HTML

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Learning Outcomes

• Develop a basic webpage
HTML/XML

• HTML is based on the XML standards
  – HTML is an SGML (Standard Generalized Markup Language) application conforming to International Standard ISO 8879, and is widely regarded as the standard publishing language of the World Wide Web.
  – XML is a way to describe and manipulate a document separate from the formatting.
  – XML is relatively easy to introduce new elements or additional element attributes.
HTML/XML

• Consists of a variety of tags that are inserted around the text and serve as an instruction for the presentation of that piece of text.

• These tags are contained within angle brackets and the closing tag is placed at the end of the text to which it applies, e.g.

  <em> This is text to be emphasised. </em>

A typical browser would render this on screen in the prevailing font as

This is text to be emphasised.
HTML Elements

• Consist of:
  – Element name
  – Attributes
  – Text

  \(<\text{elementname} \ attr1=“value” \ attr2=“value”>TEXT</\text{elementname}>\)

• Nesting:

  \(<\text{element1}>\text{element2}</\text{element2}>\text{element1}>\)

• Top element is called the root element
While most tags come in pairs, singlets can occur such as a forced line break: `<br/>`. These must have the closing tag included within them.

- All Tags must be in lower case only.
- Nesting must also be correctly ordered,

  `<strong><em> The Main Man </em></strong>` correct

  `<strong><em> The Main Man </em></strong>` incorrect
Creating a web page

• You need to tell the browser that the document it is just about to receive is an HTML page, and that it has a header, and a body. The tags for this are:

<html> (start of html document)
  <head> (start of header)
    <title> Slartibartfast’s web page</title>
  </head> (end of header)
  <body> (start of body)

  </body> (end of body)
</html> (end of html document)
HTML5

– Latest version of HTML
– Aim was to increase features to enable richer application development, and to codify (make formal) some common practices
– Adheres to (strict) XML standard, and so officially includes the DOCTYPE (also works when omitted, but then does not parse with an XML parser)

<!DOCTYPE HTML>
<html>
...
</html>
Header

- The `<head>` control of an XHTML page appears shortly after the `<html>` tag.
- It contains information about the document that is not usually visible on the screen and is used to determine certain characteristics of the page, controlling some of its functions.
- It can include meta tags which contain the key words used by search engines.

```
<meta name= "keywords" content= "….."/>
```
Body

• The <body> contains all of the content that will be visible when viewed through a browser
  – includes text,
  – links to images and multi-media elements.
  – It can also include information specifying elements such as background colour, text colour, etc.

• Once the text file has been saved with the extension .html it can then be opened in a web browser.

• Every time an html file is altered it has to be saved before the changes can be viewed through a browser, but it need not be closed.
Basic text elements: Headings

• `<h1>` heading creates the largest heading and `<h6>` the smallest.
  – These are in styles predefined in the browser you are using.

  `<h1>` The top level heading `</h1>`

  `<h2>` The next level down heading `</h2>`
Basic text elements: Paragraph

<p> is used to indicate the start of the paragraph.

</p> is used to indicate the end of the paragraph.

• If there is no text then <p> </p> inserts a break that is approximately two lines in size.
Basic text elements

• **Line breaks:** `<br/>` places text on the next line down.
  – To avoid line breaks (e.g. between words in a label) insert a non-breaking space exactly like this `&nbsp;`

• **Horizontal line:** `<hr/>`.
  
  To specify width: `<hr width= "50\%"/>`
  
  or measured in pixels `<hr width= "245"/>`.

• The default for the thickness of a line is 2 pixels. This can be altered by using `<hr size="10\“ />`
Basic text elements: Special characters

• There are a number of special characters, that are used in XHTML `<>/” for example.
• To use get these symbols to display as text we must use the a set string.
  – an ampersand use `&amp;`;
  – Less than use `&lt;`;
  – Greater than use `&gt;`;
  – Em Dash use `&#8212;`;
  – quotation mark use `&quot;`
Unordered List

• a bulletted list,
  <ul>
    <li> the first list item </li>
    <li> the second list item </li>
    <li> the third list item </li>
  </ul>

looks like

•  the first list item
•  the second list item
•  the third list
Ordered list

<ol>
  <li> the first list item </li>
  <li> the second list item </li>
  <li> the third list item </li>
</ol>

looks like

1. the first list item
2. the second list item
3. the third list item
Nested List

<ol>
  <li> the first list item </li>
  <li> the second list item <ul>
    <li> first nested item </li>
    <li> second nested item </li>
  </ul>
  </li>
  <li> the third list item </li>
</ol>
Tables

```
<table boarder = "1" >
<tr>  (table row)
    <td> row1 column 1 </td>
    <td> row1 column 2 </td>
</tr>
<tr>
    <td> row2 Coolum 1 </td>
    <td> row2 column 2 </td>
</tr>
</table>
```
Images

- Images can be incorporated into a web page using the `<img src />` singleton tag but you have to tell the web browser where to look for the image.
- If the image is contained within the same folder or directory use the code:
  `<img src= "xxx.jpg" width= "144" height= "50“ />`
- To display images from another folder in your web page:
  `<img src= "/images/xxx.gif" width= "33" height= "32"/>`
- If the image is on another server, then the complete URL is given, providing that the user has permission to access that image:
  `<img src= "http://www.ecs.soton.ac.uk/images/xxx.gif" />`
- Note the closing tag symbol in every case.
ALT Tag

• People who can't see the image need a description they can read in its absence. You can add a short description as follows:
  
  `<img src=“dave.jpg" width= "200" height= "150" alt= "My friend Dave“ />`

• For a longer description. Assuming this has been written in the file “dave.html”, you can add one as follows using the longdesc attribute:
  
  `<img src=“dave.jpg" width= "200" height= "150" alt= "My friend Dave“ longdesc= "dave.html“ />`
Hyperlinks

- Both text and images can be used as hyperlinks.
- Links can be created to other:
  - pages within the same web site
  - locations within the same page
  - websites and e-mail addresses
Hyperlinks

• To create a hyperlink to other web pages the `<a href=>...</a>` tag needs to be used.

For example

```html
<a href= http://www.milliondollarhomepage.com/>Look at the million pixel website </a>
```

Appears as

Look at the million pixel website
Hyperlinks

• E-mail is one of the easiest ways in which visitors to your pages are able to contact you.

• To include an e-mail link on a web page use the mailing URL:

  <a href= "mailto:eg@ecs.soton.ac.uk"> Enrico Gerding
     </a>

Looks Like

Enrico Gerding
Hyperlinks

• The URL examples given above are called absolute links.

• A relative link is usually used when linking within the same server or set of pages.
Relative Links

• A link to a file within the same structure and in the same folder would have a link straight to the file name
  – e.g. `<a href= "page2.html">`
  – So having created two or three web pages you then need to link them with the anchor tag.
  – You would use the normal file hierarchy navigation. `<a href= "../Session6/page2.html"> Next </a>` indicates that the next page is found by going up the file tree by one level, and finding a directory called Session6, and within that directory will be found the page2.html file.
Relative Links

• If a link is required to a point on the same page, then that “jump” can be made providing you have marked the appropriate sections with names.

• Thus if a section is “book” marked with

```
<a name= "Introduction"> Introduction </a>
```

```
<a href= "#Introduction" > Go to the Introduction </a>
```

will provide a hypertext link to it provided the reference is on the same page.

• If we want to point to it from a different page then use

```
<a href= "page2.html#Introduction“ > to point at it.
```
Validator

- Strict HTML can be checked by uploading files to validator.w3.org/
- A W3C service to ensure that the tags conform to the standard.
Recommended Reading

- Learning web design, Part II
- http://www.w3schools.com/html