CSC/SDS 109: Communicating with Data

Fall 2024

Mid Semester Project: Physical Visualizations & Smithies

This is a full class assignment, but we'll have roles to make it manageable and practice working with a large group.

Goals:

- Shift thinking from computer-based visualization to physical visualization
- Design a visualization guided by the tenants of Data Humanism

Instructions

For this midsemester project you will work together as a class to create a physical data visualization designed with the tenants of Data Humanism in mind. We will share the physical visualization with the Smith campus on Project Release Day (see course schedule).

Because the timing is *perfect* the medium we will work with to create the physical visualization will be carved pumpkins.

To help organize the work, we will have project roles. You can sign up for whichever project roles best suit you (details below). In addition, the project will be broken up into milestones to keep everyone on track. Each milestone is outline below.

Milestone 1: Ideation

- Start in class 10/17
- Complete before class 10/22

Ab will be at a conference on 10/17. Instead of lecture, you will use class time to generate ideas for the physical visualization the class will create.

This is the brainstorming phase; no idea is a bad idea!

Break into groups of ~5. With your group generate one, specific idea for a physical visualization that represents and engages the Smith Community. You will need to consider:

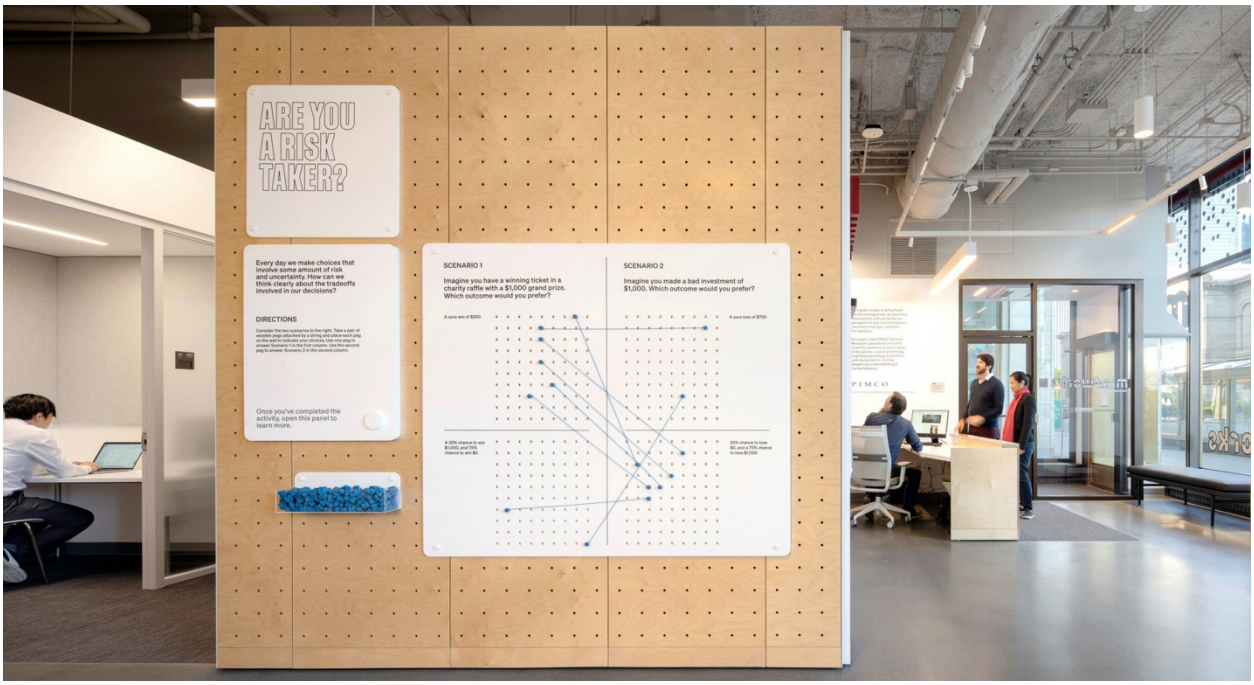
1. What do we want the impact of the visualization to be?
2. What data would we need?
3. What visual encoding would we use?

As you consider these points, keep in mind the ideas of Data Humanism—embrace complexity, move beyond standards, sneak context in, and remember data is imperfect. In addition, think about how you will cater your visualization to represent and engage the Smith community – Will it be interactive? How will it capture individuals and broader context?

For example, what if each pumpkin is carved with a glyph that visualizes a data portrait of an individual in the community?

What data would be interesting to visualize? Who would we need to collect data from? Could the arrangement of the carved pumpkins reveal larger patterns?

Or, what if pumpkins are carved to represent ranges/categories of different variables and viewers of the visualization are asked to add chalk marks, strings, or marbles as a mark representing where they fall within those variables?



What data would be interesting to visualize in this way? How will we choose the appropriate ranges/categories? Could the final visualization reveal larger patterns?

Be prepared to articulate your specific physical visualization idea to the class on 10/22. Computer or hand generated examples illustrating your idea will likely be helpful.

In addition, ***before class on 10/22***, sign up for the role you'd like to take for the remainder of the project. Roles, descriptions, and time commitments are listed here. (Note: roles are leadership positions needed to make this project work. Your participation in the project will extend beyond the role you choose).

Milestone 2: Design Finalization

- In class 10/22

In class, each brainstorming group will explain their visualization idea and answer any clarifying questions the class has. After each group gives their pitch, the class will choose which idea to pursue for the rest of the project by anonymous vote.

After a visualization is chosen, the visual encoding leads will guide finalization of the visual encoding.

Milestone 3: Data Collection

- Start in class 10/24
- Complete by end of day on 10/26

Data collection leads will share with the class an overview of what data will be collected and how. They will also delegate data collection to classmates.

The remainder of class will be time for students to start collecting data. All data must be collected by the end of the day on 10/26.

Milestone 4: Data Cleaning and Stencil Making

- Start in class 10/29
- Complete before class 10/31

Data cleaning leads will share the plan for data cleaning with the class. They will delegate data cleaning tasks to classmates and answer questions as needed.

Once data cleaning is complete, stencil leads will delegate stencil creation to classmates. They will answer questions and adjust the visual encoding as necessary.

Milestone 5: Carving and Release Day

- In class 10/31
- Evening of 10/31

Pumpkin carving will take place in class on 10/31.

In the evening, the full physical visualization will be displayed to the Smith Campus. Set-up leads and set-up extra hands will set up the physical visualization prior to sunset.

The visualization Q&A team will be present while the visualization is on display to answer questions from viewers.

Once the display is done (roughly 2 hours after sunset), clean-up leads and clean-up extra hands will break down the visualization and properly dispose of / return any supplies used.

Submission

Answer the project reflection prompts on Gradescope under the Mid-semester Project assignment.

Rubric

The following matches the rubric you will see on Gradescope.

	Missing / Not Complete (0)	Approaching (2)	Meets (4)	Exceeds (5)
Reflection	Not submitted or not readable.	Reflection addresses all questions on Gradescope, but answers are not thoughtful.	Reflection addresses all questions on Gradescope, but answers need more thought.	Reflection addresses all questions on Gradescope thoughtfully and clearly.
Role	Role responsibilities were not filled.	Completed some responsibilities of role.	Completed all responsibilities of role, but more forethought was needed.	Completed all responsibilities of role in an organized, well-planned manner.
Participation	No participation throughout the project.	Present but not engaged. Or absent without communication.	Present but not fully engaged for all in-class working time (or communicated absence ahead of time and made plans to still contribute).	Present and engaged for all in-class working time (or communicated absence ahead of time and made plans to still contribute).