

CSE 512 - Data Visualization

A1 + Design Activity



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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

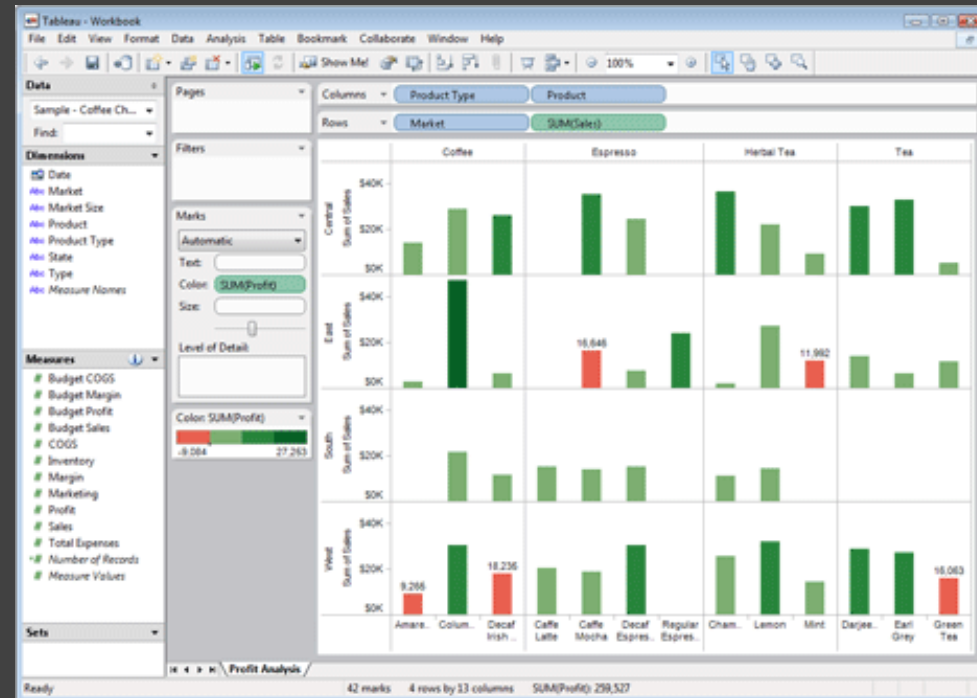
Interact with data

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".

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!

Let's review the results from your breakout groups!