Exercise – Data Frames

Answer the following questions with R code by creating (*and editing if you make a mistake*) an R script and iteratively running the code in RStudio.

1. Load the data in the **RuffeBio.xlsx** file into a data frame in R.
2. How many variables are in this data frame? How many individuals/observations?
3. Specifically, what is the name of the first variable
4. Show all variables for the fifth individual.
5. Show all variables for the fifth and seventh individuals.
6. Show the total lengths for all individuals.
7. Show ONLY the total length for the seventeenth individual.
8. Show ONLY the total length for the fifth and seventeenth individuals.
9. For each situation below, create a new data frame (from the original) and record how many fish are in that data frame.
   (a) Just female ruffe.
   (b) Just ruffe greater than 110 mm.
   (c) Just ruffe between 80 and 110 mm.
   (d) Excluding all fish of an "unknown" sex.
10. Create new variables in the original data frame for the following situations.
    (a) Natural log of length and weight.
    (b) Length categories that are 10-mm wide.
    (c) Fulton's condition factor (The weight of the fish divided by the cubed length of the fish multiplied by 10000).
11. If you have time ...
    (a) Show the length frequency table by sex.
    (b) Create a length variable that is the total length in inches.
    (c) Create a subset of just male ruffe with a total length less than 100 mm.
    (d) What is the *tl* for all but the 10th individual?
    (e) Show all recorded information for the 11th individual.