SWINBURNE UNIVERSITY OF TECHNOLOGY

COS10011
Creating Web Applications

Lecture 3b – Design for Usability

Acknowledgement: The contents in this document was adopted from learning material prepared by Alan Colman (Convener, SUT)
Last Update: 1 Feb 2017 by Jeffery Sijore

Contents

Design for Usability

- Web Page Design
- Web Site Design
- Accessiblility

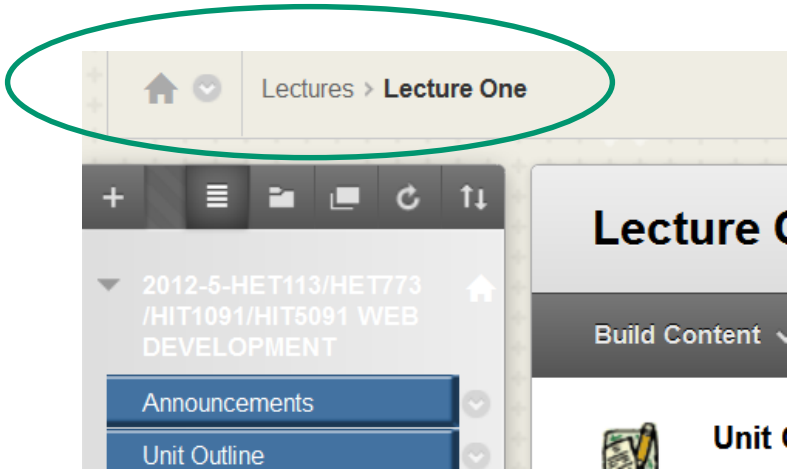
Usability: Web Design Consideration

- 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**

Best Practices: Ease of Navigation

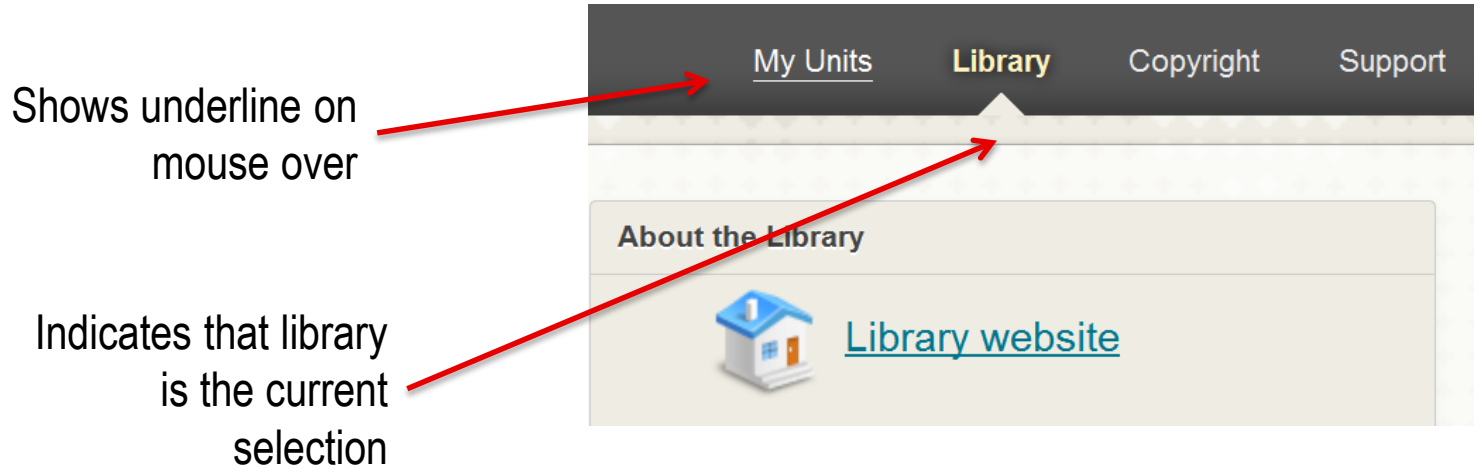
- **Breadcrumbs** or **breadcrumb trail** allows users to keep track of their locations within programs or documents.
- Breadcrumbs typically appear horizontally across the top of a web page, often below title bars or headers.
- Provide a site map or

  site search feature



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



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 1 ?
- 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

Best Practices: Text Design

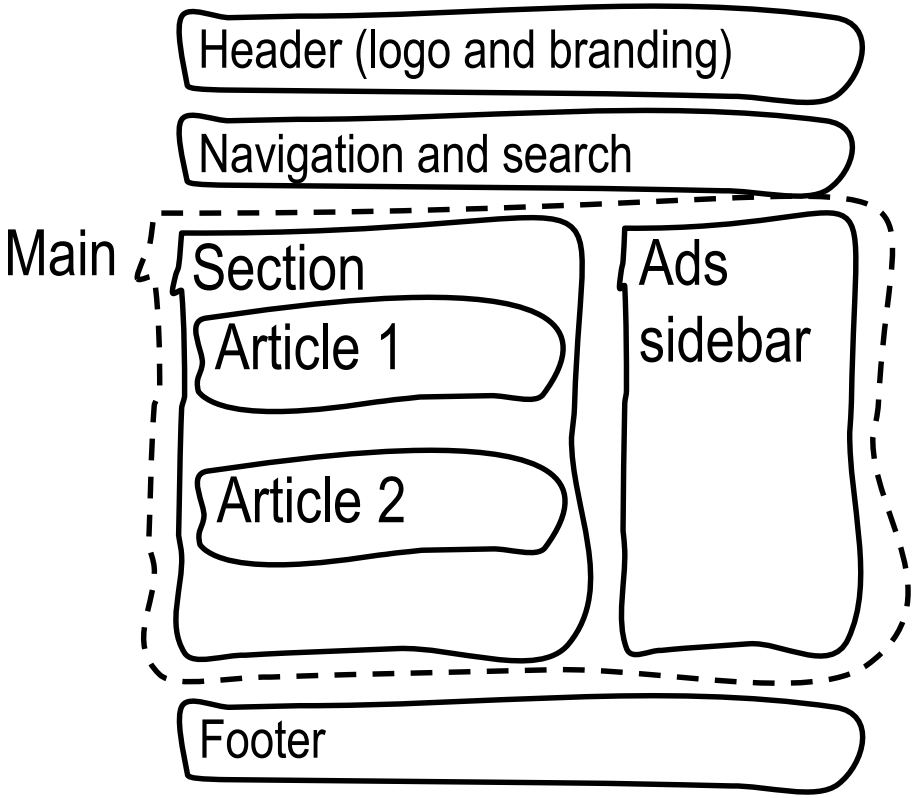
- Use common fonts, sans serif fonts are easier to read on screen, serif fonts were designed for printing
- FANCY FONTS can hard to read
- Letters with more horizontal space are easier to read online e.g. Verdana
- Screen resolution is lower than paper, ensure fonts big enough
- Provide enough contrast 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 than adding extra words like "Click here“

Best Practices: Colour and Images

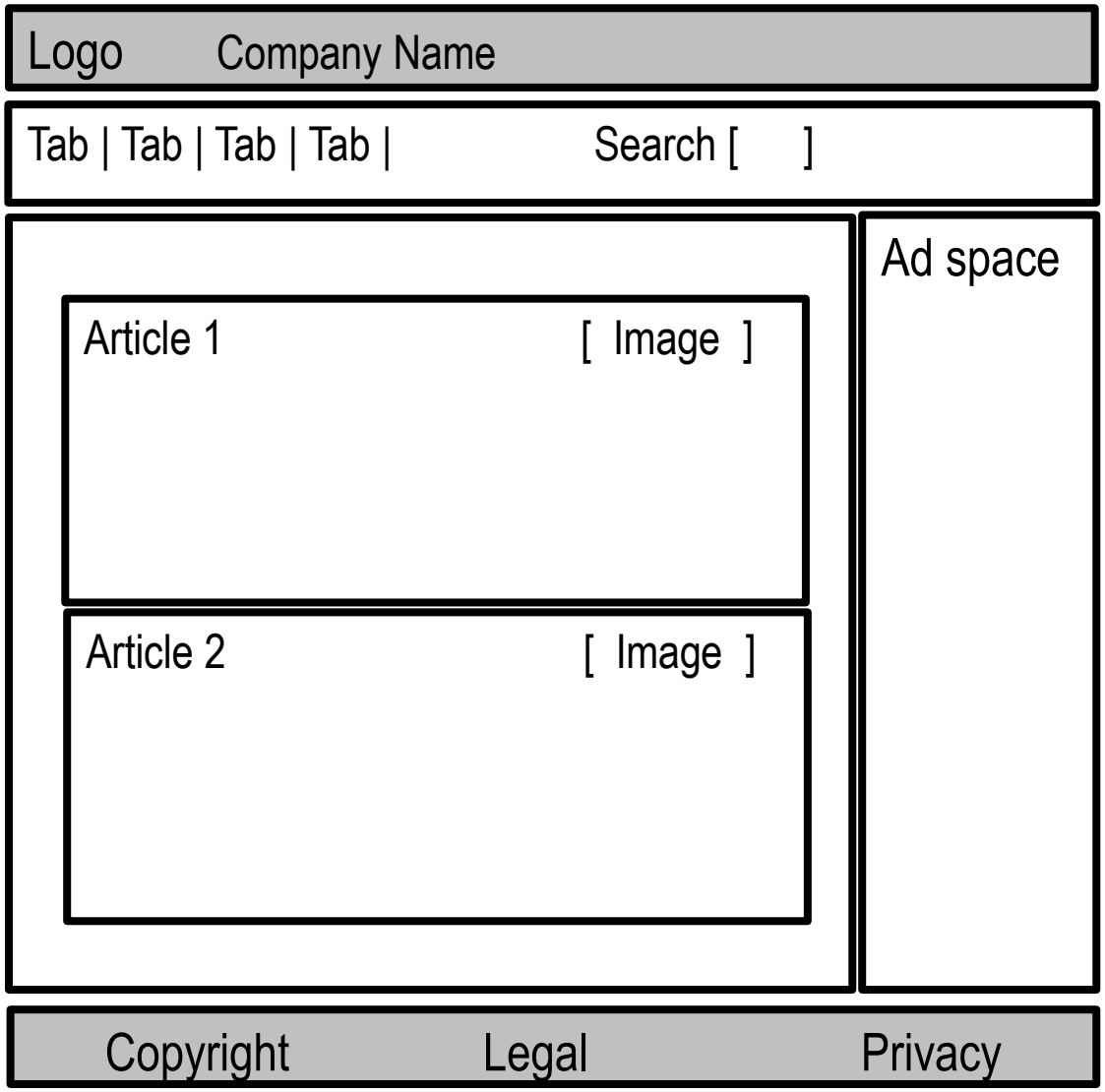
- Choose colours from the Web Colour Palette to have the most consistent display
- Use only necessary images
- Keep both file size and dimension of images small
- Ensure that site is usable if images are not displayed

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



Graphic Design Process : Wireframe



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

DESIGN:
WEBSITE STRUCTURE (ORGANIZATION)

Website Structure (Organisation)

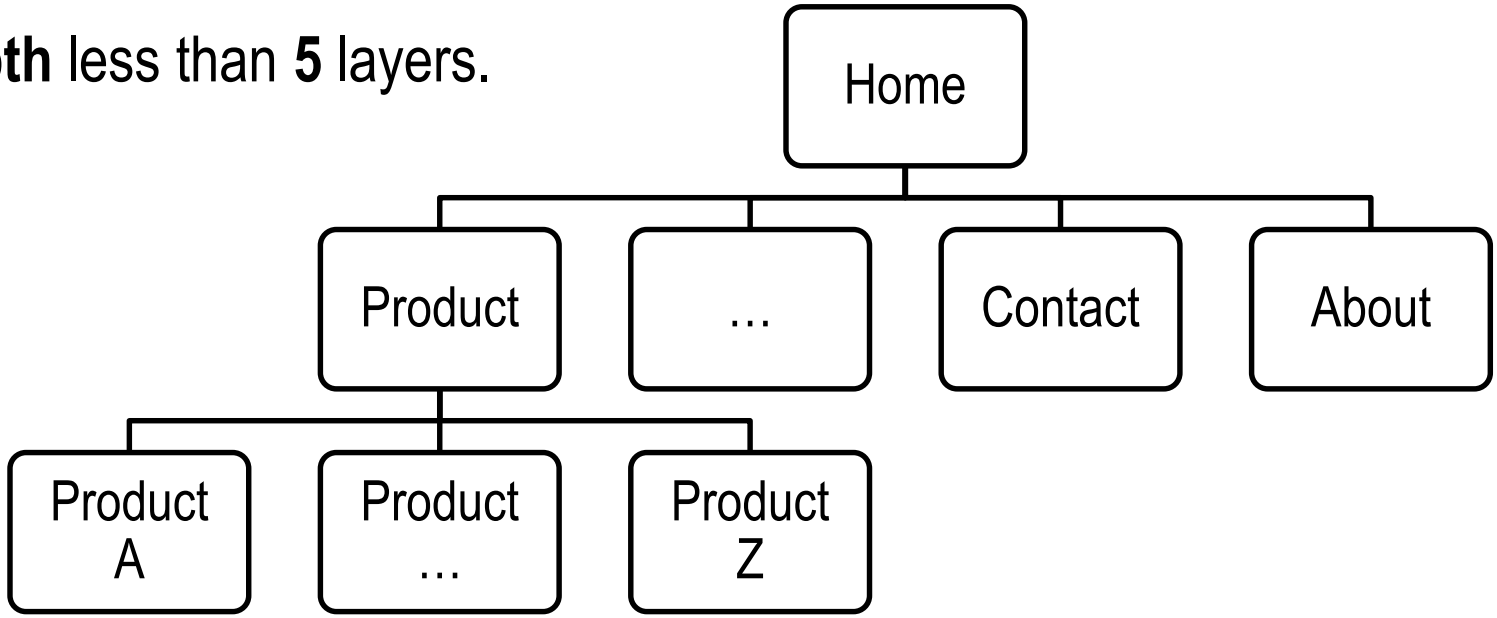
- Organise the website based on the site's **content and user experience** of connections
- Understand its effects on navigation
  - site **structure**, **menu** depth, **navigation** aids/tools
- Common information structure or website organisation
  - **Hierarchical -** *Tree*
  - **Linear -** *Linear,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

http://webstyleguide.com/wsg3/3-information-architecture/index.html

Web Style Guide – Information Architecture

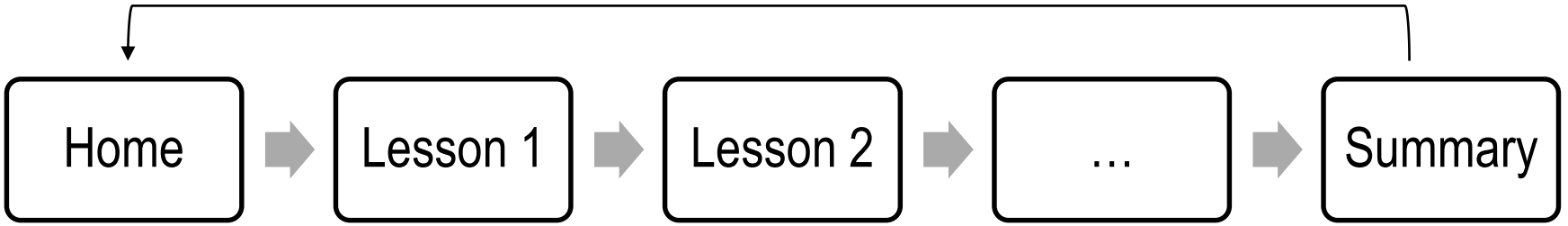
Structure: Hierarchical

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



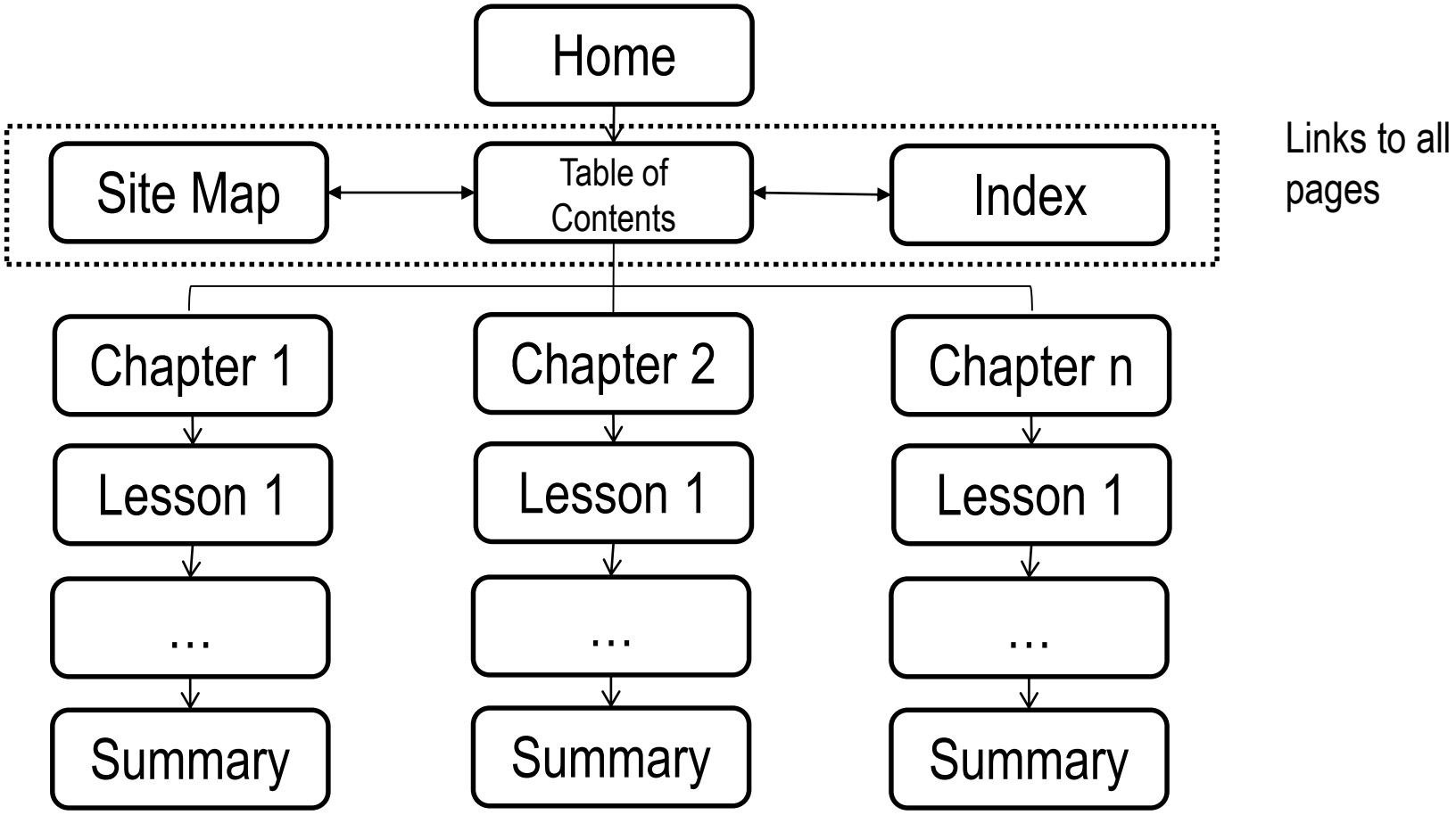
Structure: Linear

- 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.



Structure: Combining Hierarchical and Linear

e.g. tutorial structure

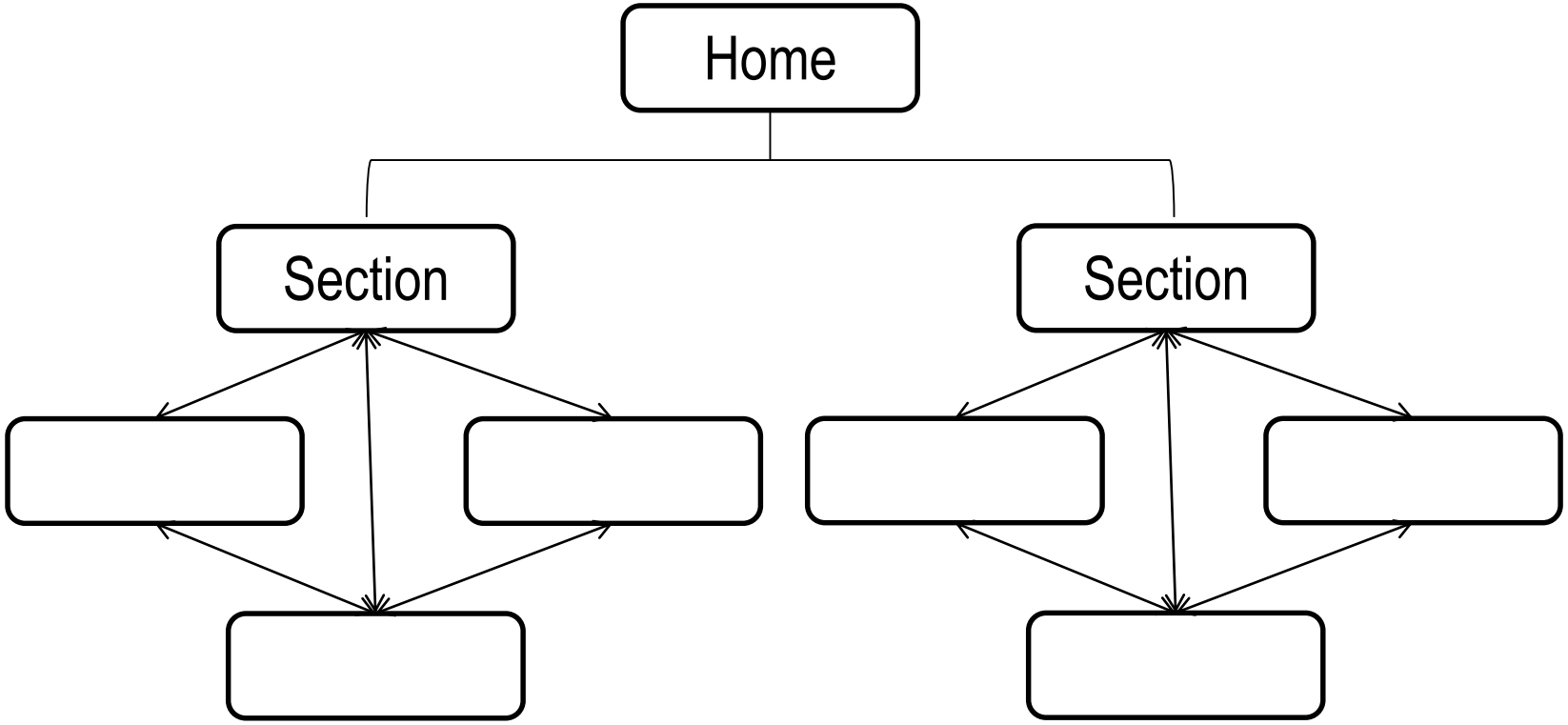


Structure: Network

- 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.

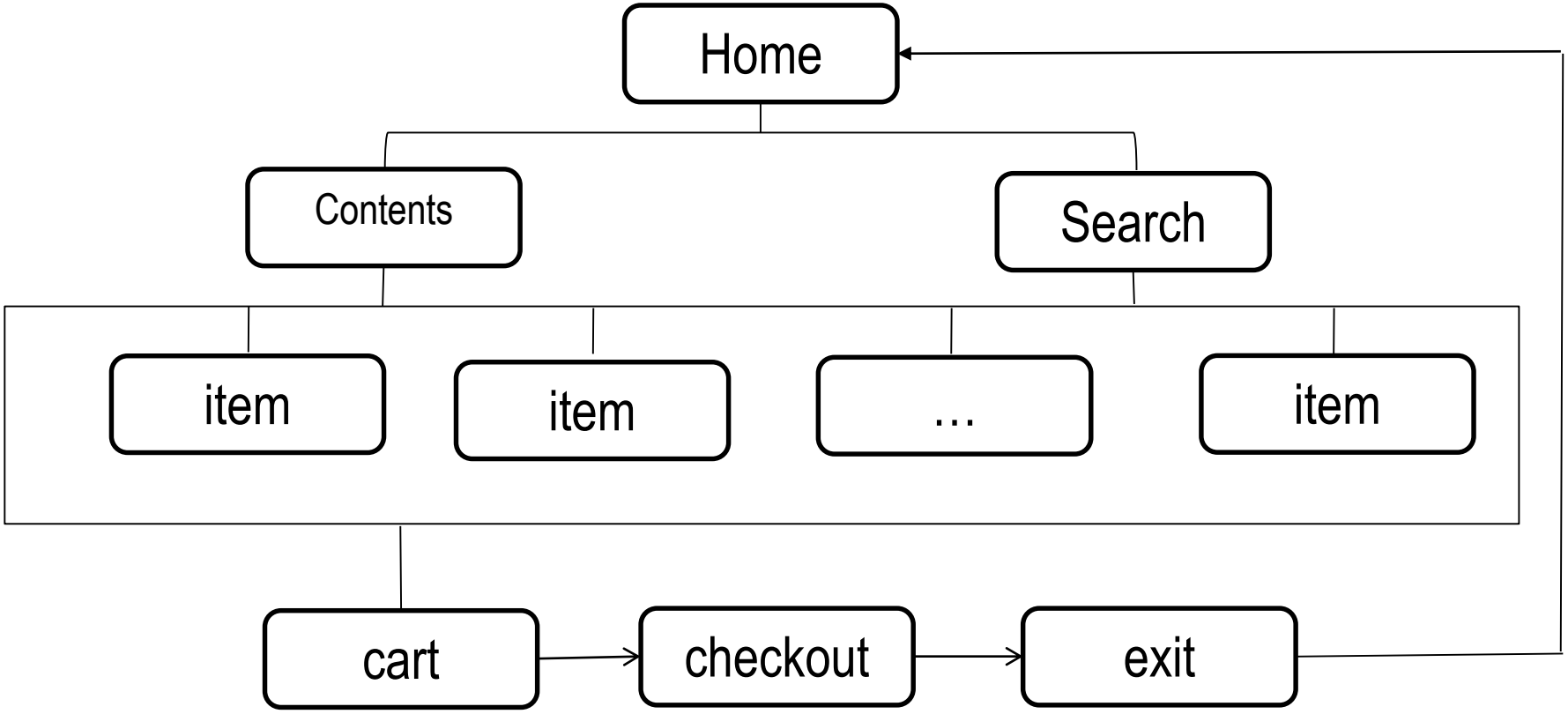
Structure: Network - Clustering

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



Structure: Network - Catalogue

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



ACCESSIBILITY: WCAG 2.0

WCAG 2.0

- **W**eb **C**ontent **A**ccessibility **G**uidelines
- 12 guidelines that are organized under 4 principles: perceivable, operable, understandable, and robust.
- 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.

Refer to: http://webguide.gov.au/mandatory-requirements/

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

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

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 based on a 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. *Can be added to Firefox and/or installed stand alone.*

- **Web Accessibility Checklist 2.0:** https://www.wuhcag.com/wcag-checklist/
  Provides a useful 'how to' process for evaluating webpages and suggestions for addressing WCAG 2.0 guidelines

- ***WAVE:*** http://wave.webaim.org/
  Facilitates human evaluation by embedding inline accessibility feedback into your web content