SWINBURNE UNIVERSITY OF TECHNOLOGY

COS10026
Computing Technology Inquiry Project

Design for Usability

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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

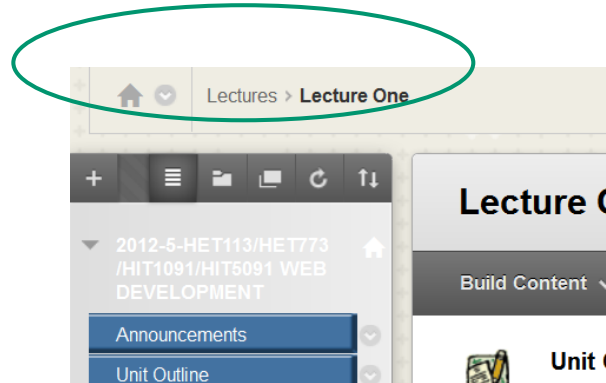- Web Page Design

- Web Site Design

- 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**
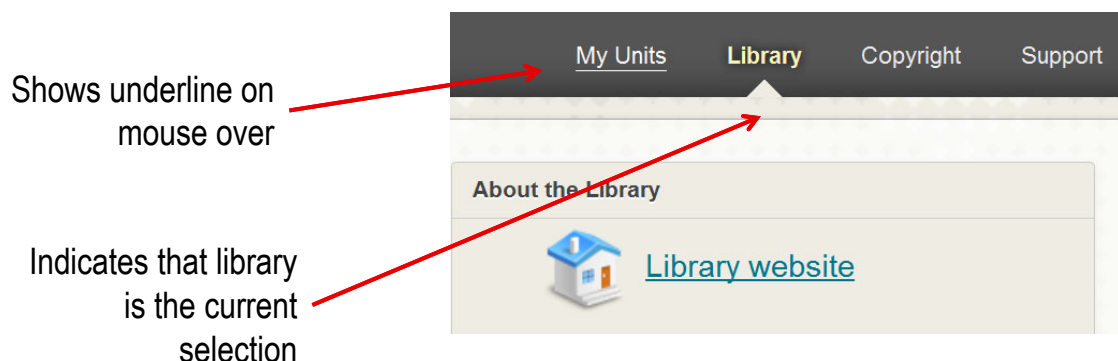
Best Practices: Ease of Navigation

- **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

Shows underline on mouse over

Indicates that library is the current selection

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

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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.
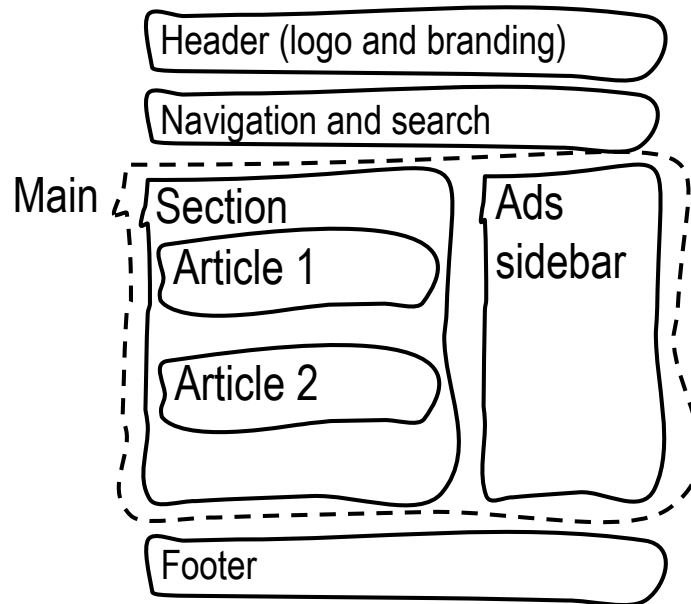 Avoid adding extra links with words like "Click here"

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'

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

Header (logo and branding)

Navigation and search

Main

Section

Article 1

Article 2

Ads sidebar

Footer

Graphic Design Process : Wireframe

Logo	Company Name

Tab | Tab | Tab | Tab | Search [   ]

Ad space

Article 1   [Image]

Article 2   [Image]

Copyright   Legal   Privacy
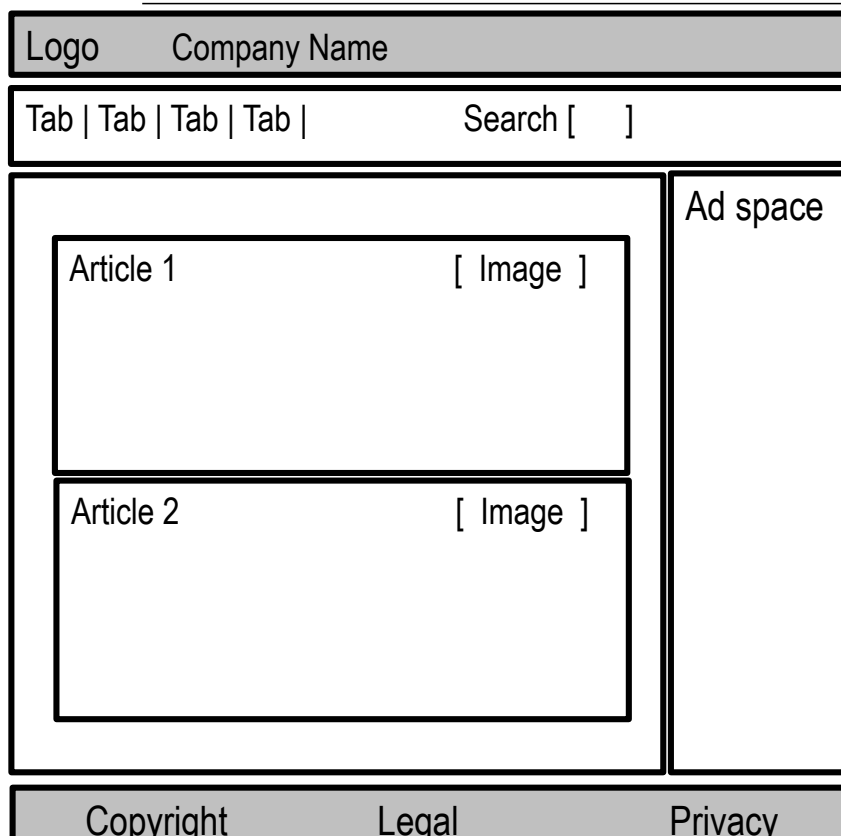
- Wireframe shows a more complete version of the page design

- 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
  - □ **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
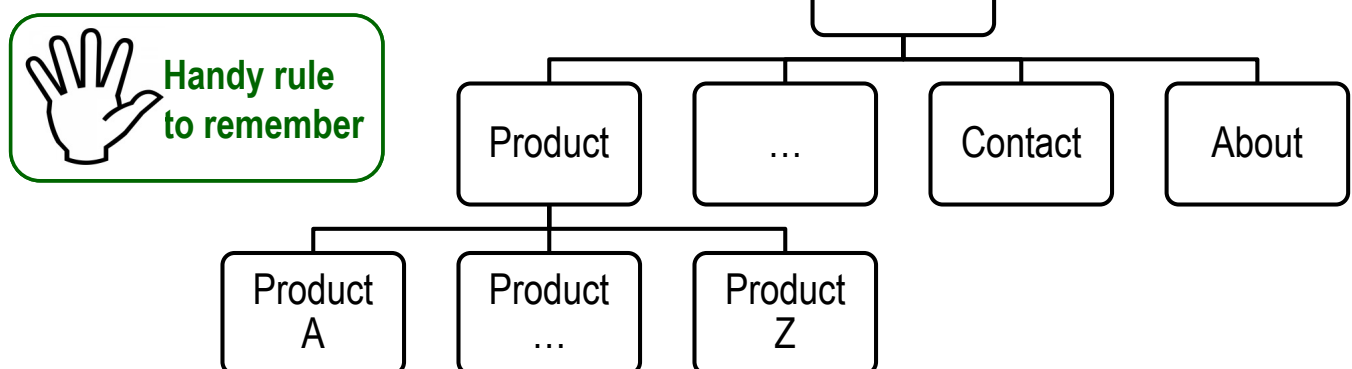**Web Style Guide – Information Architecture**

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: 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.

✋ **Handy rule to remember**

Home
- Product
  - Product A
  - Product …
  - Product Z
- …
- Contact
- About

Structure: Linear

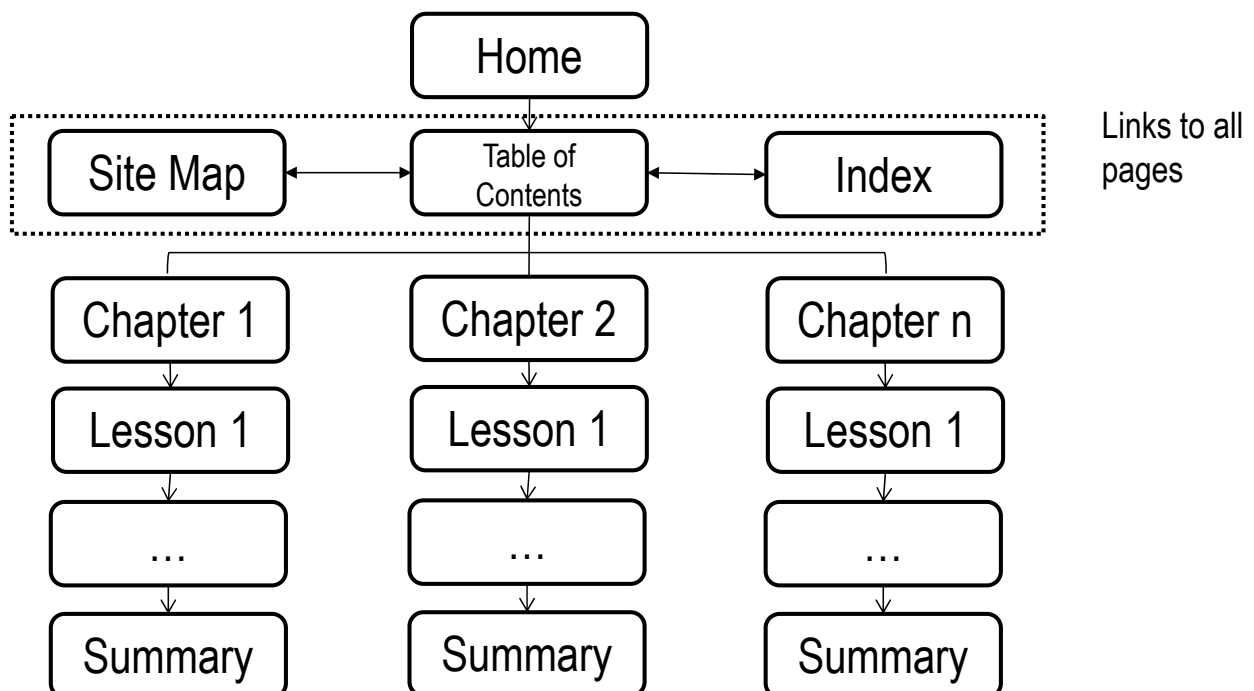- *Linear structure* supports **forward** and **back** movement through a *sequence* of Web pages.

- 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.
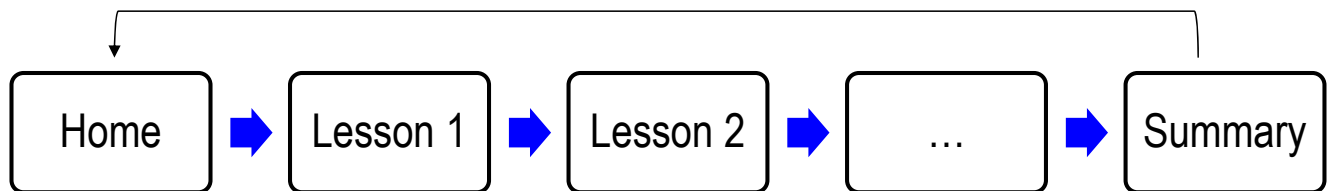
Home ➡ Lesson 1 ➡ Lesson 2 ➡ ... ➡ Summary

Structure: Combining Hierarchical and Linear

e.g. tutorial structure

```
                           Home
                            |
    Site Map  ←→  Table of Contents  ←→  Index        Links to all
                                                        pages
        |              |               |
   Chapter 1      Chapter 2       Chapter n
        |              |               |
   Lesson 1       Lesson 1        Lesson 1
        |              |               |
      ...            ...             ...
        |              |               |
   Summary        Summary         Summary
```
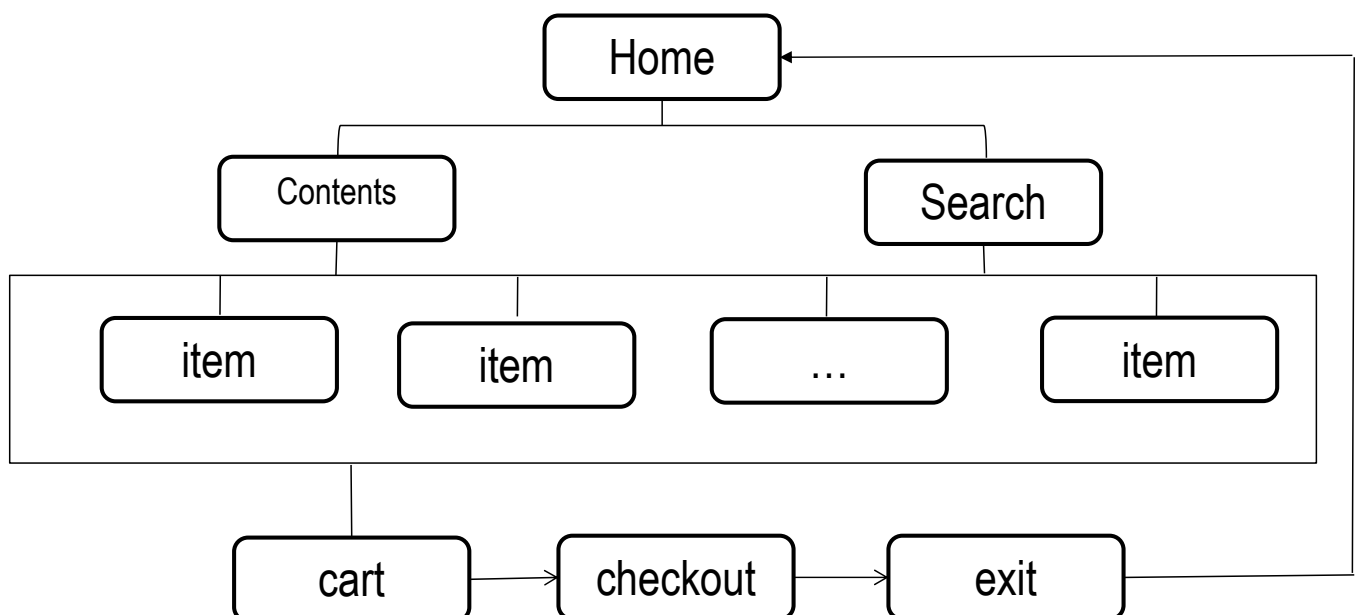
Structure: Network - Clustering

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

```
                          ┌──────────┐
                          │   Home   │
                          └──────────┘
             ┌──────────┐              ┌──────────┐
             │ Section  │              │ Section  │
             └──────────┘              └──────────┘
      ┌────────┐    ┌────────┐   ┌────────┐    ┌────────┐
      │        │    │        │   │        │    │        │
      └────────┘    └────────┘   └────────┘    └────────┘
             ┌──────────┐              ┌──────────┐
             │          │              │          │
             └──────────┘              └──────────┘
```
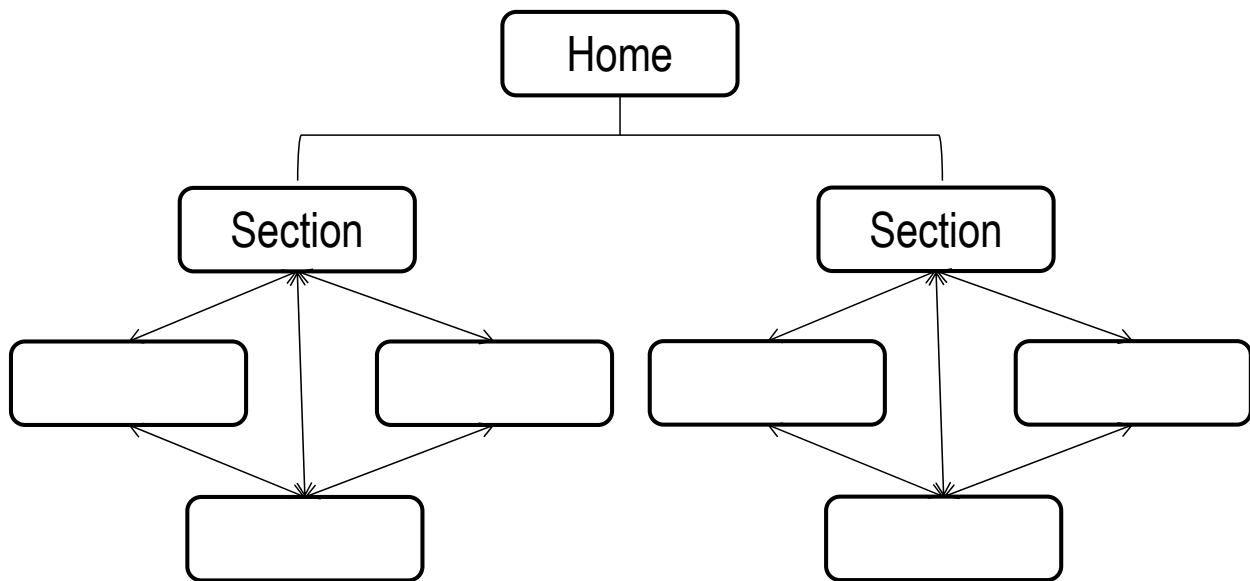
Structure: Network - Catalogue

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

```
                    ┌──────────┐
                    │   Home   │◄─────────────┐
                    └──────────┘              │
         ┌────────────┐        ┌──────────┐   │
         │  Contents  │        │  Search  │   │
         └────────────┘        └──────────┘   │
   ┌────────┐  ┌────────┐  ┌────────┐  ┌────────┐
   │  item  │  │  item  │  │   …    │  │  item  │
   └────────┘  └────────┘  └────────┘  └────────┘
   ┌────────┐  ┌──────────┐  ┌────────┐
   │  cart  │─►│ checkout │─►│  exit  │─────────┘
   └────────┘  └──────────┘  └────────┘
```

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*.

- 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.

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:

  https://achecker.achecks.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.