Introduction to HTML

HTML

HTML = HyperText Markup Language

HyperText

- text containing navigable links to other texts

A Markup Language

- a method of adding information to the text indicating the logical components of a document and instructions for layout of the text on the page, which can be interpreted by some automatic system

You can see the HTML of most web pages by selecting View → Source on your web browser.

HTML: The Language of the Web

- Web pages are text files written in HTML.
- HTML is easy to write and even nonprogrammers can learn to use it.
- HTML allows web page authors to create documents that can be displayed across different operating systems.
- HTML describes the format of web pages through the use of tags.
  - Web browsers read the HTML file, interpret the HTML tags, and render (display) the web page accordingly
  - Ideally, all browsers should display pages exactly the same. However, different web browsers frequently display pages differently!

Creating Web pages

In order to create your own web pages in this course you need:

- A text editor (not a web design application like FrontPage or Dreamweaver)
  (e.g. PSPad, NotePad, WordPad, Textpad)

- An web browser for testing the pages
  (e.g. Firefox, Internet Explorer, Safari, Opera, Chrome – or test with ALL of them!)

- A web server to store your files and make them available online
  (students.depaul.edu)

Basic process for creating web pages

Write HTML file

- Text file (i.e. do not write in Word)
- Assign a file extension (.html or .htm)
- View on your local machine (File → Open)

Upload to server

- All web pages must be inside a directory called public_html (you may have to create this folder)
- You may need to set permissions on folders and files (brief tutorial on Unix permissions here)

Images: must also be uploaded

- All images should be in either .gif or .jpg formats
- As with html files, you may need to set permissions on image files

File extensions

HTML files must be saved with a .html or .htm extension.

- HTML editors like PSPad do this automatically (when you click on File → Save As and choose ‘Save as HTML’)

- You must write the extension manually when using a text editor like Notepad, i.e., you must include the .htm extension when saving the file.

To make sure your files have the right extension, make the file extensions visible in Windows Explorer (a.k.a. My Documents) by selecting Tools →Folder Options → View tab and unchecking the “Hide extensions for known file types” box.

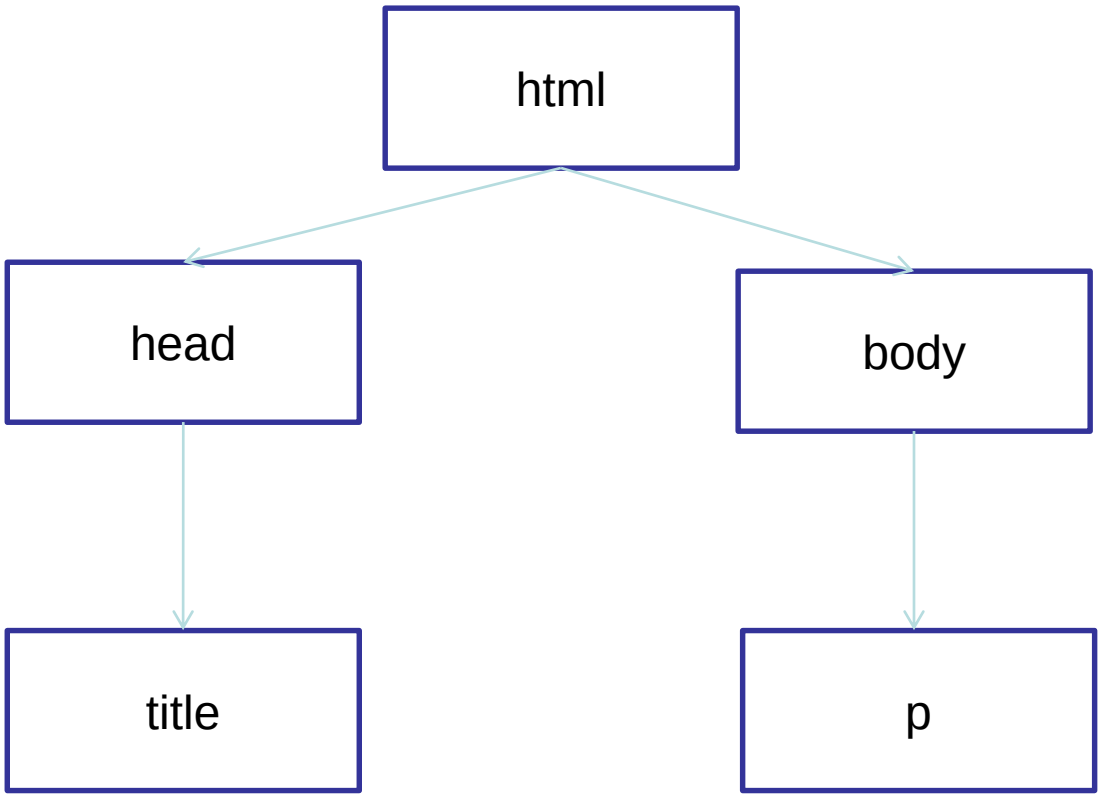
HTML: HyperText Markup Language

```
<!DOCTYPE html>
        <html>
          <head>
            <title>Hello World</title>
          </head>
          <body>
              <p>Welcome to the world!</p>
          </body>
        </html>
```

HTML Page Structure

```
<html>
    <head>
        <title>Hello World </title>
    </head>
    <body>
        <p>Welcome to the World </p>
    </body>
</html>
```

Tree structure of HTML



History of HTML

- HTML, initially defined by a single person, in 1991
  - A HTML document contains only text.
- HTML+, defined by Marc Andreeseen and Eric Bina, in 1993
  - A HTML document can display images and play video clips as well as sounds.
- From 1993 to 1997, HTML was being defined by the elements that **browser software developers** chose to implement. **-** The “War” Years

HTML4

- Following the “war” years, the standards community pushes for further changes in HTML standards.
  - In particular, the W3C has attempted to clean up the definition of HTML.

- World Wide Web Consortium (W3C) is the main international standards organization for the World Wide Web.

- HTML4 is defined in 1999

HTML5

- What is HTML5?
  - In 2012, HTML5 is defined, which is the new standard for HTML.
  - It can display everything you want including text, images, music and movies, and animations.
  - It is cross-platform. It will display content on a desktop computer, laptop, a tablet, smartphone, a notebook or a Smart TV.
  - All major browsers support many of the HTML5 elements.

HTML5 <!DOCTYPE>

- Tells browser which HTML standard to expect.
- Must appear first in the HTML document.
- HTML5 has a very simple <!DOCTYPE> element.
  - <!DOCTYPE html>
- HTML4 <!DOCTYPE> element
  - <!DOCTYPE html
    PUBLIC “-//W3C//DTD HTML 4.01 Transitional//EN”
    http://www.w3.org/TR/html4/loose.dtd>

Basics of HTML5

- Every HTML document (web page) consists of **tags** and **character data**
  - <html>, <body>, <title>, <a>.
  - Starting (opening) tag and ending (closing) tag.
  - </html>, </body>, </title>,
  - Opening and ending tags **must** be used together.

- Character data is the content between an opening and closing tag
  - E.g., <title>Hello World</title>

HTML Element

- We can also say that a HTML document are made of elements.

- An element is a combination of a tag and its character data.
  - <title>Hello World</title>
  - <body> Welcome to the world> </body>
  - <a>
  -

HTML Element

- Nested Element: an element contain other HTML elements
- Empty Element: an element with no content/character data
- Tips of writing HTML elements:
  - Don’t forget the End tag.
  - Use lowercase Tags:
    - <a> and <A> are the same. This is called case insensitive.
    - Better use <html>, <body>, <title>, <p>, </html>
    - Not <HTML>, <BODY>, <TITLE>, <P>, </HTML>

Start to write a HTML document.

- Now, let us try to write a HTML document.

Attributes

- Attributes provide information about HTML elements
- An element can have one or more attributes
  - id
  - class
  - style
  - href
- An attribute comes in name/value pairs.

- e.g., go to yahoo's website

Attributes

- Some attributes that can be used on any HTML element:
  - class: specifies one or more classnames for an element (refers to a class in a style sheet)
  - id: specifies a unique id for an element
  - style: specifies an inline CSS style for an element
  - title: specifies extra information about an element (tool tip)

Headings

- Heading are used to show the document structure.
- <h1>, <h2>, <h3>, <h4>, <h5>, <h6>

- <h1> defines the most important heading and <h6> defines the least important heading.

- Browsers automatically add some empty space before and after each heading.

Comment

- Comments can be added into the HTML code to make it readable and understandable.
- Browser will not display any comments.
- Syntax: <!-- -->
  - E.g., <!-- This is my comment -->

Paragraph

- Paragraphs are defined with the <p> tag.

- <p> can have many attributes.
  - <p style=“”>

- Line Break:
  - Use
 if you want a new line without starting a new paragraph.

Special Symbol

- You cannot change the output by adding extra spaces or lines in HTML code.

- New horizontal line: <hr>
- New Line tag:
- Whitespace:

Text Formatting

- Use tags for formatting output.
  - E.g: bold or italic text

- A list of formatting tags:
  - <b>: defines bold text
  - <i>: defines italic text
  - <sub>: defines subscripted text
  - <sup>: defines superscripted text
  - <mark>: defines marked/highlighted text

Hyperlink

- The <a> tag defines hyperlink.
- A hyperlink is a word, group of words, or image that you can click on to jump to another web page.

- The href is the most important attribute, which indicates the link's destination.
  - E.g., GO TO YAHOO
- The target attribute specifies where to open the linked document.
  - _blank: in a new window or tab
  - _self: in the same frame as it was clicked (default)

Images

- <img> tag is always an empty tag. It contains attributes only and no closing tag.
- You need to use the src attribute. The value of this attribute is the URL of the image.
  - Syntax: <img src="sampleImage.JPEG" alt="hint">
- alt defines the text for an image when the image cannot be displayed.
- The width and height attributes define the size of the image.

HTLM Table Element

- A table consists of rows <tr>. Each row is divided into data cells <td> (td stands for table data)

- A <td> tag can contain text, links, images, lists, forms, and other tables.

Table Example

```
<table>
    <tr>
        <td>row 1, cell 1</td>
        <td>row 2, cell 2</td>
    </tr>
    <tr>
        <td>row 2, cell 1</td>
        <td>row 2, cell 2</td>
    </tr>
</table>
```

row 1, cell 1	row 1, cell 2
row 2, cell 1	row 2, cell 2

Table Border Attribute

- By default, the table will be displayed without borders.

- If you want borders, specify the border attribute:
  - <table border="1"> … </table>

row 1, cell 1	row 1, cell 2
row 2, cell 1	row 2, cell 2

Table Headers

```
<tr>
  <th>header 1</th>
  <th>header 2</th>
</tr>
```

Header 1	Header 2
row 1, cell 1	row 1, cell 2
row 2, cell 1	row 2, cell 2

HTML List

- Ordered and unordered lists:

- An unordered list starts with the <ul> tag. Each item starts with the <li> tag.

- Example:

```
<ul>
  <li>Red</li>
  <li>Yellow</li>
</ul>
```

Description List

- A description list is a list of items with a description of each term/name

- The <dl> tag defines a description list. <dl> is used together with <dt> (defines items) and <dd> (describes each item)

- Example:

```
<dl>
    <dt>Coffee</dt>
    <dd>- black hot drink</dd>
</dl>
```

HTML List Tags

- : defines an ordered list
- : defines an unordered list
- : defines a list item
- <dl>: defines a description list
- <dt>: defines an item in a description list
- <dd>: defines a description of an item in a description list

HTML Block Element

- HTML elements are defined as **block level** element or as **inline** element.

- Block level Elements start with a new line.
  - E.g., <p>, <table>,

- Inline elements are displayed without a new line.
  - E.g., <b>, <td>, <a>, <img>

element

- element is an inline element that can be used as a container for text.

- element usually is used to set style to parts of the text.

```
<p>My mother has <span style="color:blue">blue</span> eyes.</p>
```

DIV tag

- The tag defines a division or a section in an HTML document.
- The tag is used to group block-elements to format them with CSS.

```
<div >
 <h3>This is a heading in a div element</h3>
 <p>This is some text in a div element.</p>
</div>
```

Thanks for your attention!