

DATA 23700 Winter 2025

Exercise 7: Visualization Persuasion Game

Due February 28, 2023

In this exercise, students will form groups of 3-4 and play 4 rounds of a **visualization persuasion game**. The objective of the game is to communicate desired information about a dataset to your partners via visualizations without violating *rules about what information cannot be disclosed* (e.g., don't reveal a particular cluster).

Group members will rotate through roles of **senders** (2-3 at a time), who author visualizations subject to constraints, and **receiver** (1 at a time), who requests desired information. The senders must try to provide a *persuasive and trustworthy* response to the receiver's query. They must try to *avoid deception* in complying with rules about disclosure. The receiver must communicate their *information need* to the senders and choose among the senders' visualizations at the end of each round.

The game is meant to model the negotiation of data sharing in environments where **controlled disclosure** is required, such as would be the case in privacy-sensitive settings, when sharing information within a government agency across different levels of security clearance, or when protecting against the leak of intellectual property. Additionally, whether they realize it or not, data scientists often make decisions about information disclosure when summarizing data for others who do not have access to the dataset or who lack the skills and tools to work with data themselves.

The instructions for this exercise are spread across a handful of PDFs (in the folder `exercises/persuasion-game`), one for the roles of senders and receiver in each round of the game (2x4 files). **It is imperative that you do not peak at the instructions for the opposite role until the exercise is complete.** Full knowledge of your partner's goals would defeat the purpose of the exercise as a mock negotiation.

Student pairs should submit a log of their gameplay as a PDF document on Gradescope. This should include all visualizations prepared by each sender and all requests for information from the receiver typed out. Students should label their correspondence by name and role, so the log reads like a messaging application. Groups should separate rounds of the game by number (i.e., Rounds #1 – 4). Be sure to select all group members' names in Gradescope when submitting, so everyone who participated get credit for completing the exercise.

How to Play

Getting started: You will need both a *private channel* of communication with each other player (e.g., Slack, email), and a Google Doc to use as a *centralized log* of your group's interactions. *All communication during rounds of the game should happen in private channels and then get added to this Google Doc at the end of each round.* Communications include all visualizations and explanatory text produced by each sender, and all requests for information and follow-up questions from the receiver. The game log (Google Doc) your group stitches together from private communications should read as a transcript for each round of the game.

Try to keep unlogged conversations about the game to a minimum. The idea behind having private communications channels separate from the game log is that *senders should not collaborate*.

Playing a round:

1. Rotate the role of receiver. Everyone else is a sender this round.
2. Look up your objective for the round in the appropriately named file (e.g., `round1-senders.pdf`). Only look at the file for your role.
3. Receiver, pose an initial query to each sender in the group based on your objective. This initial message should probably be similar across all senders you communicate with. Make sure to express a request for information in your own words rather than copying your objective verbatim.
4. Senders, download the dataset for this round on the course website (e.g., `round1.csv`).
5. Senders, author an initial visualization in response to the receiver's query. Make sure not to violate the disclosure rules for this round. These visualizations should be quick summaries, unpolished but not confusing. You may supplement the visualization with a text message, no more than one paragraph. Share the visualization and text with the receiver in a *private channel*.
6. Receiver, reply to each sender in a *private channel* with a request for clarification or further information. If you're stumped about what to ask, think about what you would need to see in order to trust their answer more.
7. Senders, send a final visualization in response to the receiver's second query, again in a *private channel*. It can be an update of your previous visualization or one that supplements it. Again, you may share a text message to accompany your visualization.
8. Receiver, pull your private correspondence with each sender into the *game log* (Google Doc). It's important to do this as you go, since this is what your group will turn in. Now all senders can see each others' communications, since the round is ending.
9. Receiver, in the *game log* (Google Doc), rate your trust in each sender's responses on a scale from 1 (strongly distrust) to 5 (strongly trust). Choose a sender who you would prefer to hypothetically continue relying on for information. Ties are allowed but discouraged. Be sure to note your ratings and your choice in the game log.

Repeat the steps above for each round of the game. Everyone should be receiver at least once.