

CMSC335

Web Application Development with JavaScript



HTML Basics

Department of Computer Science

University of MD, College Park

Slides material developed by Ilchul Yoon, Nelson Padua-Perez

HTML Basics

- 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 and resources needed by the browser to render the page. It does not generate displayed contents
 - **Body**: page contents
- **Viewport**: browser window size
- **Example**: BasicHTMLSkeleton.html
- 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
 - 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:
``
- 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 language used in a document or an element

`<html lang="en">`

- Elements in **head** section
 - **<title></title>**
 - Required/Search Engines depend on it
 - Provides 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

Nested Tags and Spaces

- Nested tags are possible – keep the tag order
 - Incorrect: `Message`
 - Correct: `Message`
- Browser Processing
 - Multiple spaces are converted to one space

John Mary Peter

will be converted to:

John Mary Peter
- Line returns are ignored

Comments

- Represented by:

`<!-- (multi-line) comments here -->`

- Notice: (two sets of double hyphen symbol)
- Use comments to disable HTML

Frequently Used Tags

- **Heading:** <h1> thru <h6>
- **Paragraph:** <p> text here </p>
- **Emphasis**
 - text here *Text usually rendered in italics*
 - text here **Text usually rendered in bold**
- **Super/Sub script**
 - _{text here}
 - ^{text here}
- **Quotations**
 - <q> quote here </q>
- **Line Breaks:**

- **Verbatim (text displayed exactly as it appears)**
 - <pre> text here </pre>
 - You can have tags inside them
- **Example:** CommonTags.html

HTML Lists

- **Unordered lists**
 - `` identify the list
 - `` each list item
- **Ordered lists**
 - `` identify the list
 - `` each list item
- **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

- `` tag used for image inclusion
- `` 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
- Responsive design using “viewport”
- **Example:** Image.html


HTML Links (1/2)

- Links: Connection between web resources
- Links are created using the `<a>` tag
 - `CNN Page`
 - Need to specify `http://`
- You can also link a local page with another as follows:
 - ``
- You can create links to elements in the same document using the `id` attribute
- **Example:** Links.html
- Example that shows use of `download` attribute
 - <https://www.cs.umd.edu/~nelson/classes/resources/HTML5CSS3/downloadLink/>

HTML Links (2/2)

- `<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)

Character Entity References

- **Default HTML5 char encoding** : UTF-8
- **Special Characters (Character Entity References)**
 - Copyright: **©**
 - Registered Trademark: **®**
 - Ampersand: **&**
 - Less than (<): **<**
 - Greater than (>): **>**
 - Non break space: ** **; (Allow us to add a single space)
- **Unicode**:
 - You can display **Unicode** characters as well
 - E.g., **♛** will display 
- **Useful links**:
 - <http://dev.w3.org/html5/html-author/charref>
 - https://www.w3schools.com/charsets/ref_html_symbols.asp
 - https://www.w3schools.com/charsets/ref_html_utf8.asp
- **Example**: CharacterReferences.html

Suggestions for Writing HTML Code

- Add the corresponding end tag immediately
- **Use indentation**
- **Have a consistent style**
- Use comments to separate sections of your code
- Validate your code as you develop it (not at the end)

Useful Sites

- HTML/CSS tutorial site
<http://www.w3schools.com/>
- Learning How to Learn
<https://www.coursera.org/learn/learning-how-to-learn>

HTML Tables (1/2)

- To define a table, use the **<table>** tag
- By default, borders are not visible
- Use CSS to see borders
- **Tags for table**
 - `<tr> </tr>` : defines a **row**
 - `<td></td>` : defines a **d**ata element
 - `<th></th>` : defines a **h**ead data element
 - `<caption></caption>`
 - » **Must be inserted immediately after the <table> tag**
- **Example:** TableNoBorders.html, TableWithBorders.html
 - Try validating TableWithBorders.html

HTML Tables (2/2)

- `<table>`, `<thead>`, `<tbody>`, and `<tfoot>`
- `<tbody>` : Groups the table content
- `<thead>` : table header
 - Define what each column contains
- `<tfoot>` : table footer
- Allows:
 - Scrolling table body independently of the header and footer
 - For large tables it allows the printing of several pages where each has a header and footer
- **rowspan & colspan** attributes: to cover multiple rows/cols
- **Example:** TableTheadTbody.html
 - Notice use of CSS rather than `border="1"`
- Example: TableWithBordersLongTable.html

Wrap-up

- **After this class, you should be able to:**
 - Write basic HTML doc template
 - Understand tags and attributes
 - Use comments in HTML
 - Use frequently used tags
 - Write ordered and unordered list in HTML
 - Add image to an HTML doc
 - Add links to an HTML doc (within-doc, local, remote link)
 - Add special characters to an HTML doc
 - » Memorize a few popular ones
 - Understand and use tags and attributes to add tables in an HTML doc