Team Poster and Product Pitch Project

CSC3107: Information Visualization

AUTHOR
Michael T. Gastner

The Information Visualization course culminates in a team project designed to showcase practical skills acquired throughout the term, including data cleaning, transformation, effective communication through visualization, and a short "product pitch." Teams, consisting of 5 to 7 students, will address a real-world visualization problem by critiquing, reconstructing, and improving a published example of data visualization. They will present both the improved visualization and a brief product pitch during the last lab session of the term.

Learning Objectives

- Demonstrate mastery of the technical skills acquired throughout the course.
- Manage a data visualization project from inception to completion.
- Evaluate and critique data visualization.
- Choose appropriate tools and techniques, showcasing an understanding of available resources.
- Apply critical and creative thinking when analyzing and visualizing data.
- Document data and code to ensure clarity and reproducibility.
- Present information professionally as a poster, both in written and oral form.
- Pitch the improved visualization to a specific audience, emphasizing its real-world value.
- Collaborate effectively in a team.

Tasks

1. **Critical Analysis:**

   a. Choose a published, thought-provoking example of data visualization from news media.
   b. Ensure that the chosen visualization is sufficiently complex to allow ample opportunities for applying the skills learned in the course.
   c. Critically analyze the strengths and weaknesses of the selected visualization.
   d. Discuss your findings and seek feedback from both your classmates and the instructors.

2. **Data Preparation:**

a. Gather relevant data to support your visualization project.
b. Clearly document the data sources and all steps taken for data cleaning and transformation.
c. You may choose to replace the data set used in the original article with another related data set, but demonstrate the relevance of the data to your chosen visualization.
d. Document the computer code used for data cleaning and transformation to ensure reproducibility.

3. **Data Visualization:**

a. Beyond merely reconstructing the original visualization, creatively apply the techniques learned in the course to improve it.
b. The outcome should effectively communicate the data and be aesthetically pleasing.
c. Apply a grammar-of-graphics approach to construct the visualization.
d. Document the code used to produce the improved plot.

4. **Poster Presentation and Product Pitch:**

Create a poster that includes the following elements:

○ Introduce and display the original visualization, crediting its source.

○ Include a critique of the original visualization, suggesting improvements.

○ Present the improved visualization.

○ Describe the data used for constructing the improved visualization and state their source.

○ Provide succinct technical information about the tools used for the project.

○ Include a short "Use Case & Pitch" section that explains:

- Who the "product" (i.e., your improved visualization) is for (e.g., policymakers, editorial board, marketing executives).
- Why the improved visualization solves a real problem or addresses a specific need.
- How it provides tangible or intangible benefits to its target audience (e.g., better decisions, increased trust, clearer storytelling).

Other Formats
W MS Word

In the final lab of the trimester, each team will be given 10 minutes to present their poster to the class orally. Within this period, teams should deliver a concise 2–3 minute product pitch, focusing on the practical impact and advantages of their improved visualization. All team members need to take turns during the oral presentation. The presentation is followed by a 5-minute question-and-answer session.

Milestones and Deadlines

Week 5: Visualization Discussion

Each team will lead a 20-minute class discussion on their chosen example of data visualization from news media. The discussion should address the following questions:

1. What data are visualized?
2. What does the visualization aim to communicate?
3. What aspects of the visualization do you appreciate?
4. What aspects do you find problematic?
5. How can the visualization be improved?
6. Are the data publicly available, or are there suitable surrogate data?

The discussion will not be marked, but teams should incorporate feedback from classmates and instructors into their project delivery. As the discussion is intended to be conversational, the use of slide shows is discouraged.

If the instructors deem the proposed project unsuitable, the team will be assigned an alternative visualization.

Weeks 6 and 7: Sourcing and Cleaning Data

Teams are expected to source and clean the data required for the project. For reproducibility, the sourcing and cleaning processes should be documented in a Quarto Markdown (QMD) file, which should include the code used for data transformation.

Weeks 8: Consultation Sessions

The instructors will be available for consultation during the lab sessions in Week 8. Teams should provide feedback to the instructors on their progress, ask questions, and discuss any challenges they may be facing.

Week 9: Poster Presentation and Feedback

During the lab session in Week 9, teams will showcase their posters to their labmates and instructors. Students from other teams are asked to participate in the presentations and submit feedback to the instructors through a survey. Instructors will evaluate each team's presentation based on both class feedback and their own assessment, assigning a final mark for the project.

Deliverables

The following items should be compressed into a single ZIP file and uploaded to xSITe by **29th June 2025 (Sunday) 23:59 p.m.**

- **PPTX File:** A PowerPoint file containing the poster presentation.
- **Data:** Include the raw data used for constructing the improved visualization.
- **QMD File:** This file should reference the data source and provide the complete pipeline for the cleaning, transformation, and visualization of the data.
- **.Rproj File**
- **Additional Materials:** Any supplementary materials necessary to render the QMD files.

During the Week 9 lab session, each team will present their poster to the class. Remember to incorporate the 2–3 minute product pitch into your oral presentation. Participation is mandatory throughout the lab, as feedback on other teams' presentations will be part of the assessment.

Assessment

The project will be assessed based on the following criteria:

Criterion	Description	Weight (%)
Project motivation	- Information about the content, background, and significance of the data is communicated clearly. - The strengths and weaknesses of the original visualization are critically assessed. - Suggested changes to the original plot constitute improvements. - A suitable data source for the project work is presented, along with a succinct explanation of the raw data. - The project poses technical challenges commensurate with the course material.	10
Code quality	- The complete data transformation and visualization pipeline is included in the submitted files. - All auxiliary data files are included in the project submission to enable rendering the QMD file. - The code is free of logical errors. - The code is elegant, well-documented, and linted. - Conclusions are correctly drawn from the data.	20
	- The plot type is suitable for the data. - Any necessary data and coordinate transformations have been	

Data visualization produced by the team	implemented and clearly described. • Information in the plot is presented clearly and can be easily grasped. • The plot supports the written conclusions. • Legends, labels, titles, captions, and annotations are provided where necessary without cluttering the plot. • The solution showcases technical mastery and a creative application of the tools learned in this course. • The plot is aesthetically pleasing. • The changes suggested in the project proposal are implemented.	25
Poster & Pitch	• Poster content is accurate and professionally cited. • The steps from raw data to improved visualization are described clearly and succinctly. • The flow of information is coherent and logical. • Different sections are clearly delineated (e.g., introduction, original visualization, improved visualization, data, tools, product pitch). • The pitch is directed at a specific audience (e.g., editorial board, policy committee, marketing team). • The pitch effectively demonstrates why the improved visualization is valuable (e.g., it clarifies trends, avoids misinterpretation, influences decisions). • The quality of written English is high. • The visual layout of the poster is appealing and easy to navigate. • Font size and style are appropriate and legible from a distance.	25
Oral presentation	• Speakers maintain eye contact with the audience and refrain from reading text from their mobile phones. • The presentation is well-rehearsed, with all team members contributing effectively. • The significance of the data and the project is communicated clearly. • The product pitch is persuasive, succinct, and targeted to the intended audience. • The quality of spoken English is high. • The time limit is adhered to. • Questions from the audience are answered competently and effectively.	15
Feedback and attendance	• All teammates need to be present during their allotted lab sessions and provide feedback on posters and presentations by other teams.	5