For the first half of this week’s discussion board, I wanted to look into stem and leaf charts and their story in how they came to be and the possible limitations. First, what does it even look like? A quick explanation is that it is two columns separated by a vertical line. The left column contains the stems and the right column contains the leaves.

When it comes to the origin of these plots, there were developed by Arthur Bowley in the 1900s throughout the process of exploratory data analysis. One of the big reasons that they become popular was because of how they appeared visually. It allowed technology at the time to be able to easily produce the graphics. (2020) However, as computers began to evolve and become more powerful, the graphics were used less and less. Now, how does one use or even create one of these plots?

I was able to come across a great example that shows the simplicity that is involved within these plots. (2020) Let’s say we have a list of numbers:

12, 24, 17, 18, 24, 16, 26

The first step would be split the values by the tens digits and then order them from smallest to largest.

12, 16, 17, 18 & 22, 24, 24, 26

Next, you would take the tens digit away from each of the groups and place this digit in from of them with a separator between them.

1 | 2, 6, 7, 8

2 | 2, 4, 4, 6

The 1 and 2 values are the stems while the following digits are the leaves for the plot. With these plots, they can used to show the range of scores for either tests or games. It allows for someone to see the range of values. Even though this can be done, a limitation to these plots is that they cannot handle large amounts of data. The range is typically from 15 to 150 data points. (Stephanie, 2018)

Moving away from stem and leaf plots, we can also look at the differences between certain types of plots. For example, what are the key differences between histograms and bar plots? Upon first sight of them both, they can look very similar; however, the grammar between them are not similar. Author Naomi Robbins states that the key difference between these two visuals is that histograms are used to show distributions of variables while bar charts are used to compare variables. Also, that histograms plot quantitative data with ranges of the data grouped into bins while bar charts plot categorical data. Equipped with this information, you can begin to see these differences upon visualizing these plots. At the same time, you realize that histograms do not contain any spaces between the groups while bar charts will contain these spaces to allow for more comparisons to occur for the audience. (Robbins, 2019) With histograms all of the bars also do not need to be the same width since some bins will contain only a few values or several values, but a bar chart will be consistent across all of the values.

Reference:

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Robbins, N. (2012, January 09). A Histogram is NOT a Bar Chart. Retrieved July 13, 2020, from <https://www.forbes.com/sites/naomirobbins/2012/01/04/a-histogram-is-not-a-bar-chart/>

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