CSE 512 - Data Visualization

A1 + Design Activity

Jeffrey Heer University of Washington
A1 Submission Designs

**Fields:** Sunshine, Lat/Long, City, Month

*Extra:* Climate, Energy, Mental Health, …

**Transforms:** Sums, Averages, Differences, Percentages, Proportions, Filter

**Chart Types:** Line, Area, Bar, Scatter, Heatmaps, Maps, Radial, Compositions
Design Considerations

Title, labels, legend, captions, source!

Expressiveness and Effectiveness
Avoid unexpressive marks (lines? gradients?)
Use perceptually effective encodings
Don’t distract: faint gridlines, pastel highlights/fills

Support comparison and pattern perception
Between elements, to a reference line, or to totals

Use reader-friendly units and labels
Statistical soundness (regression, interpolation)
Design Considerations

Transform data (e.g., filter, log, normalize)

Group / sort data by meaningful dimensions

Reduce cognitive overhead
Minimize visual search, minimize ambiguity
Appropriate size, aspect ratio, legible text
Avoid legend lookups if direct labeling works
Avoid color mappings with indiscernible colors

Be consistent! Visual inferences should consistently support data inferences.
Administrivia
A2: Exploratory Data Analysis

Use visualization software to form & answer questions

**First steps:**
Step 1: Pick domain & data
Step 2: Pose questions
Step 3: Profile the data
Iterate as needed

**Create visualizations**
Interact with data
Refine your questions

**Author a report**
Screenshots of most insightful views (8+)
Include titles and captions for each view

Due by 11:59pm Friday, Apr 23
Tableau Tutorial  (Optional)

Monday April 12, 4:30-5:30pm
Zoom link available on Canvas
The session will be recorded
Design Activity
Visual Encoding Activity

5  17

How many visualizations can you think of for conveying these two numbers? Feel free to invent tasks or contexts. Sketch as many as you can!
Visual Encoding Activity

5 17

Now, compare designs in breakout rooms. How many ideas are the same? How many are different? After sharing with your group, capture one or more images to share (e.g., with your camera), and post them on the Ed thread “Visual Encoding Activity”.
How many visualizations can you think of for conveying these two numbers? Feel free to invent tasks or contexts. Sketch as many as you can!

Let’s review the results from your breakout groups!