

COS10011/60004 Creating Web Applications

Design for Usability



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Web Page Design

To be usable Web pages should...

- Web pages should use presentation that is designed to:
 - ☐ be **clear and easy to use**;
 - ☐ be **simple to understand**;
 - ☐ be **accessible to all**;
 - ☐ provide good **cross browser support**;
 - ☐ be **fluid / reflow** - to the size of the window / screen / text size set by the user;
 - ☐ provide for **device independence**;
 - ☐ be usable on **mobile devices**;
 - ☐ and are developed to **good quality standards**.



Contents

Design for Usability

- Web Page Design
- Web Site Design
- Accessibility

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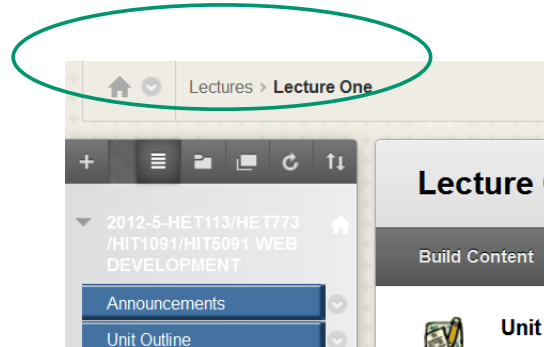
Usability: Web Design Consideration

- Usability does not simply refer to the “visual” design of a site. It also looks at
 - ☐ Ease of **learning**
 - ☐ Ease of **navigation**
 - ☐ Ease of **undoing** actions
 - ☐ Ease of **access** for different groups of users
 - ☐ Ease of **task** completion
 - ☐ Ease of **reading**

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Best Practices: Ease of Navigation

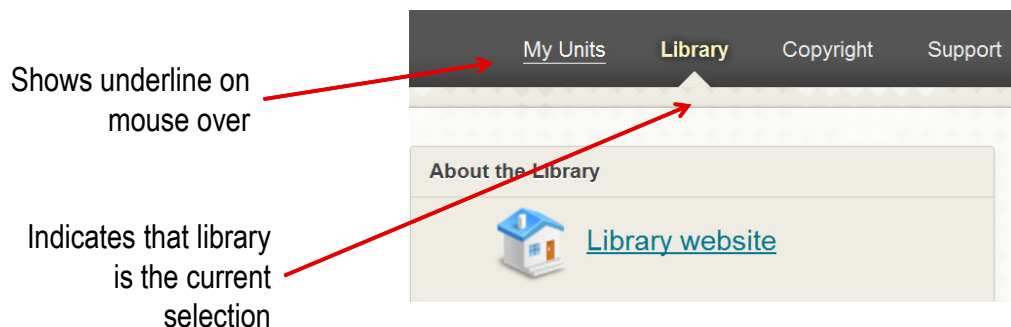
- **Breadcrumbs** or **breadcrumb trail** allows users to keep track of their locations within programs or documents.
- Breadcrumbs typically appear horizontally across the top of a web page, often below title bars or headers.
- Provide a site map or site search feature



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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



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Best Practices: Page Length

- Depends on type of page
 - ☐ e.g. Company home page versus Wikipedia article
 - ☐ Balance *too much info on a page* against *cost of navigation*
- ? What are the appropriate page lengths for Assignment ?
- If a large amount of info is better as a single page
 - ☐ 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

- **Repetition** – repeat visual elements (shape, colour, font, images) throughout design
- **Contrast** – Add visual excitement and draw attention, dark text on medium to light background provides easy reading
- **Proximity**: group related items
- **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 to 60kb.

- ☐ 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

■ Avoid horizontal scrolling

- use percentage on layout width

■ Mobile first

- design for portable devices first, then add extras

Best Practices: Text Design

- Use common fonts, **sans serif fonts** are easier to read on screen, **serif fonts** were designed for reading across printed material.
- **FANCY FONTS** can be hard to read
- Screen resolution is lower than paper, ensure fonts big enough
- Provide enough contrast between text colour and background colour
- Choose fewer fonts
 - ☐ Promote strong typographic identity
 - ☐ Vary weight, size, white space and colour
- Hyperlink keywords or phrases, not sentences.
Avoid adding extra links with words like "Click here"

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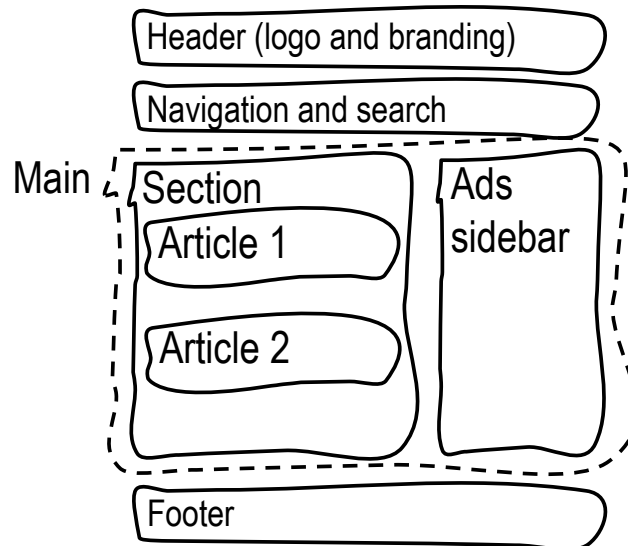
Best Practices: Colour and Images

- Choose colours from the Web Colour Palette to have the most consistent display
- Use only necessary images
- Keep both *file size* and *dimension* of images small
- Ensure that site is usable if images are not displayed
- If possible make your image displays 'scalable'

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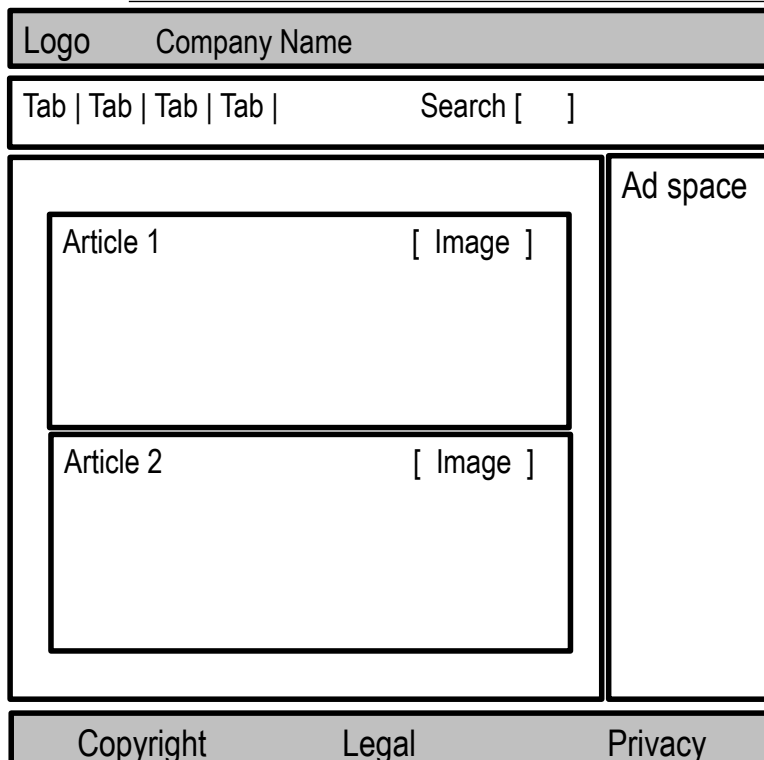
Graphic Design Process: Page Mock Ups

- It is a sketch of the desired design for discussion and critique
- Indicates the general layout of the home page



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Graphic Design Process : Wireframe



- Wireframe shows a more complete version of the page design
- Contains a more detailed elements

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DESIGN: WEBSITE STRUCTURE (ORGANIZATION)

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Website Structure (Organisation)

- Organise the website based on the site's **content and user experience** of connections
- Understand its effects on navigation
 - site **structure**, **menu** depth, **navigation** aids/tools
- Common information structure or website organisation
 - **Network** (Exploratory) – *Web, Cluster, Catalogue*
 - **Hierarchical** - *Tree*
 - **Linear** - *Linear, Tutorial*
- A diagram of the website organisation is a **site map**

<http://webstyleguide.com/wsg3/3-information-architecture/3-site-structure.html>

Web Style Guide – Information Architecture

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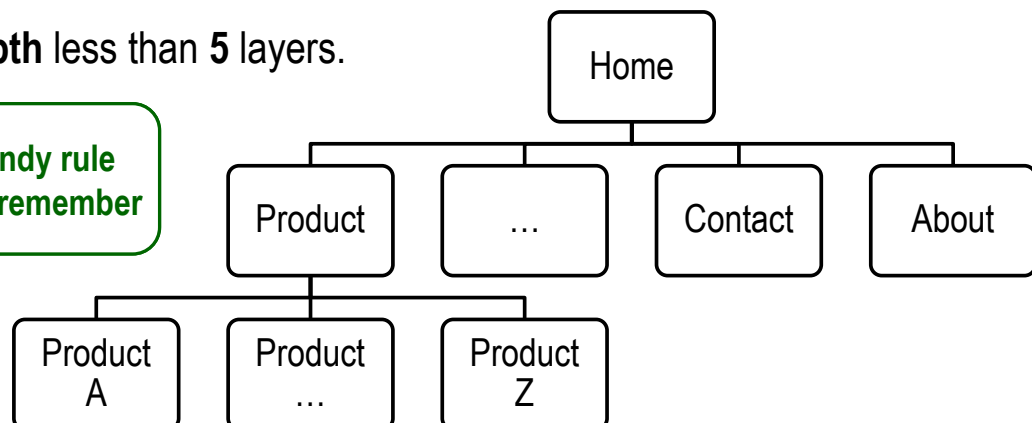
Structure: Network

- **Network structure** contains links between most pages.
- A **user has control** over the order in which pages are visited.
- This structure can result in a user **easily become lost**.
 - ☐ Careful navigation assistance and tools are required.
 - ☐ The user should know where they are and where to go.
 - ☐ Make sure each page includes a clear location information and a standardised navigation bar
- This type of structure can also cause a significant **maintenance** problems.

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Structure: Hierarchical

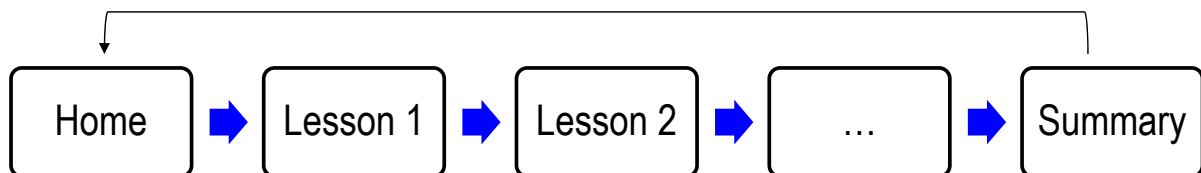
- **Hierarchical structure** has an index page that contains links to other pages, which contain links to other pages
- Most common form of organisation
- Usability studies, based on cognitive recognition, suggest:
 - ☐ **breadth** (or “**fanout**”) should be kept to less than **10** options
 - ☐ **depth** less than **5** layers.



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Structure: Linear

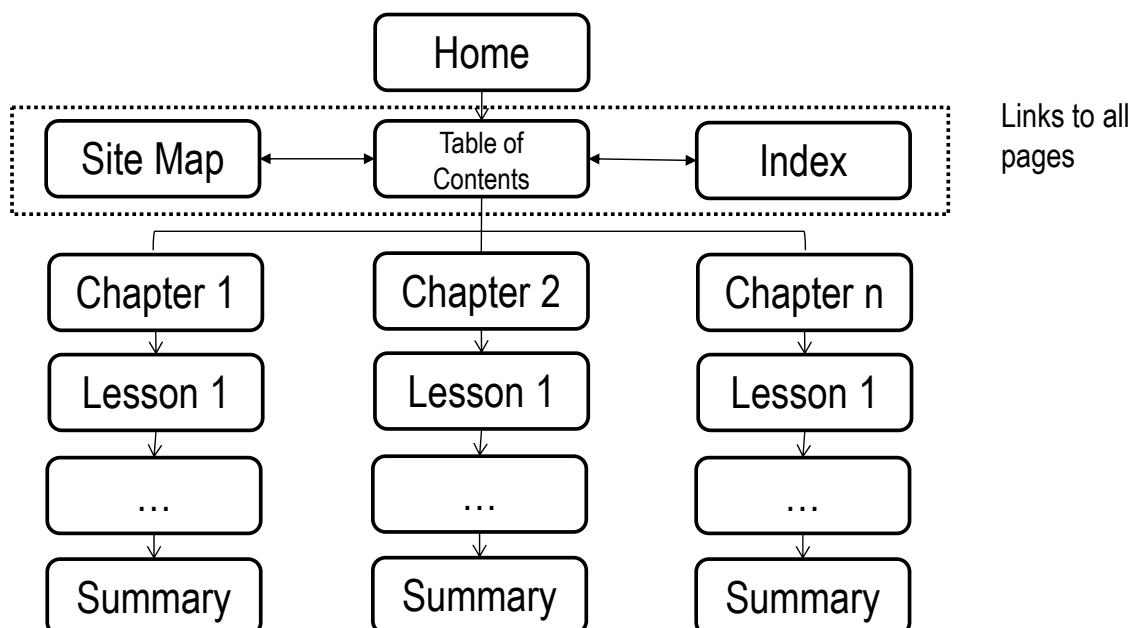
- **Linear structure** supports **forward** and **back** movement through a **sequence** of Web pages.
- This structure is suitable for describing **step-by-step** procedures. e.g. Wizards, Surveys, Bookings, ...
- Users will generally have no navigational difficulties however there should be an easy way to exit.



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Structure: Combining Hierarchical and Linear

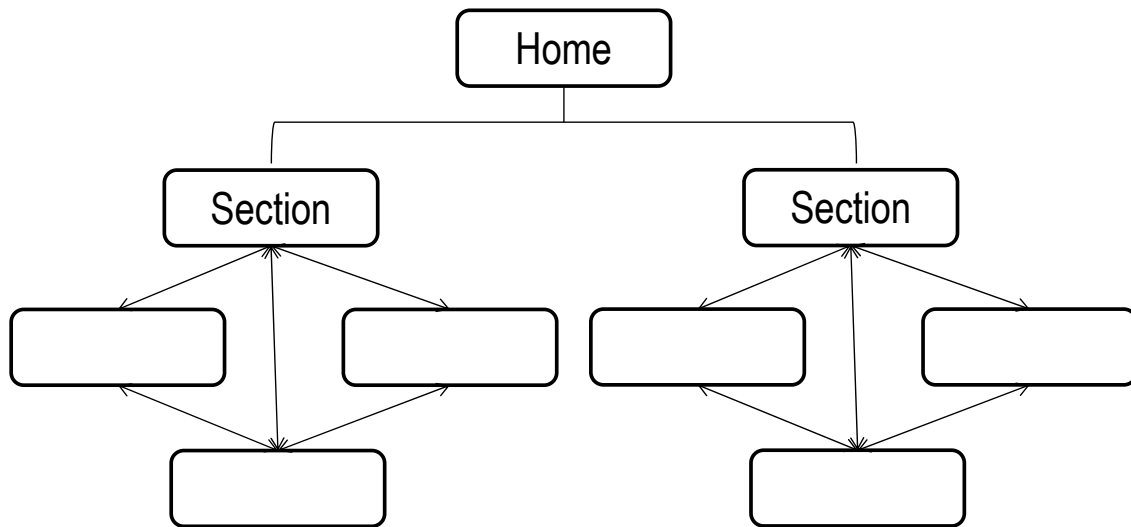
e.g. tutorial structure



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Structure: Network - Clustering

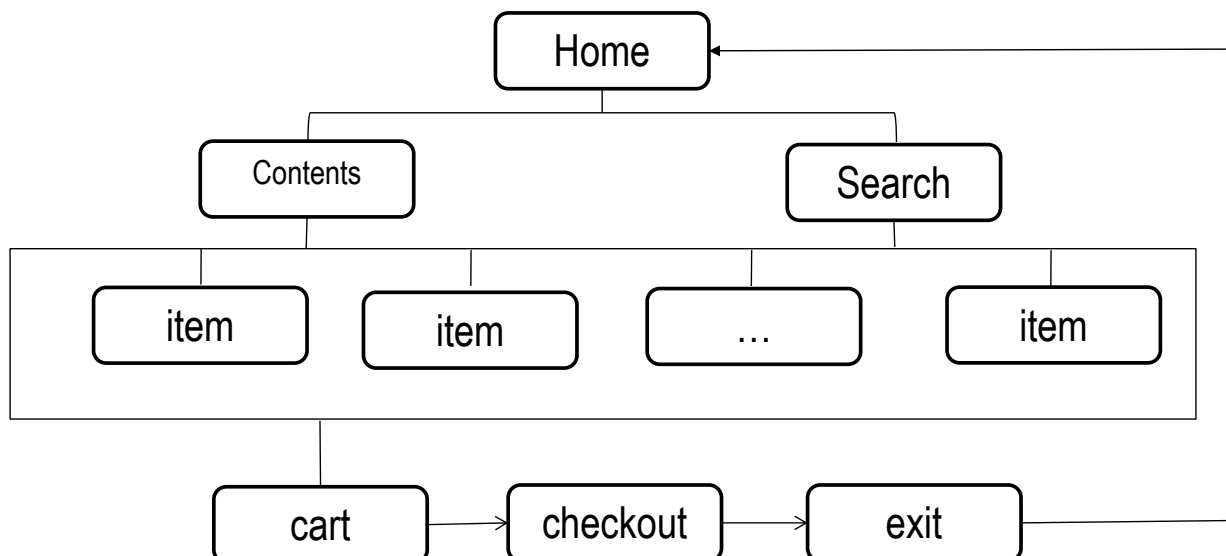
Cluster structure encourages exploration within a section. Make sure all pages in each section include a clear navigation bar



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Structure: Network - Catalogue

Catalogue structure supports shopping cart system. Make sure all items include a clear navigation bar



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ACCESSIBILITY: WCAG 2.0

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WCAG 2.0

- **W**eb **C**ontent **A**ccessibility **G**uidelines
- 12 guidelines that are organized under 4 principles: ***perceivable, operable, understandable, and robust.***
- WCAG is a stable, referenced technical standard

<https://www.w3.org/WAI/>

- Endorsed for all Australian Government websites
 - ☐ This is one of the mandatory requirements for Australian Government agencies to consider when developing and maintaining their online presence.

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WCAG 2.0: Principles

■ 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.

■ 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

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WCAG 2.0: Principles (cont)

■ Understandable

- ☐ Make text readable and understandable
- ☐ Make content appear and operate in predictable ways
- ☐ Help users avoid and correct mistakes

■ Robust

- ☐ Maximize compatibility with current and future user tools

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Tools:

■ AChecker WCAG2 Online Validator:

<http://achecker.ca/checker/index.php>

An open source Web accessibility evaluation tool.

Can be used to review the accessibility of Web pages
variety of international web accessibility guidelines



■ Total Validator: <http://www.totalvalidator.com/index.html>

An accessibility validator, (as well as an (X)HTML validator, a spell checker, and a broken links checker etc.) allowing one-click validation of your website.