Week 11 Practice

Elena Leib & Willa Voorhies

This week, you will be creating some of your own functions.

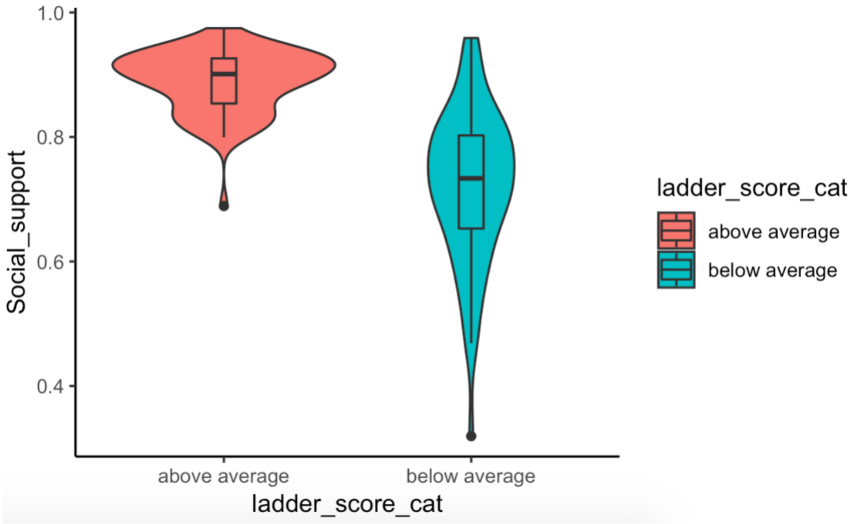
1. Create your own version of the sum() function. It should take as input a vector of numbers of any length and return the sum of those numbers.

   Test your function on the following three vectors:

   ```
   test_case1 <- c(1, 4, 5)
   test_case2 <- c(-1, -4, 0)
   test_case3 <- c(1.5, 2.8, 3, 4.77, 5.66)
   ```

Questions 2-5 use data from the World Happiness Report. Make sure to load this dataset and the tidyverse library at the top of your script if don't already have it loaded!

2. Make the following violin plot from the happiness data



3. Use the same plot format as above but replace Social Support with each of the following measures:
   a. Logged_GDP_per_capita
   b. Healthy_life_expectancy
   c. Freedom_to_make_life_choices
   d. Generosity

Tip: You might find the get() function helpful. get() will let you pass a variable of type string to a ggplot mapping variable.

Eg.

```
y_axis <- “Social_support”
ggplot(df, aes(.., y = get(y_axis) )
```

4. Now generate a function that creates a scatter plot of any two continuous variables. Your plot should include a regression line. Use your code to explore the following relationships in the happiness data:
    a. Perceptions of corruption and Generosity
    b. Ladder Score and Population
    c. Healthy Life expectancy and Social Support

5. Modify your function to add some extra features and flexibility to the plots you created in Q4.
    a. Allow the user to specify the axis labels.
    b. Include an optional argument that lets the user remove the gray standard error around the regression line. The default for this argument should be `TRUE`.
    c. Include an optional argument to let the user set the color of the points on the scatter plot. The default can be a color of your choice.
    d. Add any additional customizations of your choosing.