CSC/SDS 109: Communicating with Data

HW 03: Playing with Perception

This is a pair assignment! Individual submissions must be pre-approved.

Goals:

- Explore how perception can be leveraged to change a visualization

Instructions

Choose Data

Find a dataset of interest to you. You are free to use any dataset you want. You are encouraged (but not required) to branch out beyond the sample datasets posted to the course website. It is recommended that you use a clean dataset, i.e. one that is readily readable by Tableau.

Visualize Data

Create a visualization that communicates an interesting pattern in your dataset. Your visualization must:

1. Encode at least three variables
2. Encode at least one variable (of the 3) with a color channel (hue/saturation/luminance)
3. Adhere to design guidelines covered thus far

Modify your visualization's use of color (hue, saturation, or luminance) to intentionally mislead the viewer - that is, distract from the "point" you made in your first visualization (without changing the data or the structure of the visualization itself). The goal here is to **be subtle** and use perceptual tricks.

Modify your original visualization's use of another visual channel (not color) to intentionally mislead the viewer - that is, distract from the "point" you made in your first visualization (without changing the data or the structure of the visualization itself). The goal here is to **be subtle** and use perceptual tricks.

Test Your Work

Find a friend (preferably someone not in this course). You will show them each of your misleading visualizations, one at a time, and ask them what conclusions they draw. In both cases do not explain your visualization or interesting pattern; let your friend view and process the visualization themselves. Ask your friend to narrate their thinking process out loud as they read each visualization.

While your friend interacts with your visualization, take notes on what you observe. Specifically:

- What parts of the visualization are they looking at?
- What do they notice?
- What meaning do they make of what they see?

Afterwards, assess whether your deception was effective. If you were to do the assignment again, would you change your approach?

Deliverables

Use your visualizations and notes to answer the questions in the attached worksheet.

- A link to your dataset
- Screenshots of each visualization (three total, two deceptive)
- A document that contains:
    - An explanation of the interesting pattern your first visualization shows
    - An explanation of the perceptual trick in each deceptive visualization
    - Your observations from Part 2
    -

Submission

Submit your deliverable(s) as a PDF on Gradescope. If you worked with a partner, submit as a group (https://guides.gradescope.com/hc/en-us/articles/21863861823373-Adding-Group-Members-to-a-Submission).

Rubric

The following matches the rubric you will see on Gradescope.

	Points	Criteria
Visualization 1	0.5	PNG
	2	Description of interesting trend
	1.5	Encodes >= 3 variables
	1	One variable encoded with color channel
	2	Follows design guidelines
	0.5	Descriptive title
	0.5	Readable axis titles
	0.5	Readable axis labels
	0.5	Legend if necessary
Visualizations 2 & 3	0.5	PNG
	2	Subtle perceptual deception (color / other)
	2	Follows design guidelines
	0.5	Descriptive title
	0.5	Readable axis titles
	0.5	Readable axis labels
	0.5	Legend if necessary
	2	Friend observation notes
	2	Reflection on deception efficacy
TOTAL	30	

SDS/CSC 109 hw03 Worksheet

Fill out this worksheet for your three visualizations.

Visualization 1

Add your png.

Describe one interesting trend shown in the visualization.

Add your png.

Observation notes

Deception reflection

Add your png.

Observation notes

Deception reflection