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| Standard/Proficiency | Prior | Adjusted |
| Data Reshaping Exceeds | Can transition data between data frames and lists, and explain the applications of data in a list format. | Can use lists as stores of arbitrary data structures, and subset/combine the data held within them. For example, can use a list to store iteration output, then later combine them. |
| Data Aggregation & Subsetting Exceeds | Can split or merge data sets using either SQL-like calls or approximate matching. | Can split or merge data sets using either SQL-like calls (such as the x\_join() series of functions) or approximate string matching. |
| Functions Exceeds | Creates complex functions that can handle arbitrary input. Includes built in error checking and warnings. | Created functions include conditionals and error checking to test for faulty data and describe the issue. Functions can intake multiple forms of data and handle both appropriately. For an example, see the “Make it Flex” section of Lab 5. |
| Visualization Structure Exceeds | Effectively mixes visualization formats or isolates individual elements to clearly communicate a message. | Effectively mixes visualization formats or isolates individual elements to clearly communicate a message. For example, including a miniature table of the most important values within a bar plot. |
| Data Ethics Meets | Reads data documentation to understand data collection/generation and measurements. Can highlight potential concerns specific to the data or project. | Reads data documentation to understand data collection/generation and measurements. Can highlight and explain to readers the potential concerns specific to the data or project. |
| Code Style Meets | Consistently comments all code with clearly organized sections. Expected inputs and outputs are clearly explained. Uses error messages or print statements within their code to locate the causes of errors and resolve them. | Makes use of the built-in section headings in R Studio. For user created functions, the inputs and outputs are clearly explained, and examples are provided. |
|  | Code is clearly commented, with standardized formatting and indentation. Code contains tests which will check for errors, and report those errors if they arise. | Includes “sanity checks” for data validity in code. For longer scripts or iterations includes print statements to track execution progress. |