HTML

• Language used to define web pages
• What the server sends to the browser
• Browser reads HTML and renders the page
  • May require downloading data from server (e.g., images)
Creating Web Pages

• HTML - HyperText Markup Language
• HTML Standard
  • Developed by the World Wide Web Consortium (W3C)
  • [http://www.w3.org](http://www.w3.org)
• Document is described through a series of commands and directives present in a text file
• HTML goal is to describe structure only. Presentation should be left to cascading style sheets
• When interpreted by an HTML viewer those commands determine the appearance of the page
• HTML documents are entirely ASCII text
• Commands are explicitly inserted
• HTML/CSS tutorial site
  • [http://www.w3schools.com/](http://www.w3schools.com/)
HTML

• HTML Validation
  • http://validator.w3.org/
HTML Fundamentals

• **Example:** BasicHTMLSkeleton.html
• Html documents rely on tags
  • Specifies a command or directive
  • It surrounds content and apply meaning to that content
  • `<title>This is the document title</title>`
• General format `<elementName attributes>`
• Most HTML elements have two tags (start tag and end tag)
  • Example: `<h1> text </h1>`
• An html document has two main parts
  • **Head** → provides all the information and resources needed by the browser to render the page
  • It does not generate displayed contents
  • **Body** → contents of the page
• Let’s validate our document
• Let’s introduce an error and validate
Attributes

• An attribute extends or modifies a tag

• Attributes
  • Only appear in the start tag
  • You can have several attributes in one tag each separated by spaces
  • Order is immaterial
  • Some take values which are specified after an =

• General format
  • <ELEM ATTR="attrValue">Displayed Text</ELEM>

• Example:
  <img src="bear.gif" width="100" height="75" alt="bear image" />

• Boolean Attributes
  • Don’t require a value
  • Represent true is present and false otherwise
  • Example: <input type="checkbox" name="room" checked>
<head>

- <head> tag may include lang attribute to define the human language
  - <html lang="en">

- Elements in head
  - <title> </title>
    - It is required
    - Search engines depend on it
    - Provide a meaningful name as it is bookmarked
  - <meta>
    - Document’s metadata (e.g., keywords, description, encoding, etc.)
  - <link>
    - Specifies relationship between document and resource
  - <style>
    - To define CSS style in the document
  - <script>
    - To declare or load JavaScript

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Nested Tags and Spaces

• Nested tags are possible but don’t overlap sets of them
• Incorrect → <em><strong>Message</strong></em></strong>
• Correct → <em><strong>Message</strong></em></em>

• Browser Processing
  • Multiple spaces are converted to one space.
  • John                Mary    Peter
  • John Mary Peter

• Line returns are ignored
Comments

• Comments
  • Represented by <!-- --> Note: (two sets of double -)
  • We can use comments to disable HTML
Frequently Used Tags

• Emphasis
  • <em> text here </em> Text usually rendered in italics
  • <strong> text here </strong> Text usually rendered in bold

• Super/Sub script
  • <sub> text here </sub>
  • <sup> text here </sup>

• Quotations
  • <q> quote here </q>

• Line Breaks
  • <br />

• Verbatim (text displayed exactly as it appears)
  • <pre> text here </pre>
  • You can have tags inside them

• Example: CommonTags.html
**HTML Lists**

- Unordered lists
  - `<ul> </ul>` identify the list
  - `<li> </li>` each list item
  - **Example:** Lists.html

- Ordered lists
  - `<ol></ol>` identify the list
  - `<li> </li>` each list item
  - **Example:** Lists.html

- Definition lists
  - `<dt></dt>` - term
  - `<dd></dd>` - description

- Lists can be nested
  - Notice where the text inside of main list appears
  - **Example:** Lists.html
HTML Image Inclusion

- `<img>` tag used for image inclusion
- `<img>` attributes
  - `src`
  - `width`
  - `height`
  - `alt`
- To reduce the image size without losing proportions specify either the width or height and the browser will compute the other
- Example: Image.html
HTML Links

• Link → Connection between web resources

• Links are created using the `<a>` tag
  • `<a href="http://www.cnn.com">CNN Page</a>`
  • Need to specify http://
  • **Example:** Links.html

• You can also link a page with another as follows:
  • `<a href="page.html">`

• You can create links to elements in the same document using the id attribute

• `<a>` can include a target attribute that indicates the destination where the document will be opened
  • `_self` (default), `_parent` (parent frame), `_top` (current window)
  • `_blank` (new window)

• We can replace the text with an image

• With the **download** attribute we can specify to the browser to download instead of opening the file
Characte Entity References

• Special Characters (Character Entity References)
  • Copyright → &copy;
  • Registered Trademark → &reg;
  • & → &amp;
  • < → &lt;
  • > → &gt;
  • Non break space → &nbsp;
    • Allow us to add single spaces

• List:
  • http://dev.w3.org/html5/html-author/charref

• Example: CharacterReferences.html
To define a table use the `<table>` tag

- By default borders are not visible
- Using CSS to see borders

Tags

- `<tr> </tr>` → defines a row
- `<td></td>` → defines a data element
- `<th></th>` → defines a header data element
- `<caption> </caption>`
  - Must be inserted immediate after the `<table>` tag

**Example:** TableNoBorders.html

**Example:** TableWithBorders.html