HOMEWORK 2

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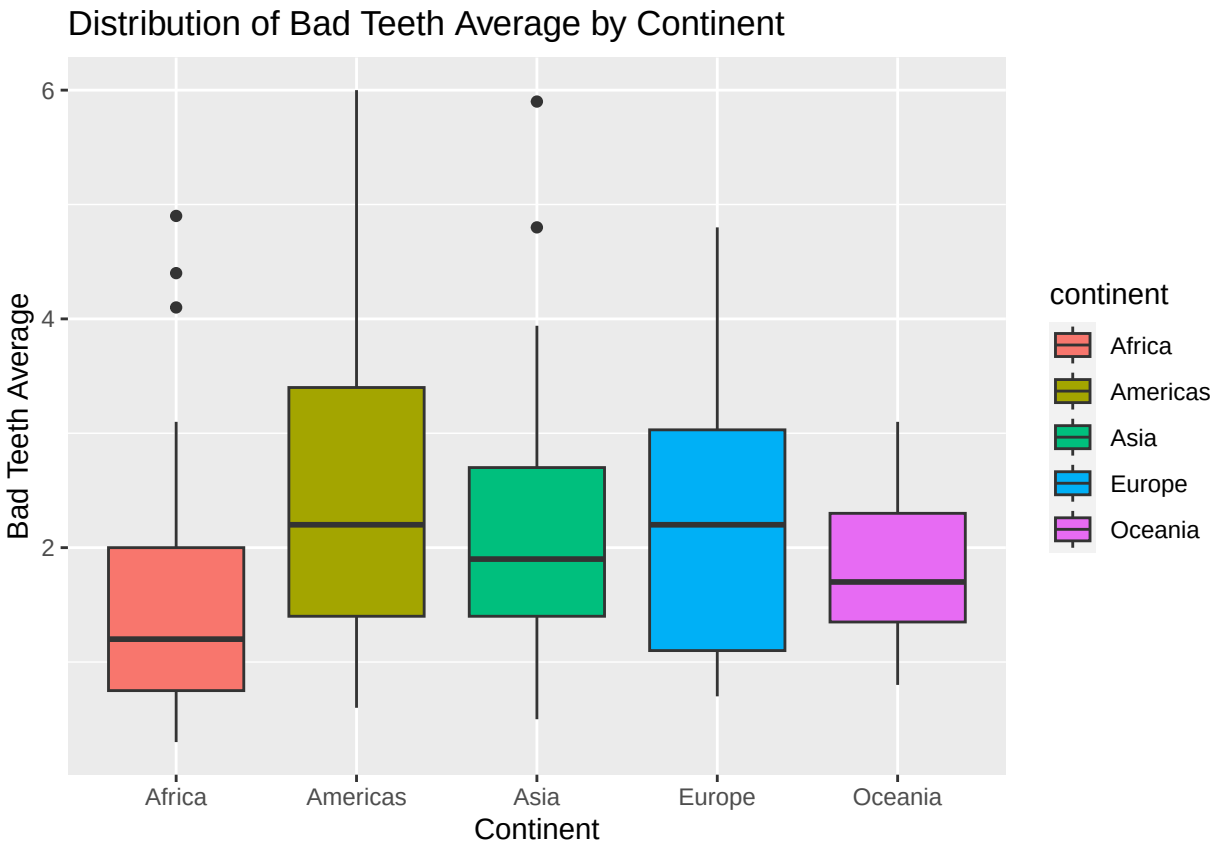
Box Plot



"Figure1: This plot shows the distribution of bad teeth average by continent in the year 2003. The plot is a box plot, where each box represents the distribution of bad teeth average for a specific continent."

I chose the box plot for this data because it clearly represents the distribution of the bad teeth average for each continent. The boxes show the median, first and third quartiles, and the range of the data. Using color (fill) to represent each continent also aids in quickly distinguishing between the distributions of different continents. The plot is easy to interpret and understand in terms of aesthetics and cognition. A horizontal axis for the categorical variable (continent) is preferred over a vertical axis because it minimizes the need to rotate the head or tilt the plot. The y-axis is scaled to accommodate the data's range, and using a descriptive label for each axis ensures that the plot is self-explanatory. Overall, the plot effectively visualizes the distribution of bad teeth average by continent in 2003.

Bar Plot 1

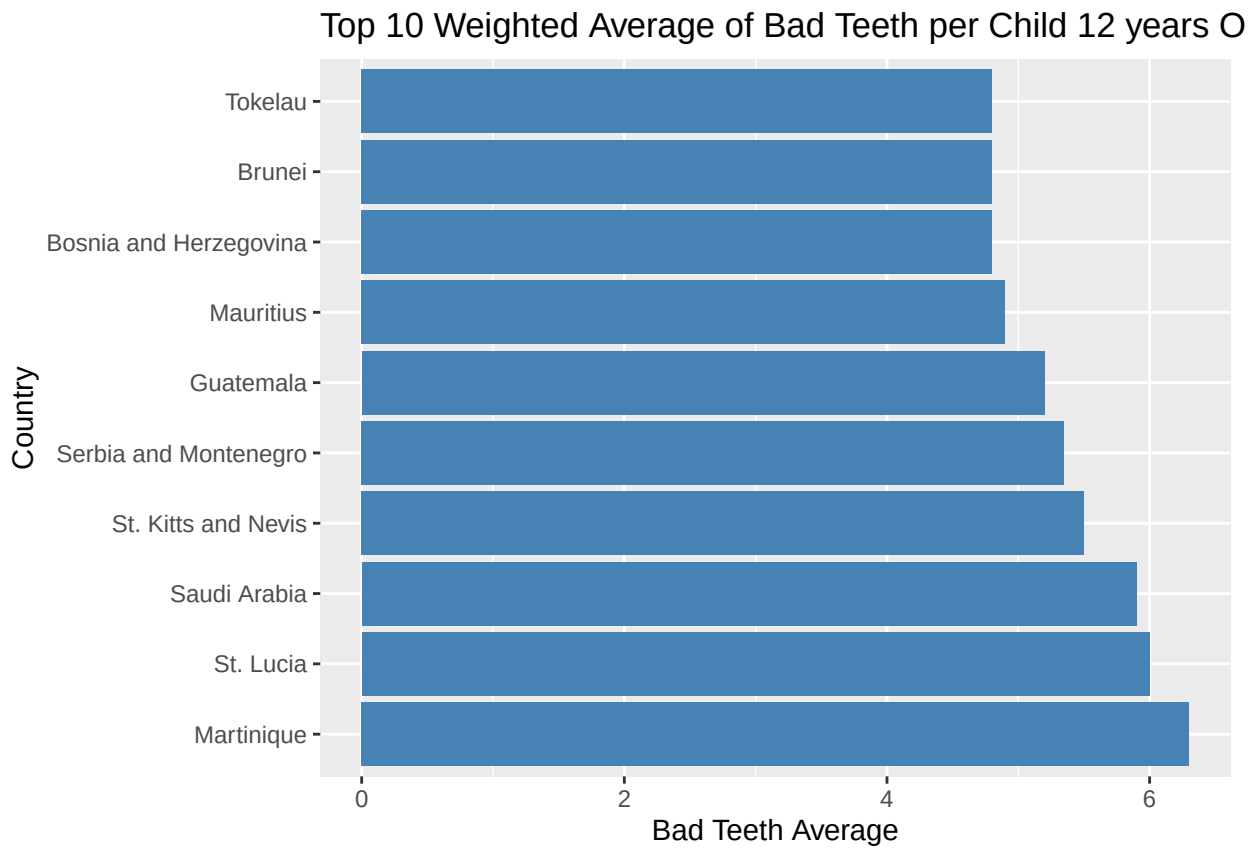


Figure 2: Top 10 Countries with the Highest Weighted Average of Bad Teeth per Child in 2003. The chart shows the countries sorted by the bad teeth average in descending order. Martinique has the highest average of bad teeth per child, followed by St. Lucia and Saudi Arabia. The blue color palette represents the severity of the problem. The x-axis shows the weighted average of bad teeth, and the y-axis shows the country names

Bar Plot 2

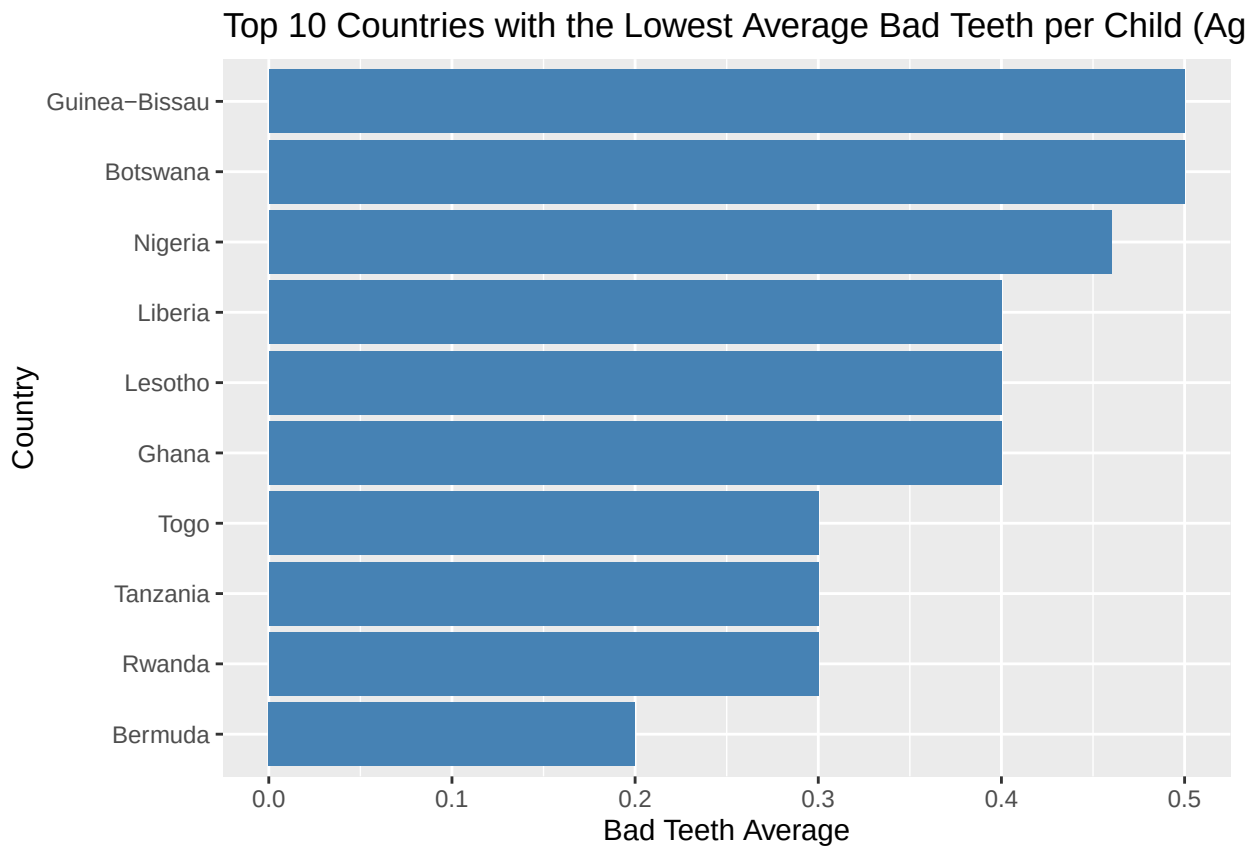


Figure 3: Top 10 Countries with the Lowest Weighted Average of Bad Teeth per Child in 2003. The chart shows the countries sorted by the bad teeth average in ascending order. Bermuda has the lowest average of bad teeth per child, followed by Rwanda and Tanzania. The green color palette represents the success in reducing the problem. The x-axis shows the weighted average of bad teeth, and the y-axis shows the country names

I chose a bar chart to visualize the bad teeth averages by top countries because it effectively compares the magnitude of a numerical variable (i.e., bad teeth average) across different categories (i.e., countries). The length of the bars in the chart visually represents the magnitude of the bad teeth average, making it easy to compare the values across different categories. In addition, ordering the categories (i.e., countries) based on the magnitude of the bad teeth average enhances the contrast between the values, making it easier for the viewer to distinguish between the countries with the highest and lowest values.

I also used a color (steel blue) to fill the charts' bars, making them more aesthetically pleasing and helping to distinguish between them. Using a light color (steel blue) for the bars and a dark color (black) for the text on the chart is an excellent example of using good color contrast to enhance the chart's readability.

Overall, a bar chart effectively shows the bad teeth average by top countries, providing a clear and easy-to-understand way to compare the values across the countries.

Scatter Plot

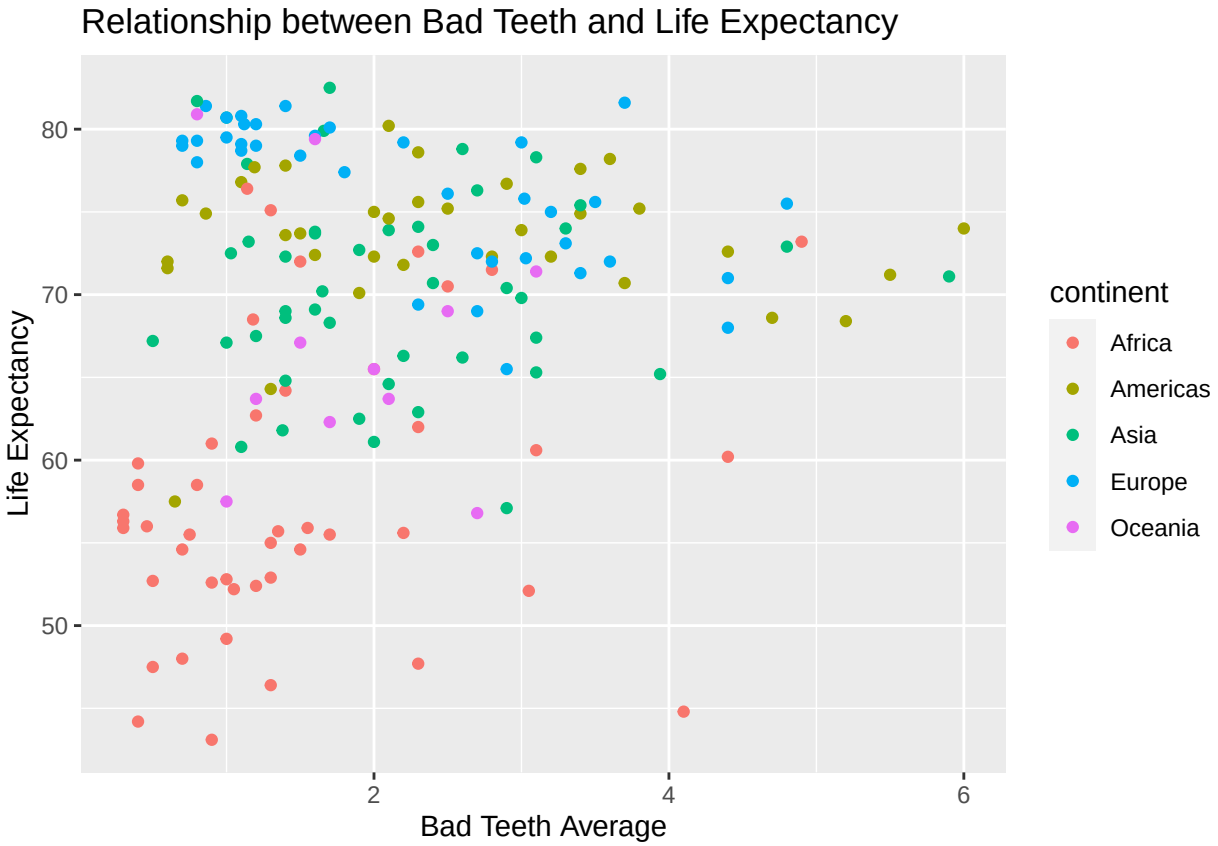


Figure 5:This scatterplot shows the relationship between bad teeth average and life expectancy for different continents in the year 2003.

I chose a scatterplot for this visualization because it effectively shows the relationship between two continuous variables, bad teeth average and life expectancy, using a point to represent each country. Additionally, using color to represent the different continents allows for comparing these variables across different groups.

Regarding aesthetics and cognition, color effectively draws attention to the differences between the continents. Therefore, it facilitates the comparison of bad teeth average and life expectancy across these groups. In addition, using clear labels for the x and y-axis and the title helps convey the visualization's message to the audience. Overall, this plot clearly and concisely represents the relationship between bad teeth and life expectancy while highlighting the differences across different continents.