Please answer all of the questions below with good, complete sentences that refer to figures and tables as appropriate. Note that you will need to filter the data (using `filterD()` in R) for several of questions 1-6. Make sure to include a COMPLETE R code appendix that should run without error if I attempt to run your code.

This is due by 2200 on Friday 14-July. From 9-July to 15-Jul, I will only have internet access on the evening of Wednesday 12-July. Thus, I encourage you to try to have the bulk of this done by that Wednesday so that you can ask me any clarifying of helping questions.

The data in **Inch17_Lengths.xlsx** contains the total length (inches) of every fish caught on Inch Lake in 2017. Specifically, the file contains a unique net identification number (`netID`), gear used (`netType`; fyke, seine, angling), sampling date, `species` captured, and total length of the fish (`tl`). Load these data into R and use them to answer the following questions.

1. Perform a thorough univariate EDA for the lengths of *Largemouth Bass captured via angling*.
2. Perform a thorough univariate EDA for the lengths of *Bluntnose Minnows*.
3. Perform a thorough univariate EDA for the frequency of fish (all fish, not separated by species) caught with each type of gear.

The data in **Inch17_Biological.xlsx** contains the total lengths (inches) and weights (grams) for all fish caught on Inch Lake in 2017 for which weights were recorded. Specifically, the file contains a unique fish identification number (`fishID`), gear used (`netType`; fyke, seine, angling), sampling date, `species` captured, and total length (`tl`), and weight (`w`) of the fish. Load these data into R and use them to answer the following questions.

4. Perform a bivariate EDA for the weights and lengths of *all Bluegill captured*.
5. Answer the following questions from appropriate frequency and percentage tables using species and gear used.
    a. What percentage of those fish captured via angling were Largemouth Bass?
    b. What percentage of Bluegill were captured in the fyke nets?
    c. What percentage of Iowa Darters were captured in the fyke nets?
    d. What percentage of all fish captured were Bluntnose Minnows captured in seines?

6. Suppose that it is know that the number of Sea Lamprey caught in a lamprey trap during the peak spawning run is normally distributed with a mean of 80 fish and a standard deviation of 15 fish. Use this information to answer the following questions.
    a. What type of variable is number of lamprey caught in a trap?
    b. What type of variability describes the fact that you are unlikely to catch the same number of lamprey in two different traps?
    c. What percentage of traps will have more than 100 lamprey?
    d. What is the catch of lamprey such that 30% of traps catch fewer lamprey?
    e. What is the most common 80% of lamprey catches?
    f. What percentage of traps catch between 50 and 120 lamprey?

7. A fisheries scientist wanted to determine the effect of two different methods (capturing a digital image or observing the raw otolith through a microscope) and three technicians (Mason, Callie, and Logan) on the amount of time it takes to estimate the age of Rock Bass from otoliths. A total of 120 otoliths were evenly split between the three technicians. The technicians then examined half of their otoliths through the microscope eyepiece and the other half by capturing a digital image and then examining that image on a computer screen. The total time required to estimate an age was recorded by each technician using each method. Use this information to answer the following questions.
    a. What is the response variable?
    b. What is/are the factor(s)?
    c. What is/are the levels?
    d. How many treatments are there?
    e. How many replicates are there?
    f. Which otoliths would you (Mason) look at under the microscope and by digital image? Assume that the 120 otoliths were sequentially numbered from 1 to 120.