



Human-Computer Interaction IS4300

1



Designing for the Web

Stone Ch 17 +
J. Lazar et al, HCI Handbook



Today

- Stone Chapter
- J. Lazar et al, HCI Handbook
- Testing tools & surveys
- Nielsen's 'Top 10 Mistakes'
- Credibility in Web sites



Designing for the Web

- Relative to Designing for GUIs...
 - What's different?
 - What's the same?



Design Principles for Web Sites

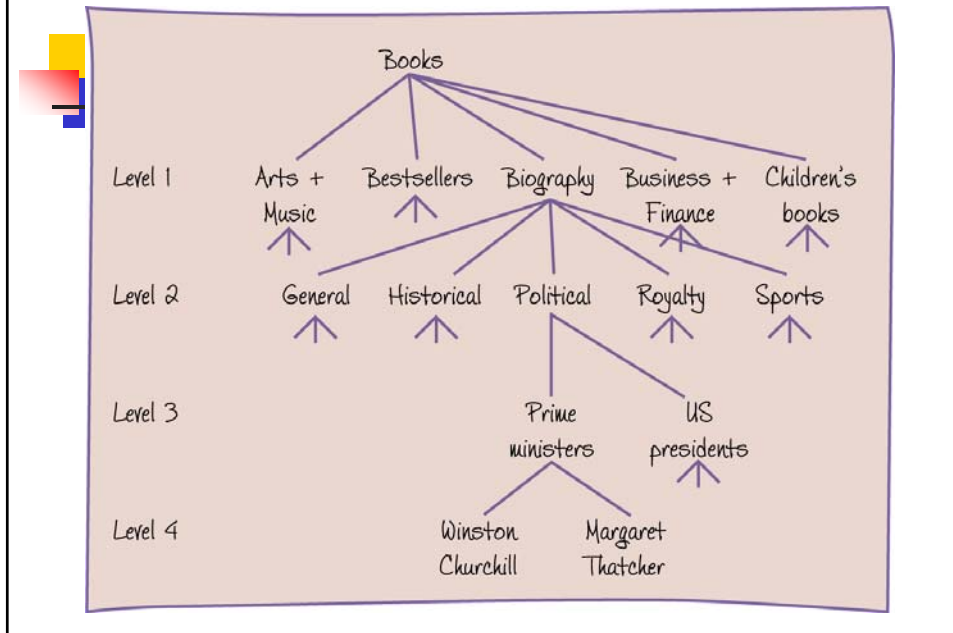
- Homerun (Nielsen 2000)
 - High-Quality Content
 - Often Updated
 - Minimal Download Time
 - Ease of Use
 - Relevant to User's Needs
 - Unique to the Online Medium
 - Net-centric Corporate Culture



Designing Web Sites

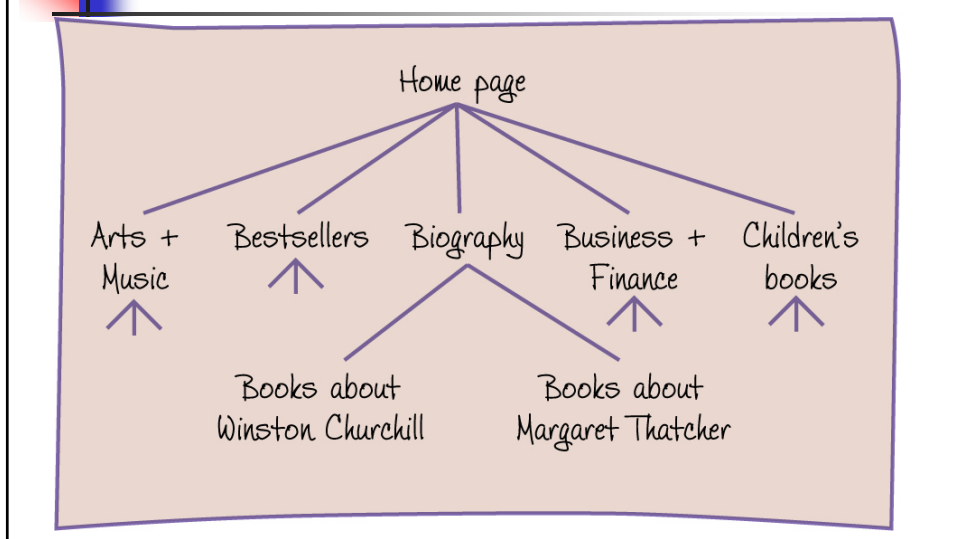
- Designing the Web Site Structure
 - Start with Information Structure
 - How deep & wide?
 - Long vs. short pages?
 - Structure of site should support tasks.

Sample information structure



Web structure

Broad & shallow minimizes page loads



Designing Web Sites

- Helping the Users Know Where They Are
 - Orient users who hypertext into the middle of your site.
 - What site am I on?
 - Logo, consistent look & feel
 - What page am I on?
 - Breadcrumbs

Breadcrumbs

The screenshot shows the Sears website interface. At the top, there are logos for various brands: SHOP YOUR WAY, kmart, mycenter, CRAFTSMAN, Kenmore, PartsDirect, LANDS'END, Sears Home Services, and Sears Outlet. Below these is a search bar with the text 'Enter keyword or item number' and a 'Search' button. A navigation bar includes 'Departments', 'LocalAd', 'Deals Center', 'Parts & Services', 'Gifts', 'Gift Cards', and 'Gift Registry'. A promotional banner reads 'get it today with FREE store pick up' and 'Deal of the Day | layaway | SHOP YOUR WAY REWARDS mem'. The breadcrumb trail is highlighted with a red circle: 'Health & Wellness > Bathroom Safety > Bath Safety Accessories'. The main product listing is for 'Jobar Jobar Plaid Dust Mop Slippers', priced at \$8.10. It includes a description, a 'Marketplace Item' label, and a 'Ship' section indicating it is 'In Stock from Abco Deals'.

Health & Wellness > Bathroom Safety > Bath Safety Accessories

Jobar Jobar Plaid Dust Mop Slippers
SearsItem# SPM6072346308 | Model# JOBAR-mopslipper
0 Reviews | Write a review

\$8.10

Marketplace Item | learn more
Sold and shipped by Abco Deals
Also sold by 10 other seller starting from \$13.57

Quantity | 1

Ship
Starts at \$6.25

In Stock from Abco Deals

| Description | Mor |
|------------------------------------|------------------------|
| Also Available From These Sellers: | |
| Discount-items | \$13.57 ship \$12.0 |

Availability & Rewards
Earn 81 SHOP YOUR WAY REWARDSSM
Special pricing for Hawaii, Alaska and F



Designing Web Sites

- Helping the Users Navigate around the Site
 - Structural navigation – other pages within the same site
 - Associative links – same page links
 - “See Also” links – to other web sites
- Navigation Aids
 - Site map
 - Breadcrumbs
 - Maps (geographical or other visual index)



Designing Home Pages and Interior Pages

- Designing the Home Page
 - Tells the users where they are
 - Tells the users what the site does
 - Logo, tagline, intro, key content, search, etc
- Designing Interior Pages
 - More content, less introductory info
 - User still needs to know where they are
 - Logo, link to homepage



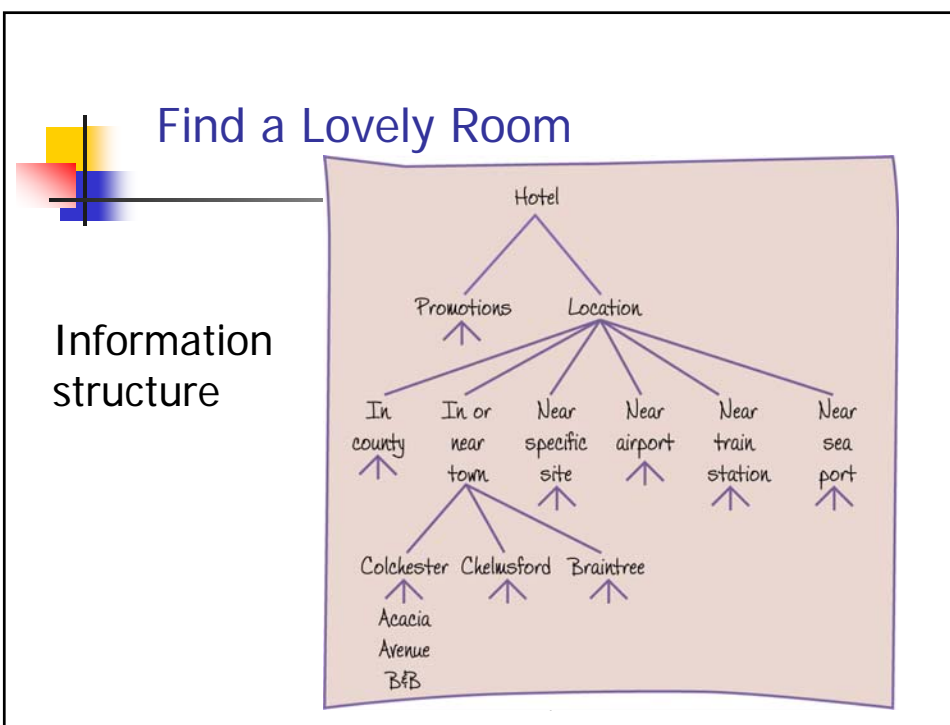
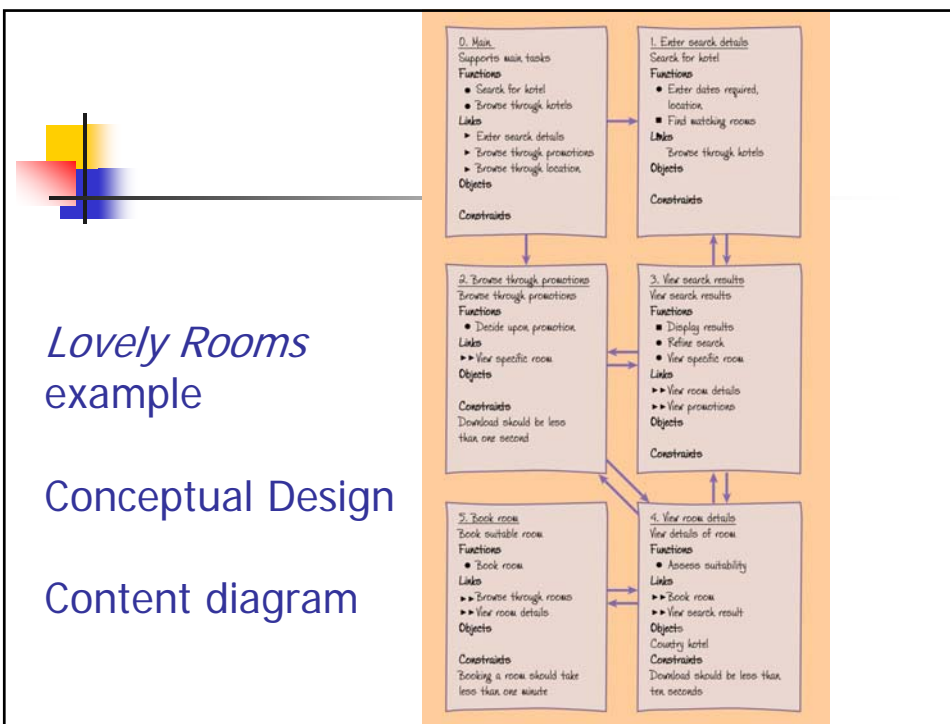
Design Issues for Web Pages

- Widgets on Web Pages
- Scrolling
 - Info “above the fold” important
 - Users now used to scrolling web pages *vertically* (but not horizontally)
- Designing for Different Screens and Platforms
- Using the Screen Area Effectively
- Using style sheets

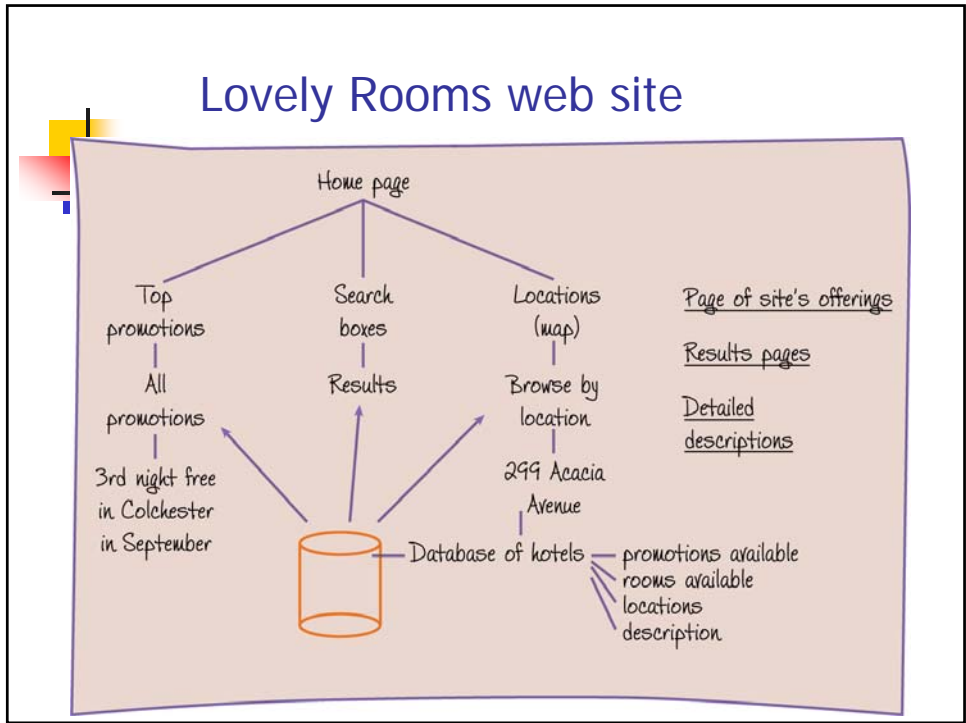


Writing the Content of Web Pages

- Keep Text to a Minimum $\leq 50\%$ of print
- Help Users to Scan – use headings and subheadings, bulleted and numbered lists, highlight
- Dividing Long Blocks of Text into Separate Sections




Lovely Rooms web site



Lovely Rooms


Traditional Small Hotels

- [Essex](#)
- [Suffolk](#)
- [Norfolk](#)
- [Cambridgeshire](#)
- [Bedfordshire](#)
- [Hertfordshire](#)



Room finder




Acacia Avenue
Colchester, Essex £ 59.99 per night



Acacia Avenue is a charming hotel in a quiet area in the outskirts of Colchester. Good access to public transport. Backing onto the river.

- Location
- Accommodation
- Gardens
- Nearby attractions

Map

◀ Previous hotel Next hotel ▶



Jonathan Lazar Handbook of HCI

- Unique Challenges in Designing for Web?
 - Unreliability of internet (delays, outages)
 - Browser incompatibility & versions
 - Standards (w3) rarely followed exactly
 - Absence of user training



Navigation design

- Important to provide navigation
 - Let users know where they are and where they can go
 - Users may not enter from home page
- Infeasible to link from every page to every other, so must organize site into sections
 - “sectional navigation” – section links in sidebar (eg)
- “audience-splitting”
 - Parts of site optimized to different user groups
- site maps
 - Reduces user disorientation



Navigation

- breadcrumbs
 - Hierarchical info about current location in site
- Text navigation (in addition to images) important
 - For users with images turned off
 - For blind users
 - For users to navigate before all images download
- Navigation widgets should be at top or left of page
 - First places users look at
- Methods should be constant throughout entire site



Tips – things to think about

- Download times
 - 10 sec max (Nielsen)
- Accessibility
- Internationalization

- Animation – can be distracting
- Mouseovers
 - Nielsen: most have no value to users



Development Methodology for Web

- First, determine overall mission and users
- User involvement
 - Requirements gathering
 - Usability testing
 - Best: participatory design
- But, typically very short development times



Usability testing

- Easier to do remotely, since web site can be accessed over net
 - Tools
 - Intuition HQ, Usabilla, Loop11, etc.
- Heuristic evaluation: Levi & Conrad, 1996 – Interactions 3(4), A heuristic eval
 - Used Nielsen's heuristics & severity scale

“Automatic” Usability Testing Tools

- NIST WEBSAT
 - Very old
 - Example rule,
 - Forms must have Submit and Reset/Clear buttons
- Readability checks (Word, wordscount.info, etc)
- Color contrast (checkmycolours.com)
- Navigation (optimalworkshop.com, writemaps.com, plainframe.com, navflow.com)
- Load speed (pingdom.com)
- UX (feedbackarmy.com, 10 reviews for \$20)

Standard Survey Instruments

- QUIS - \$750!
 - Questionnaire for User Interaction Satisfaction
- WAMMI – web analysis and measurement inventory – wammi.com

Website Analysis and Measurement Inventory (WAMMI)

Demo Survey - Company Z



Thank you for helping us evaluate the Company Z web site. If you have not yet used this site, please go back to it now and fill out this questionnaire after you've used it.

The information you provide is kept completely confidential, and no information is stored on computer media that could identify you as a person. You are not in any way obliged to participate and you may freely withdraw at any time.

What is your age?


choose ...

What is your gender?

- Male
 Female

Which of these browsers do you have experience with?(select all that apply)


- Safari
 Google Chrome
 Opera Browser
 Mozilla Firefox
 Internet Explorer
 something else



WAMMI

Statements 11 - 20 of 20

| | Strongly Agree | Strongly Disagree |
|--|-----------------------|-----------------------|
| I don't like using this web site. | <input type="radio"/> | <input type="radio"/> |
| I can easily contact the people I want to on this web site. | <input type="radio"/> | <input type="radio"/> |
| I feel efficient when I'm using this web site. | <input type="radio"/> | <input type="radio"/> |
| It is difficult to tell if this web site has what I want. | <input type="radio"/> | <input type="radio"/> |
| Using this web site for the first time is easy. | <input type="radio"/> | <input type="radio"/> |
| This web site has some annoying features. | <input type="radio"/> | <input type="radio"/> |
| Remembering where I am on this web site is difficult. | <input type="radio"/> | <input type="radio"/> |
| Using this web site is a waste of time. | <input type="radio"/> | <input type="radio"/> |
| I get what I expect when I click on things on this web site. | <input type="radio"/> | <input type="radio"/> |
| Everything on this web site is easy to understand. | <input type="radio"/> | <input type="radio"/> |



WEBMAC – Website Motivational Analysis Checklist

4 aspects assessed

- Engaging/Stimulating
 - offers eye-catching visuals, attractive screen layout, humor, varied activities, novelty, and diverse and well-written content;
- Meaningful
 - offers a statement of the purpose and importance of the site, accurate and updated information, meaningful examples and analogies, and quick and easy links to other relevant sites;
- Organized
 - offers a site overview, summaries of key points, a help interface, and definitions of terms;
- Enjoyable for both the extrinsically and intrinsically motivated user
 - positive feedback on progress, user-controlled external rewards (such as animation), and quick response speed.

WEBMAC

Example "Stimulating" Questions

1. The home page of this Web site is eye-catching and visually interesting.
5. There are incentives at this site that motivate me to explore it
9. The screen layout of this Web site is attractive.

Exercise

- Design the eyeglass frame sales web site

- Methodology?

- Sketch solution



Nielsen: Top 10 Mistakes in Web Design

- #1. Bad Search
- #2. PDFs
- #3. Not indicating visited links.
- #4. Non-Scannable Text
- #5. Fixed Font Size



Nielsen: Top 10 Mistakes in Web Design

- #6. Page Titles With Low Search Engine Visibility
- #7. Avoid Anything that looks like an Advertisement
- #8. Violating Design Conventions
- Jakob's Law of the Web User Experience:
"users spend most of their time on other websites."
- #9. Opening New Browser Windows
- #10. Not answering users' questions



Trust in websites

- Fogg, CHI 2001, What Makes Web Sites Credible?
- 1400 people evaluated 51 websites
- *credibility* can be defined as *believability*
- When is this important?

Trust

How the Factors Impact Web Credibility

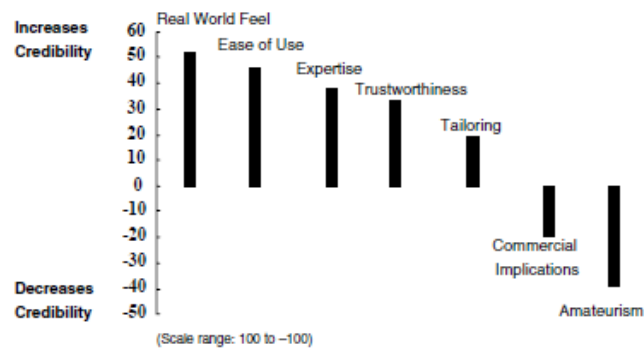


Figure 2: The seven scales and their effects on perceived credibility.



Positive influence

Table 2: Real-World Feel Scale (Cronbach's alpha = 0.66)

| Items in the REAL-WORLD FEEL scale | Mean |
|--|------|
| The site provides a quick response to your customer service questions. | 2.02 |
| The site lists the organization's physical address. | 1.86 |
| The site gives a contact phone number. | 1.71 |
| The site gives a contact email address. | 1.53 |
| The site shows photos of the organization's members. | 0.69 |



Positive influence

Table 3: Ease of Use Scale (Cronbach's alpha = 0.67)

| Items in the EASE OF USE scale | Mean |
|--|-------|
| The site lets you search past content (i.e. archives). | 1.57 |
| The site looks professionally designed. | 1.55 |
| The site is arranged in a way that makes sense to you. | 1.48 |
| The site takes a long time to download. | -0.94 |
| The site is difficult to navigate. | -1.30 |



Positive influence

Table 4: Expertise Scale (Cronbach's alpha = 0.63)

| Items in the EXPERTISE scale | Mean |
|--|------|
| The site is by a news organization that is well respected outside of the Internet. | 1.91 |
| The site lists authors' credentials for each article. | 1.49 |
| The site has articles that list citations and references. | 1.49 |
| The site has few news stories but gives detailed information for each. | 1.10 |
| The site says it is the official site for a specific topic | 0.85 |
| The site has ratings or reviews of its content. | 0.79 |
| The site displays an award it has won. | 0.45 |



Positive influence

Table 5: Trustworthiness Scale (Cronbach's alpha = 0.57)

| Items in the TRUSTWORTHINESS scale | Mean |
|--|------|
| The site is linked to by a site you think is believable. | 1.29 |
| The site states its policy on content. | 1.26 |
| The site links to outside materials and sources. | 1.25 |
| The site provides links to its competitors sites. | 1.11 |
| The site was recommended to you by a friend. | 1.07 |
| The site represents a nonprofit organization. | 0.93 |
| The site lists well-known corporate customers. | 0.62 |
| The URL for the site ends with ".org" | 0.58 |



Negative influence

Table 7: Commercial Implications (Cronbach's alpha = 0.65)

| Items in the COMMERCIAL IMPLICATIONS scale | Mean |
|---|-------|
| The site is advertised on the radio or on billboards. | 0.57 |
| The site has ads that match the topic you are reading about. | 0.21 |
| The site is designed for e-commerce transactions. | 0.17 |
| The site has a commercial purpose (as opposed to academic purpose). | -0.63 |
| The site requires a paid subscription to gain access. | -0.71 |
| The site has one or more ads on each page. | -0.77 |
| The site automatically pops up new windows with ads. | -1.56 |
| The site makes it hard to distinguish ads from content. | -2.08 |



Negative influence

Table 8: The Amateurism Scale (Cronbach's alpha = 0.64)

| Items in the AMATEURISM scale | Mean |
|--|-------|
| The site has been updated since your last visit. | 1.55 |
| The site offers information in more than one language. | 1.04 |
| The site is small (e.g. less than 5 pages). | -0.28 |
| The site is hosted by a third party (e.g. AOL, Geocities). | -0.44 |
| The site's domain name does not match the company's name. | -1.06 |
| The site has a typographical error. | -1.28 |
| The site is sometimes unexpectedly unavailable. | -1.28 |
| The site has a link that doesn't work. | -1.45 |
| The site links to a site you think is not credible. | -1.53 |
| The site is rarely updated with new content. | -1.67 |



T8 - User Testing & Prototype Revision – Due next class

- In this final group assignment, you will complete enough of the implementation to support user testing, conduct a user test of your interface, and write up the final results of the project.
- **User Testing** You will conduct user testing of your system. Prepare a briefing and three tasks. These may be the same ones that you used in paper prototyping, but you may want to improve them based on feedback from the paper prototyping. You may, if you wish, also prepare a short demo of your interface that you can use to show your users the purpose of the system. The demo should be scripted, so that you do and say the same things for each user. It should use a concrete example task, but the example task should be sufficiently different from the test tasks to avoid bias. The demo option is offered because some interfaces are learned primarily by watching someone else use the interface. Think carefully about whether your interface is in this category before you decide to use a demo, because the demo will cost you information. Once you've demonstrated how to use a feature, you forfeit the chance to observe how the user would have used it otherwise. Pilot test your briefing, demo, and tasks, before the user test session. Use another group member or another member of the class for your pilot testing.



T8 - User Testing & Prototype Revision – Due next class

- Conduct a formative evaluation with each user:
 - Provide your briefing and (optionally) demo.
 - Then provide the tasks one at a time, observe, and take notes. One member of your group should be the facilitator of the test, and the rest should be observers.
- **Redesign** Collect the usability problems found by your user tests into a list. Assign each problem a severity rating (as in T7 above), and brainstorm possible solutions for the problems. Then, fix your implementation to solve as many problems as you can in the time available, giving priority to severe problems.
- **What to Post** A link to your updated prototype and a brief usability test report.



To do

- Read Stone Ch 18, Leung, Chaudry
- Finish T8 (next class)
- Finish final report & 10 min presentation (due in 1 week)
 - **Problem.** (1 min) What user problem are you trying to solve? Who are the users? What are their tasks?
 - **Demonstration.** (2 min) Demonstrate your design and implementation via a live demo of your system, working through one sample task. Discuss major design decisions. Run on YOUR computer to minimize compatibility issues. You should test with the projector before class starts.
 - **Evaluation.** (4 min) Discuss the major findings from all three of your user evaluations (paper prototyping, heuristic evaluation, and user testing).