Homework 5: Making Your Own ggplot

GSND 5345Q, Fundamentals of Data Science

Multiple Due Dates (Video: Sun 2/23; Comments/write-up: Wed 2/26)

Objective

Demonstrate your understanding of data visualization principles by creating an informative and well-annotated plot using `ggplot` in R. You will present your plot in a recorded video and engage with your peers by providing constructive feedback on their visualizations.

Instructions

1. Find a Dataset

Choose one of the following:
- A dataset provided in class.
- A dataset from your own research or work experience.
- A publicly available dataset from a credible source (Kaggle, government databases, academic repositories).

2. Create an R Markdown Report (50 points)

- Use `ggplot2` to create **at least one** well-designed and well-annotated plot (or multiple plots) that meaningfully describe your dataset.
- Apply best practices in data visualization, such as:
  - Choosing an appropriate plot type for your data.
  - Using clear labels, titles, and legends.
  - Selecting effective color schemes.
  - Showing the data in a way that avoids misleading interpretations.
  - Encoding three or more variables when possible.
- Provide a short written explanation of your plot, addressing:
  - What the plot shows and why it's appropriate for your data.
  - Which visualization principles were applied.
  - Any design choices made to improve readability or clarity.
- Include your **fully reproducible code** in an R Markdown (`.Rmd`) file.

3. Video Presentation (50 points)

- Record a **3-5-minute video** explaining your visualization.

- Your video should include:
  - A brief introduction to your dataset.
  - A walkthrough of your plot(s), describing the insights they reveal.
  - An overview of the code used to generate the plot.
  - A discussion of the **data visualization principles applied** in your work.
- Post your video in the Chat section on Canvas no later than **11:59 PM on Sunday, 2/23**.

4. Peer Review (50 points)

- Watch **at least five** of your classmates' videos.
- Provide **thoughtful and constructive comments** on each, focusing on:
  - Strengths of their plot design and presentation.
  - Suggestions for improvement (if applicable).
- Document your comments in your `.Rmd` file (include the names of the videos you reviewed).
- Submit the updated `.Rmd` file with your own plot code/comments and your peer review comments on Canvas no later than **11:59 PM on Wednesday, 2/26**.

Grading Breakdown

Category	Points
Well-designed ggplot with clear annotations and applied principles	50
Video presentation with clear explanation and visualization discussion	50
Peer review with meaningful feedback on five classmates' videos	50
Total	**150**

Additional Notes

- Ensure your plots and video are accessible and understandable to someone unfamiliar with your dataset.
- Be concise but thorough in your explanations.
- Use proper formatting and grammar in your `.Rmd` file and comments.
- Engage respectfully and constructively in your peer reviews.

Happy plotting!