HTML Fundamentals

Web Authoring and Design

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Outline

- Review Last Week
- What do we mean by HTML Fundamentals
- Essential Tags/Formatting
- Examples
- Summary
- Review/Discussion

Last Week

- Read Chapters 1, 2 and 3

- Created a Simple Webpage
  - ▷ E.g., notepad to create hello.html
  - ▷ Test it locally (e.g., local computer in Chrome or Explorer)
  - ▷ Experiment (e.g., different tags, typing mistakes, mobile browser, …)
  - ▷ **Setup GitHub Account/Webpage**
    - • **(submit URL today)**

Question

- What type of webpage would you like to be able to create at the end of this course?
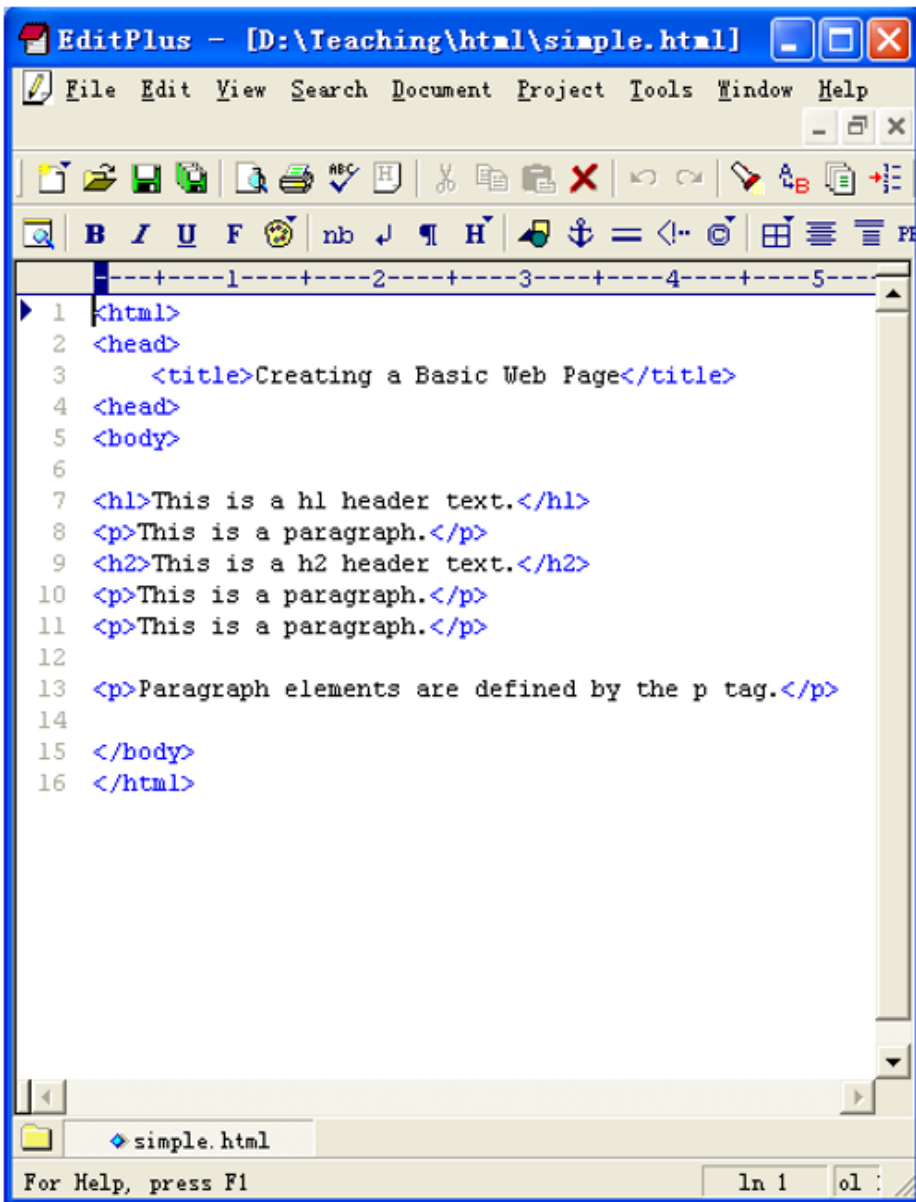
HTML Documents

- **HTML** source document
  - ▷ A text-only document
  - ▷ Consists of (1) actual text, and (2) tags
- A **tag** is an html code that is enclosed in angle brackets <>; used to lay out the web page.
- **XHTML** is a simple, more standardized version of HTML
- XHTML/HTML can be created using a simple text editor like notepad
- File extension must be **.html** or **.htm**

HTML Source

```
EditPlus - [D:\Teaching\html\simple.html]

File  Edit  View  Search  Document  Project  Tools  Window  Help

----+----1----+----2----+----3----+----4----+----5----
1   <html>
2   <head>
3       <title>Creating a Basic Web Page</title>
4   <head>
5   <body>
6
7   <h1>This is a h1 header text.</h1>
8   <p>This is a paragraph.</p>
9   <h2>This is a h2 header text.</h2>
10  <p>This is a paragraph.</p>
11  <p>This is a paragraph.</p>
12
13  <p>Paragraph elements are defined by the p tag.</p>
14
15  </body>
16  </html>

simple.html
For Help, press F1                                  ln 1    ol
```

Firefox display of the html source

```
Creating a Basic Web Page - Mozilla Firefox

File  Edit  View  History  Bookmarks  Tools  Help

file:/        Google
```

This is a h1 header text.

This is a paragraph.

This is a h2 header text.

This is a paragraph.

This is a paragraph.

Paragraph elements are defined by the p tag.

Done

HTML, XML, XHTML

- XML (eXtensible Markup Language):
  - ▷ Is a set of rules that lets web designers classify their data in a way customized to their needs.
  - ▷ Extendable by creating new types of tags.
- XHTML (eXtensible HyperText Markup Language):
  - ▷ A new version of HTML based on XML
  - ▷ Inherits strict syntax rules of XML

HTML vs XHTML

■Some comparisons of HTML vs. XHTML

HTML	XHTML
Tags aren't extensible	Tags are extensible
Tags are not case-sensitive	Only lowercase tags are allowed
Possible to leave off and ending tag like </body>	Tags should appear in pairs
Overlapping tags	No overlapping tags

HTML & XHTML

Note

■ Single `tags'

▷ E.g., *
* doesn't require a closing </br> tag

▷ HTML 4 does not require the `/' in empty tags, XHTML does

Tags (Elements)

- Tags are also called **elements**
- An **attribute** is a special code that can enhance or modify a tag. They are generally located in the starting tag after the tag name.
- Basic syntax for xhtml tags and attributes
  - ▷ **<tag attribute="value">   </tag>**
  - ▷ All tags **must be lower case**
  - ▷ all values of attributes need to surrounded by quotes

Blocks of Text

- **<h1>, .. <h5>** 6 levels of headings available, ranging from <h1> to <h6>, 1 being the most important one

- **<blockquote> .. </blockquote>** Blockquotes are used to identify a **citation**.

- **<p>..</p>** Paragraphs

Small parts within a Block of Text

- Paragraphs and lists are meant to identify whole blocks of text, we sometimes want to provide meaning to a word (or a few words) within a text

- default, **\<strong\>** elements are displayed in bold

- default, **\<em\>** elements are displayed in italic

- **\<abbr\>** element
  - ▷ I just bought a **\<abbr title="Compact Disc"\>**CD**\</abbr\>**

Small parts within a Block of Text (Cont)

- Inline quotes
  - ▷ He said **<q>**"Hello World"**</q>** and just left
- Plenty of other inline semantic elements
  - ▷ See [HTML element reference documentation](#) for a comprehensive list

Review Basic Tags

Tag	Function
`<html>...</html>`	Encloses the entire HTML document.
`<head>...</head>`	Encloses the head of the HTML document. Used within the `<html>` tag pair.
`<title>...</title>`	Indicates the title of the document. Used within the `<head>` tag pair.
`<body>...</body>`	Encloses the body of the HTML document. Used within the `<html>` tag pair.
`<p>...</p>`	A paragraph; skips a line between paragraphs.
` `	A line break.
`<hr />`	A horizontal rule line.
`<h1>...</h1>`	A first-level heading.
`<h2>...</h2>`	A second-level heading.
`<h3>...</h3>`	A third-level heading.
`<h4>...</h4>`	A fourth-level heading (seldom used).
`<h5>...</h5>`	A fifth-level heading (seldom used).
`<h6>...</h6>`	A sixth-level heading (seldom used).

Power of Links

- The true power of WWW comes with hyperlinks
- Surfer click on a specially marked word or image on a web page and automatically be jumped to another web page or another place in the same web page.
  - ▷ Another web page – External link
  - ▷ Another place – Internal link
- Use <a> (anchor) tag to create a link

Hyperlinks

◼ To search for something, visit
Bing

There are 3 types of target you can define.

- **anchor targets**, to navigate within the same page
- **relative URLs**, usually to navigate within the same website
- **absolute URLs**, usually to navigate to another website

Anchor targets

■ Anchor target to navigate within the same page. By prepending your href with #, you can target an HTML element with a specific id attribute.

■ For example, <a href="#footer"> will navigate to the <div id="footer"> within the same HTML document. This type of href is often used to navigate back to the top of the page.

Relative URLs

- If you want to define a link to another page of the same website, you can use relative URLs

- But relative to what? Well, relative to the current page

Go to the **contact page**

Absolute URLs

- This URL can be segmented in 3 parts:

- **protocol** http://
- **domain** ireallylovecats.com
- **file path** gallery.html

- This **absolute URL** is **self-sufficient**: no matter where you use the link form, it contains *all* the information required to find the correct file, on the correct domain, with the correct protocol

Cats on my page **** Link****

Images

- Images use the <img> element
  <img src="spacecraft.jpg">

Also specify attributes:

<img src="spacecraft.jpg " alt="SpaceShip" height="42" width="42">

If you use `animated' .gif files – the animations will play in the browser

Tables <table>

■ HTML tables are meant for tabular data only, which is any type of content that can be semantically arranged in rows and columns

■ Syntax - Building a table in HTML requires a specific structure:
  ▷ open a <table>
  ▷ add rows with <tr>
  ▷ add regular cells with <td> or heading cells with <th>

Tables <table>

- Tables used not only for displaying data in tabular format
- A table (<table>) in HTML
  - ▷ Consists of rows (<tr>)
  - ▷ Each row consists of rectangular boxes called cells (<td>)
  - ▷ <table>
    <tr><td>R1,Cell1</td><td>R1,Cell2</td></tr>
    <tr><td>R2,Cell1</td><td>R2,Cell2</td></tr>
    </table>

Table Example

```
<table>
  <tr>
    <td>John Lennon</td>
    <td>Rhythm Guitar</td>
  </tr>
  <tr>
    <td>Paul McCartney</td>
    <td>Bass</td>
  </tr>
</table>
```

John Lennon	Rhythm Guitar
Paul McCartney	Bass

thead, tfoot and tbody

- Just like a webpage can have a header and a footer, a table can have a head, a body, and a foot

thead, tfoot and tbody

```
<table>
  <thead>
    <tr>
      <th>Name</th>
      <th>Instrument</th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <td>John Lennon</td>
      <td>Rhythm Guitar</td>
    </tr>
    <tr>
      <td>Paul McCartney</td>
      <td>Bass</td>
    </tr>
  </tbody>
</table>
```

Name	Instrument
John Lennon	Rhythm Guitar
Paul McCartney	Bass

colspan and rowspan

- You can merge columns or rows by using the rowspan and colspan respectively

```
<table>
  <tr>
    <th colspan="2">Michael Jackson Singles</th>
  </tr>
  <tr>
    <th rowspan="3">1979</th>
    <td>Don't Stop 'Til You Get Enough</td>
  </tr>
  <tr>
    <td>Rock with You</td>
  </tr>
  <tr>
    <td>Off the Wall</td>
  </tr>
</table>
```

colspan and rowspan

- The "Michael Jackson Singles" cell spans across 2 columns, so the following row includes two cells.

- Because the cell "1979" spans across 3 rows, the 2 following rows only include a one cell, to allow space for the "1979" column.

Michael Jackson Singles

Don't Stop 'Til You Get Enough

Rock with You

1979 Off the Wall

Attributes (Revisited)

■ An **attribute** is a special code that can enhance or modify a tag. They are generally located in the starting tag after the tag name.

■ Basic syntax for xhtml tags and attributes

  ▷ **<tag attribute="value">   </tag>**

  ▷ All tags must be lower case

  ▷ all values of attributes need to be surrounded by quotes

Common Attributes

id
  ▷ unique identifier for elements

class
  ▷ the class of the element, used to *specify similar attributes for dissimilar elements* by putting them in the same class

style
  ▷ an inline style definition

title
  ▷ a text to display in a tool tip

Example Attributes

- **Examples 1**
  - ▷ `<p id="firstParag" class="indent" title="This paragraph introduces html attributes">`
  - ▷ Assuming **style sheet** contains
  - ▷ `.indent { margin-right: 5%; margin-left: 5%;}`
- **Example 2**
  - ▷ `<p id="firstParag" style="margin-right: 5%; margin-left: 5%;" title="This paragraph introduces html attributes">`

Attributes Cont.

- **lang**
  - ▷ sets the language code; "en": English, "fr": French, "es": Spanish, "de": German etc.

- **dir**
  - ▷ sets the text direction, left to right or right to left

- `<p lang="fr" dir="ltr">bonjour!</p>`

- **accesskey**
  - ▷ assigns an access key to an element. An **access key** is a single character from the document character set.

- **tabindex**
  - ▷ Sets the tab order of an element

Deprecated Attributes

- In order to separate structure from presentation many HTML attributes/tags used for presentation were **deprecated**, starting from HTML version 4
- Some deprecated attributes
  - ▷font, Text
  - ▷align, <p *align*="center">Centered text</p>
  - ▷*bgcolor*, *width*, *height*, etc.

List

■ Ordered lists & Unordered lists
  ▷ *<ol>* for ordered
  ▷ *<ul>* for unordered
  ▷ *<li>* for each item inside the list
■ Browser inserts a blank line before & after the list (block-level element)
■ Example
  ▷ Item 1 Item 2 Item3

Nested lists

```
<ul>
  <li>Top Level, Item 1</li>
  <li>Top Level, Item 2
  <ul>
   <li>Sublevel 1, Item 1
   <ul>
        <li>Sublevel 2, Item 1</li>
        <li>Sublevel 2, Item 2</li>
   </ul>
   </li>
   <li>Sublevel 1, Item 2</li>
  </ul>
  </li>
  <li>Top Level, Item 3</li>
</ul>
```

Customizing List Display

- List numbers or marks can be customized
  - ▷ "*type*" attribute
- Example
  - ▷ <ul type="square">
  - ▷ <ol type="A">
  - ▷ <ol type="a">
  - ▷ <ol type="I">
  - ▷ <ol type="i">
- "type" attribute is not allowed in XHTML 1.0 Strict, so use *style sheets* instead

Definition Lists

- <dl> for "*list element*";
- <dt> for "*definition terms*";
- <dd> for "*definition data*"
- Example

```
<dl>
  <dt><strong>CPU</strong></dt>
  <dd>Central Processing Unit</dd>
  <dt><strong>ALU</strong></dt>
  <dd>Arithmetic Logic Unit</dd>
  <dt><strong>GHz</strong></dt>
  <dd>Gigahertz</dd>
</dl>
```

Summary

■ Overview of HTML Fundamentals

■ Hands-On/Practical

■ Thinking about Designing your Website

▷ Multiple .html documents, content, structure, …. (works and doesn't work on a webpage) – easy to for the user to navigate/understand
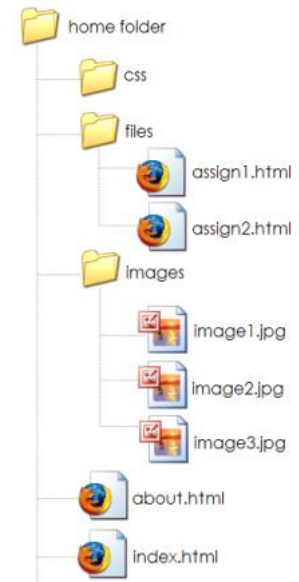
This Week

- Read Chapters 5, 6, 7
- Github Webpage
  - ▷ xxxxx.github.io
  - ▷ Multiple file/structure
- Review Slides
- Experiment and implementing various HTML features (e.g., multiple pages, images, tables, formatting, …)
- Quizzes

home folder
- css
- files
  - assign1.html
  - assign2.html
- images
  - image1.jpg
  - image2.jpg
  - image3.jpg
- about.html
- index.html

Questions/Discussion

- Revision Questions

Question

- 1. Which of the following is an example of an IP address?

- a. www.whitehouse.gov
- b.http://www.whitehouse.gov/history/index.htm
- c. .gov
- d. 216.43.187.162

Answer

- Answer: d

Question

■ When you are browsing the Web and viewing web pages, your computer is

■ acting as a:

■ a. telent

■ b. client

■ c. server

■ d. packet

Answer

- Answer: b

Question

Basic syntax for XHTML tags and attributes is:

a. <tag attribute=value> </tag>

b. <tag attribute=value> <tag>

c. <tag attribute="value"> <tag>

d. <tag attribute="value"> </tag>

Answer

- Answer: d

Question

- The XHTML code CS Department at School will create a _____ to CS web page:

- a. internal link
- b. external link
- c. anchor
- d. combination link

Answer

- Answer: b

Question

- What does HTML stand for?

- a. Hyperlinks and Text Markup Language
- b. Home Tool Markup Language
- c. Hyper Text Markup Language

Answer

- Answer: c

Question

- Choose the correct HTML tag for the largest heading

- a. <head>
- b. <heading>
- c. <h6>
- d. <h1>

Answer

- Answer: d

Question

■ What is the correct HTML tag for inserting a line break?

■ a. <lb>

■ b. <break>

■ c.

Answer

- Answer: c

Question

- Choose the correct HTML tag to make a text bold

- a. <btext>
- b. <bold>
- c. <b>
- d. <strong>

Answer

- Answer: d

Question

- Choose the correct HTML tag to make a text italic

- a. <italics>
- b. <i>
- c. <it>
- d.

Answer

- Answer: d

Question

- What is the correct HTML for making a hyperlink to ZJNU Computer Science website?

- a. ZJNU CS
- b. ZJNU CS
- c. ZJNU CS
- d. ZJNU CS

Answer

- Answer: b

Question

■ How can you make a list that lists the items with numbers?

■ a.

■ b.

■ c. <dl>

■ d. <list>

Answer

- Answer: a

Question

- What is the correct HTML for inserting an image?

- a. <img href="image.gif>
- b. <image src="image.gif">
- c. <img>image.gif</img>
- d. <img src="image.gif">

Answer

- Answer: d

Question

- A browser is a software program which interprets the HTML documents and displays it on the user's screen.

- True
- False

Answer

■True

Question

A tag is an html code that is enclosed in angel brackets (<>), and it's used to lay out the web page.

True

False

Answer

- Answer: True

Question

- In XHTML, both uppercase and lowercase tags are allowed for tag names.

Answer

- Answer: False

Question

- The following XHTML code will display all the lowercase English characters on screen:
  <!-- abcdefghijklmnopqrstuvwxyz-->

Answer

- Answer: False

Question

- The following is a legitimate XHTML code:
  <h2>Bold and italic</h2>

Answer

- Answer: False

Question

- ■ Domain Name System (DNS) translates the IP address of a host into its human-readable name (domain name).

Answer

- Answer: False

Class Quiz

■ Class Quiz
  ▷ 30 Questions/30 Minutes
  ▷ Multiple Choice