

# 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

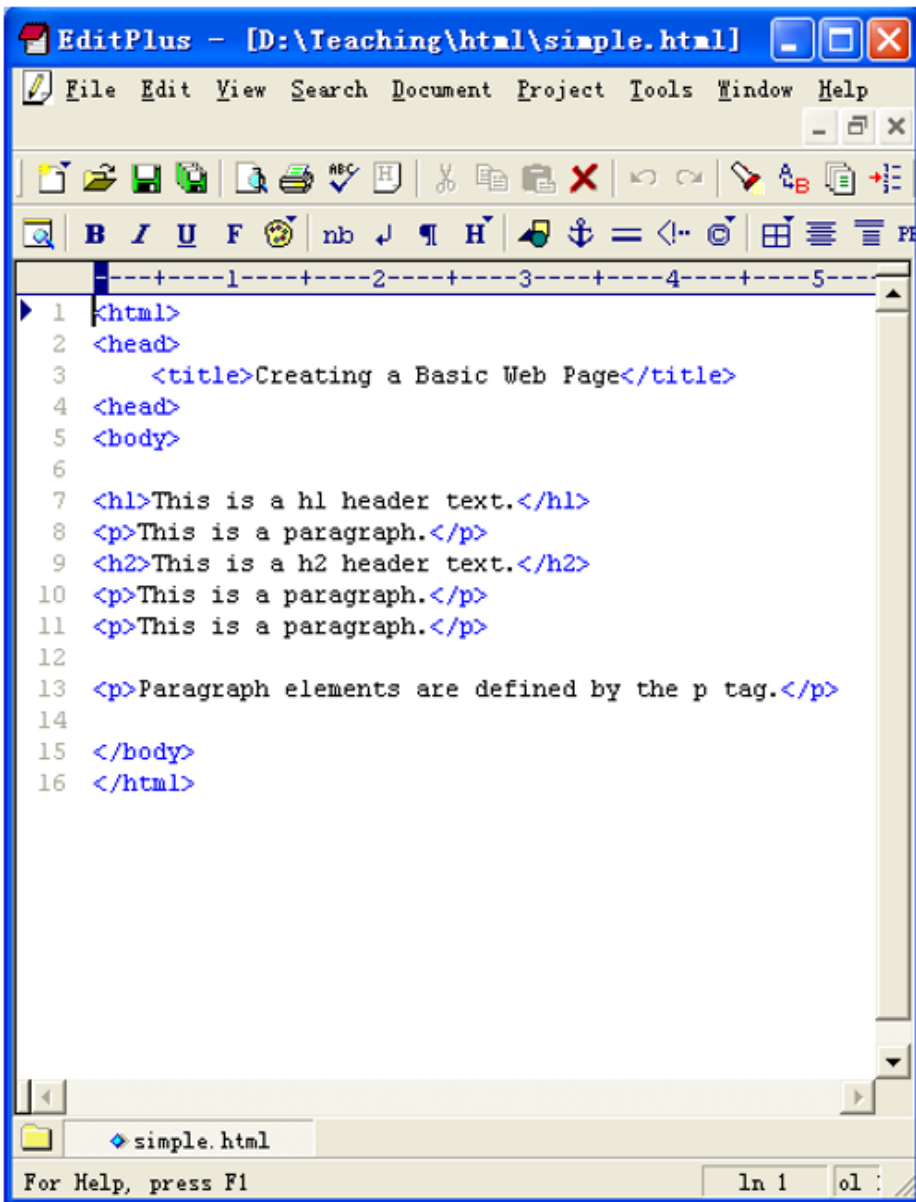
- ▷ A text-only document
- ▷ Consists of (1) actual text, and (2) tags

- 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**

The screenshot shows the EditPlus text editor with a menu bar (File, Edit, View, Search, Document, Project, Tools, Window, Help) and a toolbar. The code is as follows:

```
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>
```

The status bar at the bottom indicates 'For Help, press F1', 'ln 1', and 'ol 1'.

HTML Source



Firefox display of the html source

# 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 <code>&lt;/body&gt;</code>	Tags should appear in pairs
Overlapping tags	No overlapping tags



# HTML & XHTML

## Note

### ■ Single `tags`

- ▷ E.g., `<br />` 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 be 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
<code>&lt;html&gt;...&lt;/html&gt;</code>	Encloses the entire HTML document.
<code>&lt;head&gt;...&lt;/head&gt;</code>	Encloses the head of the HTML document. Used within the <code>&lt;html&gt;</code> tag pair.
<code>&lt;title&gt;...&lt;/title&gt;</code>	Indicates the title of the document. Used within the <code>&lt;head&gt;</code> tag pair.
<code>&lt;body&gt;...&lt;/body&gt;</code>	Encloses the body of the HTML document. Used within the <code>&lt;html&gt;</code> tag pair.
<code>&lt;p&gt;...&lt;/p&gt;</code>	A paragraph; skips a line between paragraphs.
<code>&lt;br /&gt;</code>	A line break.
<code>&lt;hr /&gt;</code>	A horizontal rule line.
<code>&lt;h1&gt;...&lt;/h1&gt;</code>	A first-level heading.
<code>&lt;h2&gt;...&lt;/h2&gt;</code>	A second-level heading.
<code>&lt;h3&gt;...&lt;/h3&gt;</code>	A third-level heading.
<code>&lt;h4&gt;...&lt;/h4&gt;</code>	A fourth-level heading (seldom used).
<code>&lt;h5&gt;...&lt;/h5&gt;</code>	A fifth-level heading (seldom used).
<code>&lt;h6&gt;...&lt;/h6&gt;</code>	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

`<a href="http://www.bing.com">Bing</a>`

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 `<a href="contact.html">`contact  
page`</a>`

# 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 **<a href="http://www.cats.com/index.html">**  
Link**</a>**

# Images

■ Images use the `<img>` element  
``

Also specify attributes:

```

```

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, `<font size="5" color="red">Text</font>`
  - ▷ 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

▷ `<ol> <li>Item 1</li> <li>Item 2</li>  
<li>Item3</li> </ol>`

# 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

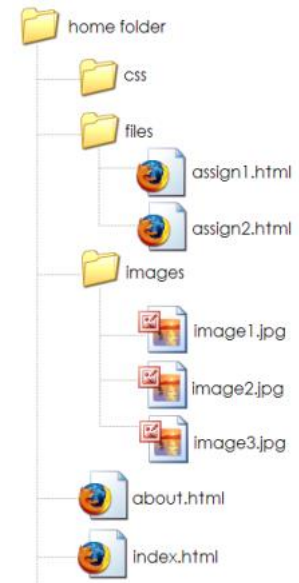
  - ▷ `xxxxxx.github.io`

  - ▷ Multiple file/structure

- Review Slides

- Experiment and implementing various HTML features (e.g., multiple pages, images, tables, formatting, ...)

- Quizzes



# Questions/Discussion

■ Revision Questions

# Question

- 1. Which of the following is an example of an IP address?
- a. [www.whitehouse.gov](http://www.whitehouse.gov)
- b. <http://www.whitehouse.gov/history/index.htm>
- c. [.gov](http://.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. telnet
- ☐ 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 `<a href="http://www.zjnu.cn /">CS Department at School</a>` 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. <br>

# Answer

■ Answer: c

# Question

☐ Choose the correct HTML tag to make a text bold

☐ a. <btext>

☐ b. <bold>

☐ c. <bb>

☐ d. <strong>

# Answer

■ Answer: d

# Question

☐ Choose the correct HTML tag to make a text italic

☐ a. <italics>

☐ b. <ii>

☐ c. <it>

☐ d. <em>



# Answer

■ Answer: d

# Question

- What is the correct HTML for making a hyperlink to ZJNU Computer Science website?
- a. `<a name="http://www.zjnu.edu"> ZJNU CS</a>`
- b. `<a href="http://www. zjnu.edu"> ZJNU CS</a>`
- c. `<a url="http://www. zjnu.edu"> ZJNU CS</a>`
- d. `<a src="http://www. zjnu.edu">ZJNU CS</a>`

# Answer

■ Answer: b

# Question

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

☐ a. `<ol>`

☐ b. `<ul>`

☐ 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. ``

# 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:  
`<em><h2>Bold and italic</h2></em>`



# 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