c.)

The Tree map uses a gradient of blue, or “Color Luminance” to indicate the total Price of each Make and Model. A closer look also shows that the Tree map uses dark lines for Containment, to separate or organize the map by Make. Within that containment, the Models are then displayed by their Price in decreasing value using the blue gradient, with the darker the blue the more the Price and the lighter the blue the less the Price. The Bubble chart uses several colors to classify the Makes. The larger bubbles indicate a higher Price, whereas smaller bubbles indicate lower Price. With the exception of the Saab cars, the bubbles are groups together by their color. What I don’t understand is why there are two Saab values at the bottom of the chart, when they could be grouped with the Saab bubbles located in the upper-right of the chart.

d.) Create a contingency plot...

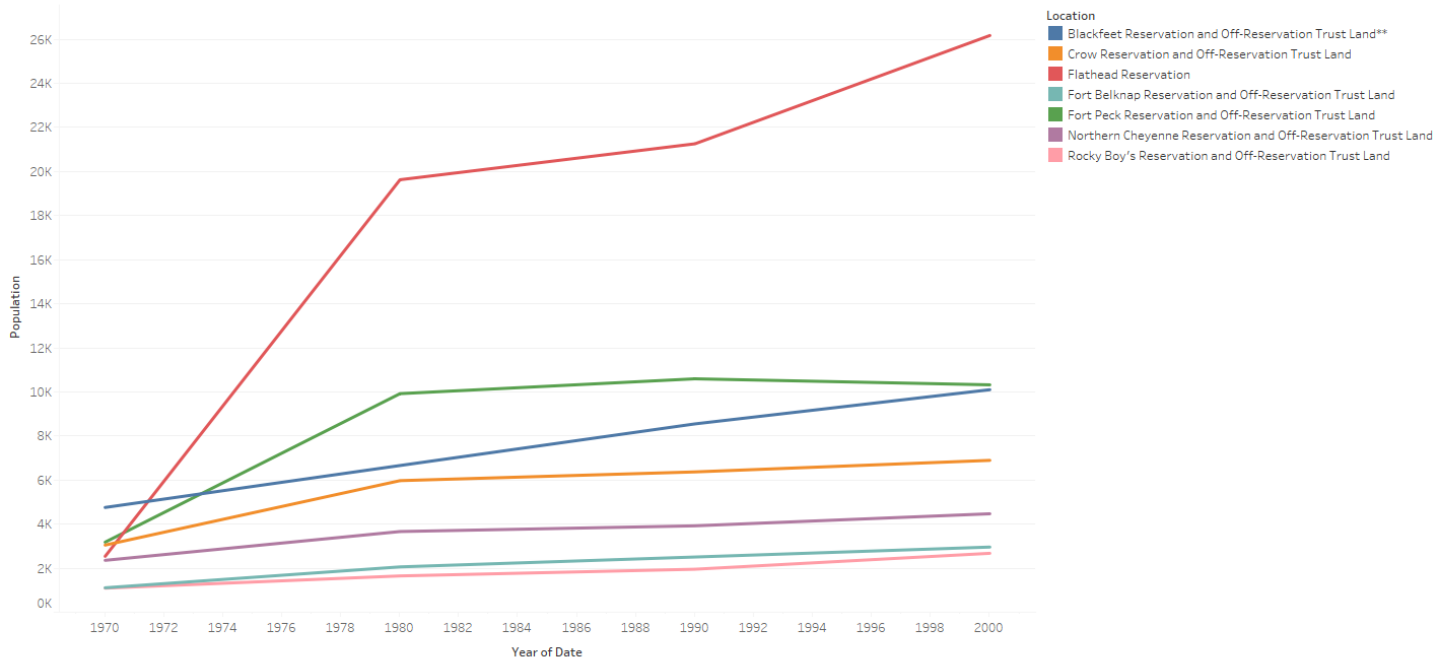
Answer 2.d.



Problem 3.)

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

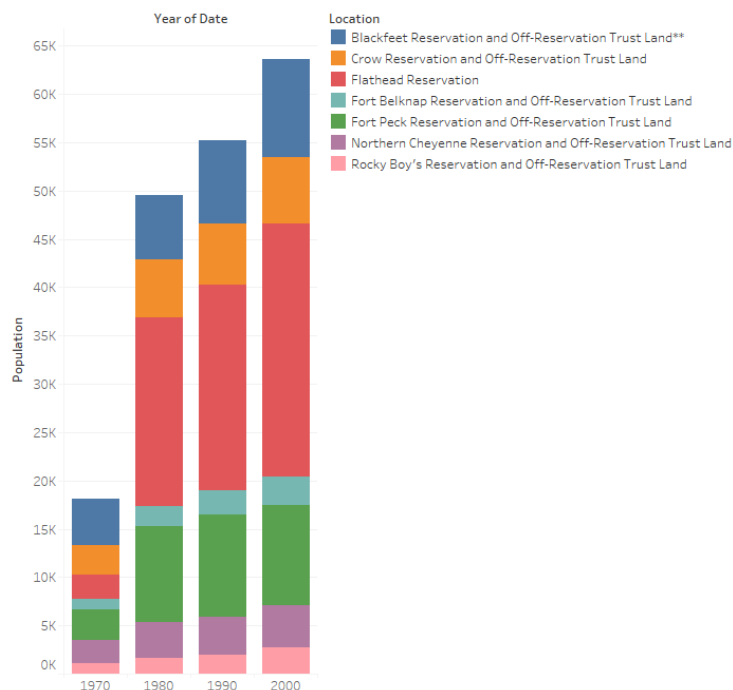
Answer 3.a.



The trend of sum of Population for Date Year. Color shows details about Location. The view is filtered on Location, which excludes Montana.

b.) ... graphs the total reservation population for each year, subdivided among the different reservations.

Answer 3.b.



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

Problem 4.)

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

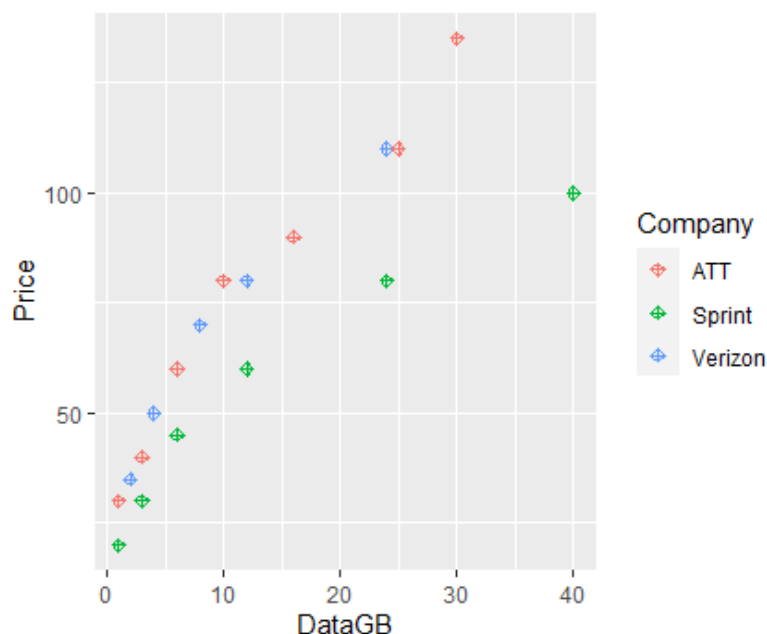
Ans.) “Pre-attentive” attributes is considered the information in a visual representation that can be processed directly or quickly by the user. They are attributes that immediately “Pop Out” to us. Are they more effective in combinations? The answer really depends on the attributes being used and if they have been “successfully” tested with users. It is possible that some attributes will immediately pop-up more than others.

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

Ans.) Weber’s Law tells us that “human perception works by percentage increase”. Including a zero in the axis of a bar chart gives the user a baseline or starting point for which to measure the data being graphed via the bar chart. That starting point allows the user to interpret the incremental increases on the chart.

Problem 5.) Graphs of cell phone pricing plans:

The following graph is a plot that allows the user to view each cell company’s price per data plan. The data points are indicated by “Diamond” glyphs which are color coded for each company, per the legend. This graph also allows the user to see and compare the “trend” of “more data more cost” and allows the user to compare which company has the best price for data. This graph should answer the question of “Which company offers the best price for the largest data plan?”



The following graph demonstrates how the cost of each cell plan by the amount of data offered in the plan. The glyphs are “Squares” that are shaded blue to indicate the cost of the plan, per the legend. This graph allows the user to see that the larger the data plan the more expensive that plan is. The color coding also allows the user to easily compare the costs between the companies. This graph should answer the question of “What is the cost per data plan for each company”?

