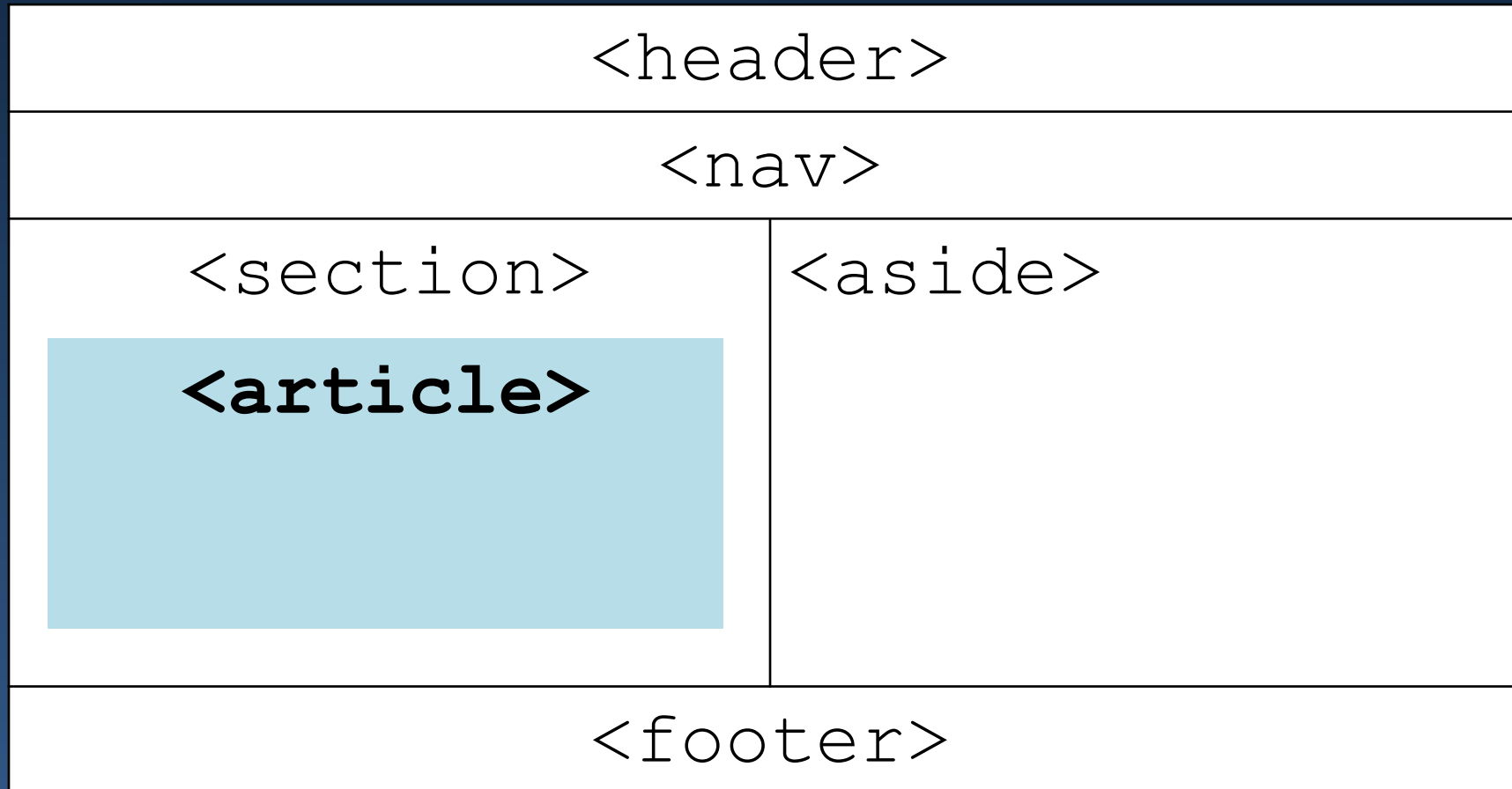


Web Technology

Lecture 20 – Website tools

HTML5 – Structural Elements



HTML5 – Audio and Video

```
<video width="320" height="240" controls="controls">  
  <source src="movie.mp4" type="video/mp4" />  
  <source src="movie.ogv" type="video/ogg" />  
  Your browser does not support the video tag.  
</video>
```

```
<audio controls="controls">  
  <source src="song.ogg" type="audio/ogg" />  
  <source src="song.mp3" type="audio/mpeg" />  
  Your browser does not support the audio element.  
</audio>
```

HTML5 – Other elements

- **<meter>** measure data within a given range
`<meter value="2" min="0" max="10">2 out of 10</meter>`
- **<progress>** represents the progress of a task
`<progress value="22" max="100"></progress>`
- **<time>** to encode dates and times in a machine-readable way
`<p>We open at <time>10:00</time>.</p>`

HTML5 – Drag & Drop

- Allows objects to be dragged and dropped onto a target.

```
<img draggable="true" />
```

- When the dragged element is dropped, a drop event occurs.

```
function drop(ev)
{
var data=ev.dataTransfer.getData("Text");
ev.target.appendChild(document.getElementById(data));
ev.preventDefault();
}
```

HTML5 – Simple Client Storage

- The *localStorage* DOM attribute allow each site to store data

```
localStorage.surname="Smith";  
document.getElementById("result").innerHTML=  
    "Surname: " +  
    localStorage.surname;
```

- **sessionStorage** store data for only one session

```
sessionStorage.surname="Smith";
```

HTML5 – Structured Client Storage

- HTML5's Web Storage module provides a SQL server within the client.

```
tx.executeSql('SELECT * FROM Customers',[]),  
function(tx, rs) {  
    for (var i = 0; i < rs.rows.length; i++) {  
        ... rs.rows[i];  
    }  
}
```

HTML5 - Canvas

- Provides an API for drawing directly in the browser window using vector-based shapes and lines.

```
<canvas id="myCanvas"></canvas>
```

```
<script type="text/javascript">  
    var canvas=document.getElementById('myCanvas');  
    var ctx=canvas.getContext('2d');  
    ctx.fillStyle='#FF0000';  
    ctx.fillRect(0,0,80,100);  
</script>
```


WEB DEVELOPMENT IDE

Web Development IDEs

- Integrated Development Environment
- HTML, PHP, CSS, JavaScript/jQuery Editor
- Debugging capabilities
- Some have WYSIWYG capabilities "What You See Is What You Get".
 - You can edit the presentation of your document directly.
- Desktop Applications or Web based.

Web Development IDEs

- Adobe Dreamweaver
 - Support both WYSIWYG and direct editing
 - Support PHP, HTML, CSS, JavaScript syntax
- Aptana Studio (www.aptana.com/)
 - Open source Web development IDE
 - Supports PHP, HTML, CSS, JavaScript and more
- NetBeans (Oracle)
 - Open source multi-purpose IDE
 - Supports most languages (JSP, PHP, HTML5, CSS, Python, Ruby)

Aptana - animation.js - Aptana Studio Professional 1.0.0

File Edit Navigate Search Project Run Scripts Window Help

Sync Manager

Project

- abc
 - lib
 - YahooUI
 - animation
 - animation.js
 - animation-debug.js
 - animation-min.js
 - README
 - assets
 - autocomplete
 - base
 - button
 - calendar
 - colorpicker
 - connection
 - container
 - datasource
 - datatable
 - dom
 - dragdrop
 - editor
 - element
 - event
 - fonts
 - grids
 - history
 - imageloader
 - logger
 - menu
 - reset
 - reset-fonts-grids
 - slider
 - tabview
 - treeview
 - utilities
 - yahoo
 - yahoo-dom-event
 - yuiloader
 - yuitest
 - yahooui_sample.css

animation.js

```

/*
Copyright (c) 2007, Yahoo! Inc. All rights reserved.
Code licensed under the BSD License:
http://developer.yahoo.net/yui/license.txt
version: 2.3.1
*/

/*
Copyright (c) 2006, Yahoo! Inc. All rights reserved.
Code licensed under the BSD License:
http://developer.yahoo.net/yui/license.txt
*/

/**
 * The animation module provides allows effects to be added to the DOM.
 * @module animation
 * @requires yahoo, event, dom
 */

/**
 * Performs a merge sort
 * @param {Object} a - list to sort
 * @param {Object} b - comparator
 */
function mergeSort(a,b) {}

/**
 * Performs a bubble sort
 * @param {Object} a
 * @param {Object} b
 */

/**
 * Base animation class that provides the interface for the animation module.
 * <p>Usage: var myAnim = new YAHOO.util.Anim(el, { width: 100, height: 100 });
 * @class Anim

```

Outline

Filter:

- mergeSort(a, b)
- bubbleSort(a, b)
- YAHOO
- Y
- superclass
- proto
- translateValues(val, start)
- isset(prop)

Source

Snippets Visual ScriptDoc

animation.js mergeSort(a,b)

bubbleSort(a,b)

isset()

mergeSort(a,b)

proto

superclass

translateValues

Y

YAHOO

mergeSort

Performs a merge sort

Returns

void

Parameters

a (a) - list to sort

b (b) - comparator

Validation Console

0 problems

Description	Resource

CONTENT MANAGEMENT SYSTEMS

Web Content Management Systems (WCMS)

- A software system that provides:
 - Website authoring tools
 - Collaboration tools
 - Administration tools
- Used to manage websites by users with little knowledge about web technologies
- Usually database-driven

WCMS Capabilities

- Automated templates
- Access Control
- Scalable expansion
- Easily editable content
- Scalable feature sets
- Web standards upgrades
- Collaboration
- Document management
- Content syndication
- Multilingual
- Versioning
- Searching

WCMS

Advantages / Disadvantages

- Low Cost
- Easy Customisation
- Easy to use
- Workflow management
- Cost of implementation
- Cost of maintenance
- Storage Volume
- Latency issues
- Tool Mixing

WCMS

- Drupal (www.drupal.org)
 - The Economist (<http://www.economist.com/>)
 - The White House (<http://www.whitehouse.gov/>)
 - IT Dashboard (<http://www.itdashboard.gov/>)
- Joomla! (<http://www.joomla.org/>)
 - MTV Networks Quizilla (Social networking) - <http://www.quizilla.com>
 - Harvard University (Educational) – <http://gsas.harvard.edu>
 - Citibank (Financial institution intranet) - Not publicly accessible
 - Outdoor Photographer (Magazine) – <http://www.outdoorphotographer.com>
- WordPress <http://wordpress.org/>
 - Playstation Blog (<http://blog.playstation.com/>)
 - Flickr Blog (<http://blog.flickr.net/>)
 - Mozilla Labs (<http://mozillalabs.com/>)
 - Tom Jones (<http://www.tomjones.com/>)

SEARCH TOOLS

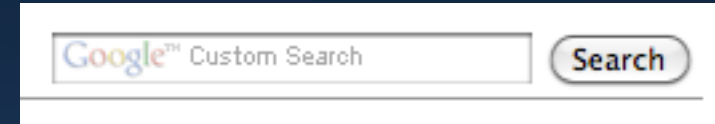
Website Search Tool

- To be of value, your website must be accessible
- Some visitors finds pre-arranged navigation quite useful
- Others might use your website for reasons you can not anticipate
- Gives the chance to find information by searching
 - Like google, yahoo, etc.
- Many CMS already have search facilities

Who needs a Site Search Tool

- Sites with valuable data distributed in many pages
- Sites with many visitors
- Sites with deep hierarchy
- Constantly growing websites
- Sites that cover many topics

Google Custom Search



- www.google.com/cse/
- Use the power of google to create a search facility for your website
- You can include one or more websites or specific webpages
- Customise the look and feel of the results to match your site
- Can make money with related ads

Sphider

- <http://www.sphider.eu/>
- open-source web spider and search engine
- PHP based search engine
- You can integrate it directly into your website
- Search PDF, DOC, PPT, XLS, SWF, JPG, GIF, and many other file types.

Develop your own

```
018 $trimmed = trim($var);
019 //separate key-phrases into keywords
020 $trimmed_array = explode(" ", $trimmed);
021
022 // check for an empty string and display a message.
023 if ($trimmed == "") {
024     $resultmsg = "<p>Search Error</p><p>Please enter a search...</p>" ;
025 }
026
027 // check for a search parameter
028 if (!isset($var)){
029     $resultmsg = "<p>Search Error</p><p>We don't seem to have a search parameter! </p>" ;
030 }
031 // Build SQL Query for each keyword entered
032 foreach ($trimmed_array as $trimm){
033     // EDIT HERE and specify your table and field names for the SQL query
034     $query = "SELECT * FROM tablename WHERE field1 LIKE '%$trimm%' OR field2 like '%$trimm%'
OR field3 like '%$trimm%' ORDER BY field1  DESC" ;
035     // Execute the query to get number of rows that contain search keywords
036     $numresults=mysql_query ($query);
037     $row_num_links_main =mysql_num_rows ($numresults);
038
039     // next determine if 's' has been passed to script, if not use 0.
040     // 's' is a variable that gets set as we navigate the search result pages
```

ACCESSIBILITY

Web Accessibility

"Web accessibility refers to the inclusive practice of removing barriers that prevent interaction with, or access to websites, by people with disabilities. When sites are correctly designed, developed and edited, all users have equal access to information and functionality."

-- Wikipedia

Why should I make my website accessible?

- Increase your customer base
- It's a good thing to do morally
- It's the **law**:
- 2.2 (p7): “The Disability Discrimination Act makes it unlawful for a service provider to discriminate against a disabled person by refusing to provide any service which it provides to members of the public.”
- Sydney Olympics Website successfully sued by a blind man over their inaccessible website

What assistive technologies are there?

- Screen Readers
- Braille Terminals
- Screen Magnification Software
- Speech Recognition software
- Keyboard overlays
- Subtitles

How can websites be more accessible?

- Choosing content management systems which support accessibility
- Use headings correctly to organize the structure of your content
- Include proper alt text for images
 - Use divs with css background-images for pure decoration where possible

Accessibility (2)

- Give links descriptive names, and use the title attribute
 - Avoid: "click here to see a full product listing"
 - "To see a full list of our products, please visit our products directory"

```
<a href="productlisting.html" title = "product listing"> ... </a>
```

- Use colour with care
 - Avoid using colour as the sole indicator for important things (required fields)
 - But using colours helps with distinguishing content, use whitespace around sections too

Accessibility (3)

- Make sure form fields have appropriate labels
 - Those with screen readers cannot see what the fields look like!
- Ensure the tab order is the same as the visual order
- Use fieldsets to group related form fields together
- Use ARIA tags to indicate required fields

Accessibility (4)

- Use tables for tabular data, not for layout
- Ensure that content can be accessed using the keyboard, and in a logical way
- Make sure your dynamic content is accessible
 - Use ARIA roles to highlight dynamic content
 - Don't autoplay videos or music
 - Make sure videos have subtitles (closed captions)

ARIA roles

- Use the "role" attribute on HTML5 elements to give meaning to page elements:
 - `<header role="banner">`
 - `<form role="search">`
 - `<footer role="contentinfo">`
 - `<input type="text" required aria-required="true">`
- More information:

<https://developer.mozilla.org/en-US/docs/Web/Accessibility/ARIA>

OTHER RESOURCES

Stock Photos/Icons

- <http://www.istockphoto.com/> (pay per photo)
- Flickr (use CC images)
- <http://www.freedigitalphotos.net/> (pay high quality photos only)
- <http://www.sxc.hu/> (royalty free photos)
- <http://www.freeiconsweb.com/>
- Bing and Google image search provide options to show public domain/CC images only

CAPTCHA (<http://www.google.com/recaptcha>)

- CAPTCHA (Completely Automated Public Turing to tell Computers and Humans Apart)
- use of images which humans can identify
- ensure an automated bot/computer program isn't accessing your application



CAPTCHA controversy

- CAPTCHA has been criticised for its accessibility
- Some advocate abandoning it in favour of using other metrics:
 - Hidden input fields that should be left blank
 - Time taken to complete the form
 - Ensuring the form submission originated from your own website

Maps

- Display information from your website in an interactive map
- <http://www.ammmap.com/>
(Amap)
- <http://code.google.com/apis/maps/index.html>
(Google Maps API)
- <http://openlayers.org/>
(OpenLayers)

