Lecture 15: Search and InfoVis

April 5
Paper prototype Recap
Search
User needs

• Information Needs
  – Find all the flights from DCA to JFK next Monday
  – Find the cheapest flight
  – Find an affordable way to get to JFK

• Practical Needs
  – Book a flight
  – Go to NYC next Monday
  – Attend a friend’s wedding
User task and Search

• Is this a search task?
• Does this task involve search?
• Can this task be made efficient using search?

• E.g.,
  – Booking a ticket
  – Finding a ski resort
  – Posting a classified ad
Information need vs. Query

• Users translate information need into queries
• Users judge relevancy w.r.t. information need rather than queries
Search UI goals

• Aid users in understanding and expressing their information needs
  – Formulate queries
  – Select among available information sources
  – Understand search results
  – Keep track of the progress of their search
Some HCI Research Questions

• How many results to show on the page?
• How much details to show?
• How do people want to search X?
• What to do when search takes a long time to run?
Learnability

- Metaphor
- Mental model
- Feedback
Google

Search for: tom hanks

SafeSearch: Moderate

Web > Images

Related searches: tom hanks saving private ryan young tom hanks

Tom Hanks Films
www.MoviesUnlimited.com The Movie Collector's Website! 1000s of titles not found elsewhere

Tom Hanks Movies
Ask.com Search for Tom Hanks
Memory

- Remember locations of items
- Remember search terms

Scenario: A user wants to search for information about an unfamiliar phrase in an article
  - What needs to go into the user’s memory?
  - How can we reduce the memory load?
Efficiency

• Entering the search box
• Typing keywords
• Waiting
• Reading search results
• Browsing pages

• What are related to user efficiency and system efficiency respectively?
Few Errors

• Perceptual
• Cognitive
• Motor
• Slips and lapses
Satisfaction

- Privacy
- Trust
- Fulfillment
InfoVis
How many A’s?
How many A’s?
Why is it HCI?

• People don’t want to draw by hands
  – Unless you’re making paper prototypes

• People can’t handle the data too large and complex
  – Need computers to process
2008 Presidential Election
By electoral college votes
By county
Why visualization?

• Answer questions
• Discover questions
• Make decisions
• See data in context
• Expand memory
• Support graphical calculation
• Find patterns
• Present argument
• Tell a story
• Inspire
• Explain
Research goals

• Understand how visualizations convey information to people
  – What do people perceive/comprehend?
  – How do visualizations correspond with mental models of data?

• Develop principles and techniques for creating effective visualizations and supporting analysis
  – Amplify perception and cognition
  – Strengthen connection between visualization and mental models of data
Information Visualization: Mantra

• Overview, zoom & filter, details-on-demand
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Overview
Zoom
Filter

Start your search by Area Map by choosing your location and apartment preferences below:

State:
- Maryland

County:
- Montgomery Cour

City*:
- Kensington
- Montgomery Village
- North Bethesda

Price Range:
- Any

Bedrooms:
- Any

Advanced Search

Start Search
Details on Demand
Overview, zoom & filter, details-on-demand
ManyEyes

Welcome to the alpha version of Many Eyes!
View your data, ask questions, and share your discoveries.
Harness the collective intelligence of the net for insight and analysis.

http://services.alphaworks.ibm.com/manyeyes/app