Design Critiques
A2 Review
Example:
Motion Pictures Data
Motion Pictures Data

Title          String
IMDB Rating    Number
Rotten Tomatoes Rating Number
MPAA Rating    String
Release Date   Date
Worldwide Gross Number

Integrated data from IMDB, Rotten Tomatoes and The Numbers, joined on film title.
Assignment 2 Rubric

1. Clear questions and applicable data set
2. Data set, acquisition, and transformation described
3. Visual exploration process description
4. Depth of analysis
5. Design of final visualization
   * Instructive image (does it answer the question?)
   * Appropriate caption and description
   * Expressiveness / Effectiveness of visualization
Profitability of selected movies by genre and MPAA rating

Overall, higher ratings decrease the chance of making a profit

However, some categories show no relationship between rating and profit

And in others, the relationship is reversed

Matthew Kay
Weekly Flight Distributions for 25 U.S. Cities

The image at left shows the percentage of all U.S. flights taken on each day of the week during December 2009.

The image below shows the total count of flights taken into and out of the top 25 most-flown cities in the U.S., along with a weekly distribution of flights for each, for December 2009.

What can we conclude? Well... there were more Mondays, Tuesdays, and Wednesdays in December 2009 than Fridays, Saturdays, or Sundays. D’oh! The image at right displays this same information in a more familiar form.
Do Airlines tell you that your Flight takes longer than it actually does?

This graph shows the ratio of the flight time as given on the ticket or the Internet to the actual flight time. In other words, how much longer is the flight time given by the airline. There is a clear trend of overestimating flight time in order to avoid the flight to be classified as delayed to avoid getting a lower ranking in the on-time statistics. The averages are calculated for each year including 2 previous years (as measured in December) to smoothen the line.
Negation and finger-pointing together is associated with longer, more verbose sentences on Wiki Talk pages

Below, we have aggregated 20k sentences extracted from 80 Wikipedia articles on a wide variety of topics, ranging from politically divisive issues and pop culture.

The arrows indicate how the two clusters change when you look at sentences that contain finger-pointing; both are much longer.

Text data scraped from Wiki Talk pages contains a lot of noise. For example, this sentence with mostly verbs and few words is more likely to have been mislabelled as a result of slang or errors, and therefore less reliable than the points with more typical word-to-verb ratios.

There are many more large gray circles than small orange asterisks - it is much more common for a sentence to not contain negation. However, if we highlight the sentences that do contain negation, we can more clearly see how separate they are from the gray mass of other datapoints.
Final Project
Final Project

Design a new visualization system or technique
Many options: new system, interaction technique, design study
4-6 page paper in conference paper format
2 Presentations: in-class report & final poster session

Schedule
Project Proposal: **Tuesday, Feb 18 (end of day)**
In-Class Presentation: **Thursday, Feb 27 (slides due 2/26 5pm)**
Poster Presentation: **Thursday, Mar 13 (5-8pm)**
Final Papers: **Thursday, Mar 20 (7am)**

Logistics
Groups up to **4** people, graded individually
Clearly report responsibilities of each member
RunMonster
Troy Brant & Steve Marmon
Protovis: A Graphical Toolkit for Visualization
Mike Bostock
var army = pd.nest(napoleon.army, "dir", "group");
var vis = new pv.Panel();

var lines = vis.add(pv.Panel).data(army);
lines.add(pv.Line)
    .data(function() army[this.idx])
    .left(lon).top(lat).size(function(d) d.size/8000)
    .strokeStyle(function() color[army[paneIndex][0].dir]);

vis.add(pv.Label).data(napoleon.cities)
    .left(lon).top(lat)
    .text(function(d) d.city).font(“italic 10px Georgia”)
    .textAlign(“center”).textBaseline(“middle”);

vis.add(pv.Rule).data([0,-10,-20,-30])
    .top(function(d) 300 - 2*d - 0.5).left(200).right(150)
    .lineWidth(1).strokeStyle(“#ccc”)
    .anchor(“right”).add(pv.Label)
    .font(“italic 10px Georgia”)
    .text(function(d) d.temp+“°”).textBaseline(“center”);

vis.add(pv.Line).data(napoleon.temp)
    .left(lon).top(tmp).strokeStyle(“#0”)
    .add(pv.Label)
    .top(function(d) 5 + tmp(d))
    .text(function(d) d.temp+“°”+d.date.substr(0,6))
    .textBaseline(“top”).font(“italic 10px Georgia”);
Divided Edge Bundling – David Selassie
Visualizing the Republic of Letters

Daniel Chang, Yuankai Ge, Shiwei Song

Republic of Letters
1700

FILTER BY AUTHOR
- Damien Desormes
- Daniel Cunabas
- Daniel de Pury
- Daniel Defoe
- Daniel Malthus
- Daniel Marc Antoine Chardon
- Daniel Mulder

TOP CITIES AND AUTHORS
- Letters received
- Letters sent

London
- 546
- 557

Oates
- 304
- 250

Dublin
- 208
- 154

Paris
- 238
- 112

Twickenham
- 18
- 101

John Locke
- 250
- 283

Joseph Addison
- 244

Voltaire
- 231

Jonathan Swift
- 159

Alexander Pope
- 150
Stanford Network Analysis Tool - Nick Briggs & Maria Kazandjieva
Aki Maeda, Andrea Zvinakis, Yanzhu Du
rails

GotHub - Brandon Heller, Eli Marschner, Evan Rosenfeld
Tips for an effective project

Focus on a compelling **real-world problem**
How will you gauge success?

Consider **multiple design alternatives**
Prototype quickly (use Tableau, R, Gephi...)

**Seek feedback** (representative users, peers, ...)
Even informal usage can provide insights

Choose **appropriate team roles**

**Start early!!** (and read the suggested paper!)
A3 Design Critiques
Design Critique

What is the purpose of the visualization?
Does it serve its purpose well?
  Does it convey the data honestly?
Does it show the appropriate amount of data?
Are effective visual encodings used?
Is interaction used to enable effective exploration or examination of the data?
Does it address an important topic?
Is it innovative?
In-Class Critique Exercise

Visit A3 page on class wiki, find your assignment. Use the visualization, read the submission. Form a critique: note strengths & opportunities. Write up your critique, post to wiki. Next, you will meet in person to discuss. Brave souls can then volunteer to share visualizations & critiques with the class.

Be respectful & constructive!
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