COS10005 Web Development

Module 6 – CSS Usability / Accessibility

Contents

- Usability
  - Best Practices
  - Website Usability Test
- Accessibility
  - Accessibility Testing

Usability: Consideration

- Usability does not simply refer to the "visual" design of a site. It also concerns
  - Ease of **learning (vs. Ease of use)**
  - Ease of **navigation**
  - Ease of **undoing** actions
  - Ease of **access** for different groups of users
  - Ease of **task** completion (e.g., registration for shopping, anonymous access)
  - Ease of **reading**

It applies to all software applications, not just web sites.

Usability: Web Design Consideration

- Usability may be constrained by **Universal Design Issues:**
  - Older equipment
  - Limited bandwidth
  - Language
  - Low literacy
  - Noisy environment

- And the users' needs are rapidly changing*:
  - People age
  - People's skills, knowledge, experiences change
  - Technologies change

Usability: Universal Design Issues

Rural access – Limited Bandwidth

- Slow modems, connections, computers
  - Multimedia? Images? Text?

Usability: Universal Design Issues

Older or Limited Technology

- Limited screen resolution / limited colour range

- Limited computer memory

- Old computers with old browsers

- Not able to handle plug-ins, or JavaScript

- No mouse / pointing device

Usability: Universal Design Issues

Aging Population

- Users may need to be able to **alter user interface**: font size, mouse pointer size, magnify screen, set preferred style sheets
  - Most browsers have built-in ability for users to change font size: Ctrl +, Ctrl –, Ctrl 0
- Most operating systems have the ability to alter the mouse pointer size

Usability: Universal Design Issues

- Usability may be constrained by whether the web site or web application has the right volume of information, or the right number of users (critical mass). For example,

  - a photo sharing site without photos,
  - a discussion board without contributors,
  - a online game without players

   **Probably not web developer's responsibility!**

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- Responsive CSS

- Linking to Social Media

- Usability

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Best Practices: Ease of Navigation

- **Breadcrumbs** or **breadcrumb trail** allows users to keep track of their locations within programs or documents.

- Breadcrumbs typically appear horizontally across the top of a web page, often below title bars or headers.
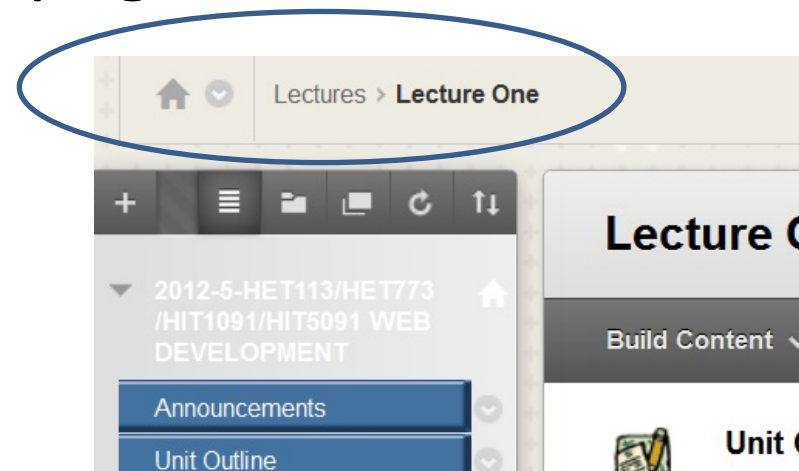
Best Practices: Navigation Bars

- ## Clear navigation bars allows users to know where to go next
    - – Use vertical list or horizontal tab list
    - – Add visual effect and indicate current selection/location

Shows underline on mouse over

Indicates that library is the current selection
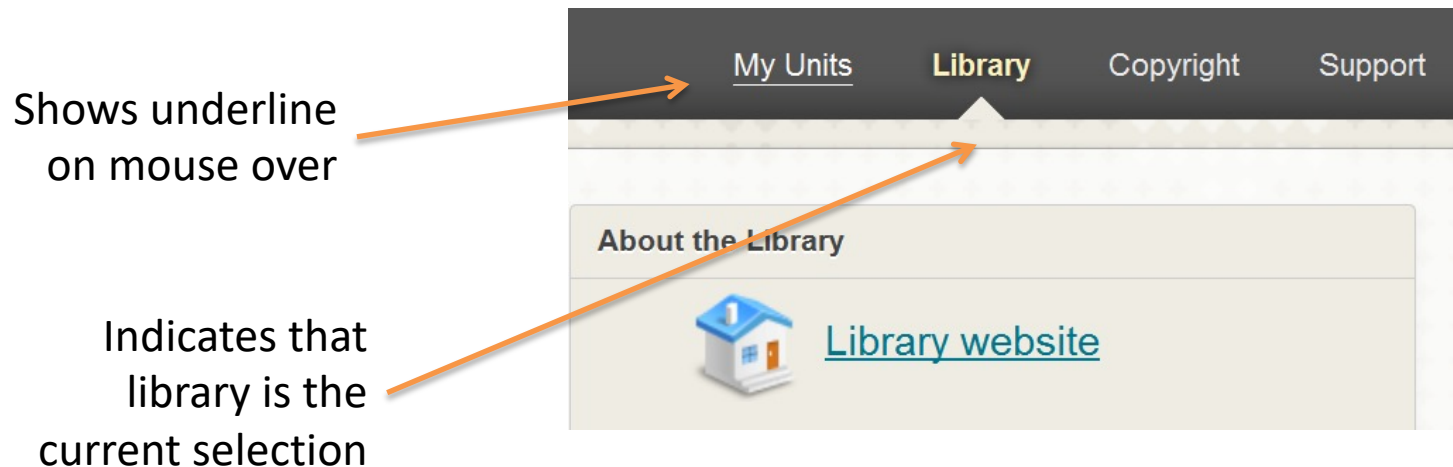
Best Practices: Page Length

- Webpages is considered long if it is three or more screens lengths

  - Consider breaking to multiple short pages using linear organisation

- If required to be a single file

  - Provide a table of contents or a bullet list at the top of the page that links to specific parts of the page

Best Practices: Design Principles

- Consistency – consistent visual elements (shape, color, font, images) throughout website

- Contrast – Add visual excitement and draw attention, dark text on medium to light background provides easy reading

- Proximity: visually group logically related items on your web pages

- Alignment: align elements (horizontally or vertically) to create visual unity

Best Practices: Webpage Design Factors

- Load time – limit the total size of a webpage, all associated images and media files.
    - On a 56kps connection, it takes about 8 seconds to load a 60kb webpage

- Perceived load time – limit the time a visitor is aware of waiting
    - Break a long page
    - Split a large image into smaller images, since graphics are displayed as it load

Best Practices: Webpage Design Factors

- ## Above the fold
  - Place important and interesting content on the viewable portion of the page

- ## Webpage "Real Estate"
  - Place important information and navigation on the upper left and top centre of the page

- ## Horizontal scrolling
  - Avoid horizontal scrolling
  - Use percentage of layout width

Best Practices: Webpage Design Factors

- Adequate white space
  - place blank or white space around blocks of text to increase readability

- Target audience: *Use of colour*
  - Younger audience prefer bright, lively colours
  - Late teens and early twenties prefer dark background with occasional bright contrast and dynamic navigation
  - Older audience prefer light backgrounds, well defined images and large text

Best Practices: Webpage Design Factors

- Target audience: *Animation*
  - Use animation only if it suits your website, not because you have one in your library
- Browser friendly – test webpages on popular browsers, not only in your favourite browser
- Target audience: *Reading level*
  - Match reading level and style of writing to the audience, e.g., "Deleterious" for a kids' website
  - Use vocabulary that they are comfortable with

  Why can you just use "harmful"?

Best Practices: Text Design

- Use common fonts, **sans-serif** fonts are easier to read, **serif** fonts were originally designed for printing

- Be careful on font sizes (12 point or medium)

- Use appropriate color

- Hyperlink keywords or phrases, not sentences and avoid words like "Click here"

- Check spelling and grammar

Best Practices: Graphic Design

- Use colors consistently

- Use only necessary images

- Keep both file size and dimension of images small

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Test: Why?

- Increase in productivity
- Decrease in user training requirements
- Decrease in calls to the Help Desk and need for technical support
- Decrease in user error rate
- Decrease in programming costs associated with late design
- Decrease in maintenance costs.

Test: What?

- Focuses on testing, improving and refining the information architecture in terms of
  - Design
    - page design, readability, layout, graphics, scrolling
  - Finding information
    - navigation, category names, links
  - Understanding information
    - content quality and presentation
  - Search
    - quality of search results

Test: When?

- At the website's conception
(test on the printed mockup of the home page)

- Before planning a redevelopment

- Repeatedly during (re)development, as critical pages or sections are prepared

Test: Myth (Posted by Jacob Creech on July 12, 2011)

- Pointless because we won't make changes anyway

- Just get overruled through 'design by committee'

- Takes too long

- Costs too much

- Impossible to convince management to run tests

- Not needed because my site is perfect

Test: Myth ^(Posted by Jacob Creech on July 12, 2011)

- Impossible to show the value of testing
- Users don't care about usability
- Requires an Human Computer Interaction degree to understand usability
- Designers already know what they are doing, they don't need to run usability tests
- Had tested the site in the past, there is no need to test again
- Too difficult to get started

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What is Web Accessibility?

- **Web accessibility** means that people with disabilities can use the Web

- More specifically, **Web accessibility** means that people with disabilities can *perceive, understand, navigate,* and *interact* with the Web, and that they can *contribute* to the Web.

- **Web accessibility** also helps older people with changing abilities due to aging, and those who have temporary impairments.

W3C Introduction to Web Accessibility:

http://www.w3.org/WAI/intro/accessibility.php

Why: Demonstrations

Wheeling in Second Life

- Judith, who has cerebral palsy, has been using computers and the web for many years.
  In this short video, Judith talks about using Second Life and a club called "Wheelies" - one of her favourite Second Life locations.

Link to Video Segment 4:27 min
  http://www.usability.com.au/resources/wheeling-vid.cfm

Link to YouTube version 4:26 min
  http://www.youtube.com/watch?v=CBlaiBV_yJs

WCAG 2.0

- Web Content Accessibility Guidelines (WCAG)
  - is a stable, reference-able technical standard.
  - has **12 guidelines** that are organized under **4 principles:** perceivable, operable, understandable, and robust.

    http://www.w3.org/WAI/WCAG20/quickref/

- Has been endorsed by all levels of Government in Australia
  - This is one of the mandatory requirements for Australian Government agencies to consider when developing and maintaining their online presence.

    https://info.australia.gov.au/accessibility

Accessibility: Guidelines, Policy & Legislation

Australian Disability Discrimination Act
Web Accessibility: Advisory Notes

Individuals and organisations who provide goods and services over the Internet *need to make their websites accessible to people with disabilities*.

Australian Human Rights and Equal Opportunity Commission (HREOC) *Advisory Notes*, draws attention to resources that will help authors

and designers *make Worldwide Web documents accessible*. http://www.hreoc.gov.au/disability_rights/standards/www_3/www_3.html

The ***Advisory Notes*** also advises how web designers and website owners can ***avoid disability discrimination***, *without sacrificing the richness* and variety of communication offered by the World Wide Web.

See also:

determination against Sydney Olympic Games Organising Committee: http://www.hreoc.gov.au/disability_rights/decisions/comdec/2000/DD000120.htm

WCAG 2.0: Perceivable

- Provide text alternatives for non-text content.

- Provide captions and other alternatives for multimedia.

- Create content that can be presented in different ways, including by assistive technologies, without losing meaning.

- Make it easier for users to see and hear content.

http://www.w3.org/WAI/WCAG20/quickref/

WCAG 2.0: Operable

- Make all functionality available from a keyboard

- Give users enough time to read and use content

- Do not use content that causes seizures

- Help users navigate and find content

http://www.w3.org/WAI/WCAG20/quickref/

WCAG 2.0: Understandable

- Make text readable and understandable

- Make content appear and operate in predictable ways

- Help users avoid and correct mistakes

http://www.w3.org/WAI/WCAG20/quickref/

WCAG 2.0: Robust

- Maximize compatibility with current and future user tools

http://www.w3.org/WAI/WCAG20/quickref/

ACCESSIBILITY:
TESTING ACCESSIBILITY COMPLIANCE

Tools and Resources:

- Web Accessibility Evaluation Tools List: https://www.w3.org/WAI/ER/tools/

- Usability.com
  http://usability.gov/

- Jacob Nielson:

  http://www.useit.com/jakob/

NEXT LECTURE:
INTRODUCTION TO CLIENT SIDE SCRIPTING JAVASCRIPT