The Hypertext Markup Language (HTML)

Hamid Zarrabi-Zadeh
Web Programming – Fall 2013
Outline

• History of HTML
• HTML Document Structure
  – Document Header
  – Document Body
• HTML Tags
• Summary
History of HTML

• In 1980, Tim Berners-Lee, a physicist at CERN, proposed and prototyped ENQUIRE, a system for CERN researchers to use and share documents

• In 1990, Berners-Lee specified HTML as a simplification of SGML, and wrote the first web browser and server
## HTML Versions

<table>
<thead>
<tr>
<th>Version</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTML</td>
<td>1991</td>
</tr>
<tr>
<td>HTML+</td>
<td>1993</td>
</tr>
<tr>
<td>HTML 2.0</td>
<td>1995</td>
</tr>
<tr>
<td>HTML 3.2</td>
<td>1997</td>
</tr>
<tr>
<td>HTML 4.01</td>
<td>1999</td>
</tr>
<tr>
<td>XHTML 1.0</td>
<td>2000</td>
</tr>
<tr>
<td>HTML5</td>
<td>2012</td>
</tr>
</tbody>
</table>
HTML Example

- Minimal HTML5 document

```html
<!DOCTYPE html>
<html>
<head>
    <title>My Page Title</title>
</head>

<body>
    <p>Hello World!</p>
</body>
</html>
```
• HTML Tags
  – HTML markup tags (keywords), like `<p>` and `</p>`

• HTML Element
  – Anything between a start and end tag, including the tags: `<p>Hello World!</p>`
  – Void elements (single tags): `<br/>`

• HTML Attributes
  – Provide additional information about an element `<a href="test.html">Link</a>`
  – Come in name/value pairs: name="value"
DOCTYPE

- HTML5
  - `<!DOCTYPE html>`

- HTML 4.01
  - `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" http://www.w3.org/TR/html4/loose.dtd>`

- XHTML 1.0
  - `<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd>`
Document Head

- The HEAD section contains information about the document as opposed to the contents of the document
- Minimally, it should include a title
  - `<title>My Page Title</title>`
- The HEAD may also include metadata such as character encoding and information about how to format the document
The BODY contains the document itself, i.e., what the user sees.

Any text (also called character data or cdata) within the body must be contained within some other tag.
Document Structure

• `<h1> . . . <h6>` (headings)
• `<p>` (paragraph)
• `<div>` (page section)
• `<span>` (inline section)
• `<br />` (line break)
• `<hr />` (horizontal rule)
• `<!-- This is a comment -->`
Text Formatting

- `<b>Bold text</b>`
- `<i>Italic text</i>`
- `<strong>Important text</strong>`
- `<em>Emphasized text</em>`
- `<small>Smaller text</small>`
- `<code>Computer code</code>`
- `<pre>Preformatted text</pre>`
Text Formatting (cont’d)

- `<del>` (deleted text)
- `<ins>` (inserted text)
- `<sub>` (subscripted text)
- `<sup>` (superscripted text)
- `<q>` (short quotation)
- `<blockquote>` (long quotation)
- `<cite>` (title of a work)
- `<abbr>` (abbreviation)
- `<address>` (contact information)
- `<bdo>` (text direction)
Links

- `<a href="URL"> (page link)
  - Absolute vs. relative address
- `<a href="mailto: ..."> (email link)
- `<a name="name"> (anchor)
- `<a href="#name"> (link to anchor)
Images

• Image: `<img src="URL" width="42" height="42" alt="Alternate Text" />`

• Image Link: `<a href="..."> <img src="URL" alt="Alternate Text" /></a>`

• Image Map:

```html
<map name="planetmap">
  <area shape="rect" coords="0,0,82,126" href="sun.htm" />
  <area shape="circle" coords="90,58,3" href="mercur.htm" />
</map>
```
Lists

• Ordered Lists (numbered): `<ol>`
• Unordered Lists (bulleted): `<ul>`

```
<ul>
  <li>Cat</li>
  <li>Dog</li>
  <li>Mouse</li>
</ul>
```
Definition Lists

• Definition Lists (dictionary like): `<dl>`
• Each item has a term `<dt>` and a definition `<dd>`

```html
<dl>
  <dt>Item 1</dt>
  <dd>Describe item 1</dd>

  <dt>Item 2</dt>
  <dd>Describe item 2</dd>
</dl>
```
HTML Entities

- HTML entities are used to display special characters in HTML

Examples:
- `&nbsp;` (non-breaking space)
- `&lt;` (less than: `<`)

Entities general format:
- `&name;`
- `&#number;`
## Useful Entities

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
<th>Entity Name</th>
<th>Entity Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-breaking space</td>
<td> </td>
<td> </td>
<td> </td>
</tr>
<tr>
<td>&lt;</td>
<td>less than</td>
<td>&lt;</td>
<td>&lt;</td>
</tr>
<tr>
<td>&gt;</td>
<td>greater than</td>
<td>&gt;</td>
<td>&gt;</td>
</tr>
<tr>
<td>&amp;</td>
<td>ampersand</td>
<td>&amp;</td>
<td>&amp;</td>
</tr>
<tr>
<td>€</td>
<td>euro</td>
<td>€</td>
<td>€</td>
</tr>
<tr>
<td>§</td>
<td>section</td>
<td>§</td>
<td>§</td>
</tr>
<tr>
<td>©</td>
<td>copyright</td>
<td>©</td>
<td>©</td>
</tr>
</tbody>
</table>
Summary

- HTML is universal markup language of the web
- There are various types of HTML
  - Use DOCTYPE to specify the document type
- Basic HTML elements include:
  - Paragraphs and Headings
  - Text Formatting
  - Links, Images, and Lists
References

- W3Schools
  - http://www.w3schools.com/html

- HTML Cheat Sheet