Assignment 10: Graph Editing

40 Points scaled to 20 Points

Introduction

The last three assignments focused on making simple graphs. In this exercise, you will now clean up some of the graphs created in the prior assignments plus produce a graph using data of your own choosing. The goal is to generate polished graphs that are ready to be shared with others.

Objectives

- *Use a variety of graphical parameters to visualize and compare variables*
- *Generate effective and informative graphics*
- *Edit graphs for sharing with others or for publication*

Deliverables

- *Jupyter Notebook (Python) or R Markdown file (R) with all code and graphs embedded. Files can be rendered to HTML webpages if your instructor requires this. Graph prompts should be stated within Markdown cells.*

Tasks

This assignment can be conducted using either Python (matplotlib, seaborn, and pandas) or R (ggplot2), whichever you prefer or whichever you instructor requires.

Graphs 1-3. Pick three of the graphs you created in the prior three exercise. Clean up these graphs to share with others or for publication. The final results should be polished and professional. For each graph, also include a figure caption to further explain the graph. Feel free to also further edit the graphs outside of code using a vector graphics editing software (e.g., Inkscape or Adobe Illustrator). Each graph and caption combination will be graded out of 10 points based on the following criteria.

1. Appropriate use of color, symbols, and positioning within the graph space.

2. You must define your own colors and/or symbols to use within the code.

3. Formatting of axes and associated labels. You must manually define axes labels.

4. Axes scaling, limits, tick mark interval, and tick mark labeling. These should be manually defined.

5. Legend design. Make sure the legend is interpretable. Don't just use the default field names if they are not meaningful. Not all graphs will have or need a legend.

6. Use of space and positioning. Try to avoid overcrowding elements but also make use of the available space.

7. Interpretability and noting of measurement units. The figure and the associated caption should be stand-alone and not require additional information or text to explain them.

Graph 4: Create a new graph using your own data or data not used in this course. It will be graded out of 10 points using the same criteria noted above for the first three graphs. Also include a caption and make sure to cite the data source in the caption.