Team Final Project: Data Storytelling and Visualization Challenge

Overview

This capstone project is a culmination of your learning in *Applied Data Visualization and Storytelling*. In teams of 4 - 7 people, you will identify a real-world dataset, extract insights, and craft a compelling data-driven narrative. Your goal is to design an effective visualization that communicates key findings to a specific audience, considering best practices in storytelling, visual encoding, color theory, and data ethics.

Project Scope

Each team will choose a dataset of interest—this could be sourced from public repositories (e.g., government data, open research, business reports – I will add on Canvas a few options but feel free to look around on Kaggle or use one of the resources I have provided in the past for other assignments) or be a dataset of your own collection. Your team will then frame a problem or key question or a suggestion/proposal, analyze the data, and develop a narrative that presents meaningful insights. The final product should be a polished visualization or dashboard accompanied by an explanation of design choices.

Project Deliverables

Your team will submit:

1. **Project Proposal (1-2 pages)**
    - Summary of the dataset and its relevance to the problem/question/suggestion
    - Research question or problem statement or suggestion - proposal
    - Intended audience and how the story will be framed
    - Initial ideas on visualization types and tools (you may include plots that you didn't end up using, tools you decided to use or not use followed by a brief explanation.
2. **Data Analysis and Exploration**
    - Summary of data cleaning and transformation
    - Key insights from exploratory analysis
    - Justification of any data exclusions or assumptions if any
3. **Final Visualizations and Story**
    - A primary visualization or dashboard that effectively communicates insights
    - Supporting charts or graphics as needed
    - A 1-2 page written or slide-based narrative explaining the visualization
    - Explanation of design choices (e.g., colors, typography, chart types, interactivity)
4. **Presentation (15 minutes per team, structured in two parts)**

First Half (7-8 minutes): Presenting to the Intended Audience

- Your team will present the data story as if speaking directly to the intended audience.
- This should be engaging, clear, and focused on the insights that matter to that group.
- Avoid jargon if presenting to a non-technical audience; incorporate deeper analysis if speaking to experts.

Second Half (7-8 minutes): Justifying Design and Storytelling Choices

- Explain why you structured the narrative the way you did (e.g., did you follow a classic storytelling arc like Campbell's Hero's Journey?).
- Discuss how you applied **preattentive attributes** to enhance clarity.
- Justify **color choices, typography, and layout**—how do they support the message?
- Describe how your **visualization design aligns with cognitive principles** for effective storytelling.
- Explain any specific **design improvements you made based on iteration or feedback**.

Assessment Criteria

Your project will be evaluated on the following:

- **Clarity of Narrative (20%)** – How well does your story engage the audience and communicate insights?
- **Effectiveness of Visualization (25%)** – Are your visual choices appropriate and easy to interpret?
- **Data Accuracy and Analysis (20%)** – Is your analysis sound and well-supported by data?
- **Design and Aesthetic Quality (15%)** – Are your color choices, typography, and layout effective?
- **Presentation and Justification (20%)** – How well does your team explain and defend its choices?

Final grading:

50% of the total grade for this assignment will come from peer review, and the remaining 50% will be the instructor's evaluation. Both will be done using the assessment criteria.

Guidelines and Expectations

- You may use **Tableau, Power BI, Python (Matplotlib/Seaborn/Plotly), R (ggplot2), D3.js**, or another tool of your choice.

- Ensure ethical use of data, including proper sourcing and avoiding misleading representations.
- Keep the audience in mind—your visualization should be engaging yet easy to interpret.
- Collaboration is key! Teams are expected to distribute work equitably and communicate effectively.