

Web I: HTML and CSS

This short course provided by the Information Technology Lab is designed to help students become familiar with the very basics of HTML and CSS. It also provides links to additional tutorials, reference materials and available code/programming editors. The following topics will be broached:

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What is HTML

HTML is a language for describing web pages.

- HTML stands for **Hyper Text Markup Language**
- HTML is not a programming language, it is a **markup language**
- A markup language is a set of **markup tags**
- HTML uses **markup tags** to describe web pages

HTML Tags

HTML markup tags are usually called **HTML tags**

- HTML tags are keywords surrounded by **angle brackets** like <html>
- HTML tags normally **come in pairs** like and *
- The first tag in a pair is the **start tag**, the second tag is the **end tag**
- Start and end tags are also called **opening tags** and **closing tags**

*HTML: Self-Closing Tags

There are three important **exceptions** to the open tag / close tag rule:

- `` → image
- `<hr />` → horizontal line
- `
` → break (forces a line break)

NESTING TAGS

FILO method: “First In, Last Out”

- Tags must be “nested” together in the proper way so that the browser can read them. For example:

```
<tag1><tag2> FILO method</tag2></tag1>
```

HTML Structure

The purpose of a web browser (like Internet Explorer or Firefox) is to read HTML documents and display them as web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page:

Example Explained

- **html:** The text between `<html>` and `</html>` describes the web page
- **head:** This area contains metadata information used by search engines such as title, keywords, description, etc.
- **title:** The text between `<title>` and `</title>` provides the title that the browser displays
- **body:** The text between `<body>` and `</body>` is the visible page content
- **h1:** The text between `<h1>` and `</h1>` is displayed as a heading
- **p:** The text between `<p>` and `</p>` is displayed as a paragraph
- W3Schools provides a full list at <http://www.w3schools.com/tags/default.asp>.

```
<html>
<head>
  <title>My Home Page</title>
</head>
<body>
  <h1>My First Heading</h1>
  <p>My first paragraph</p>
</body>
</html>
```

Headings

Headings are defined with the <h1> to <h6> tags. <h1> defines the largest heading. <h6> defines the smallest heading.

Here is how it looks in a browser:

This is an h1 heading.

This is an h2 heading.

This is an h3 heading.

This is an h4 heading.

This is an h5 heading.

This is an h6 heading.

```
<h1>This is an h1 heading</h1>
<h2>This is an h2 heading</h2>
<h3>This is an h3 heading</h3>
<h4>This is an h4 heading</h4>
<h5>This is an h5 heading</h5>
<h6>This is an h6 heading</h6>
```

It may help to think of headings as you do **levels** in an outline. Just as the I, A, 1, a add logical levels to an outline, headings add logical levels to a Web page. An <h1> heading is good for a title; <h2> headings are good for major sections of a page; <h3> headings for subsections, etc.

Text Formatting

A. Emphasizing:

The text displayed in the body of any XHTML document can be emphasized by making the font appear bolder, italicized, or both.

Example Explained

- Text can be **bolded** by using the or tags.
- Text can be **italicized** by using the <i></i> or tags.
- Text can be bolded and italicized by using both - but you have to use what they call **nesting tags**

XHTML is really easy.

XHTML is <i>really</i> easy.

XHTML is <i>really</i> easy.

B. HTML Colors:

You can provide **color** information within tags in HTML. HTML colors are defined using a hexadecimal (hex) notation for the combination of Red, Green, and Blue color values (RGB).

Example Explained

- The `<h1>` tags creates red text using **HEX Value**.
- The World Wide Web Consortium (W3C) has listed **16 Valid Color Names** for HTML and CSS: *aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, and yellow*. **If you want to use other colors, you should specify their HEX value.**

```
<h1 style="color:#FF0000">Red Text</h1>
```

```
<h1 style="color:red">Red Text</h1>
```

C. HTML `<div>` Tag

The `<div>` tag defines a **division** or a **section** in an HTML document. The `<div>` tag is often used to group block-elements to format them with styles.

- Examples are header, content, footer, columns, etc.

```
<div style="color:#00FF00">
  <h3>This is a header</h3>
  <p>This is a paragraph.</p>
</div>
```

D. Special Characters

There are many symbols and special characters or characters that do not display properly in all browsers and require special coding. Following are common special characters. The code replaces the character.

A list of default characters set in most browsers can be found here:

http://www.w3schools.com/tags/ref_entities.asp.

| Char. | Name | Description |
|-------|--------|--------------|
| < | < | Less than |
| > | > | Greater than |
| & | & | Ampersand |
| " | " | Quotation |

Lists

A. Unordered Lists:

An unordered list is a bulleted list of items. An unordered list starts with the `` tag and ends with the `` tag. Each list item starts with the `` tag and ends with the `` tag.

Here is how it looks in a browser:

- Spring
- Summer
- Fall
- Winter

```
<ul>
<li>Spring</li>
<li>Summer</li>
<li>Fall</li>
<li>Winter</li>
</ul>
```

B. Ordered Lists

Here is how it looks in a browser:

1. Spring
2. Summer
3. Fall
4. Winter

```
<ol>
<li>Spring</li>
<li>Summer</li>
<li>Fall</li>
<li>Winter</li>
</ol>
```

Images

```

```

Example Explained

- **img** stands for "image." It tells the browser to put an image right where you place the image tag.
- **src** stands for "source." It is the URL of the image. It tells the browser where to look for the image.
- **myimage.jpg** is the name of the image file. It tells the browser which image to display.
- **alt** is descriptive text about the image that would display if the image was unavailable.
- **title** displays mouse-over text.
- **width & height:** It is also a good idea to include image dimensions (in pixels) so that your image sizes properly.

Links & Anchors

HTML uses the `<a>` (anchor) tag to create a link to another document. An anchor can point to any resource on the Web: an HTML page, an image, a video, etc.

Example Explained

- **href** attribute is used to address the document to link to
- **words** between the open and close of the anchor tag will be displayed as a hyperlink.

```
<a href="URL">Text to be displayed</a>
```

Comments

Comments can be inserted in the HTML code to make it more readable and understandable. Comments are ignored by the browser and are not displayed. Comments are written like this:

```
<!-- this is a comment -->  
<!-- <p> I am not ready to publish this code.</p> -->
```

CSS

CSS (Cascading Style Sheets) are not a required element, but allow you to **define all the styles** for your Web site – controlling the appearance – **in one document**. Making a change in the CSS file will push the updates through to all your pages, saving time and preventing typing errors. CSS elements are applied to HTML tags within the `<body>` of an HTML file for text and image formatting and page layout (positioning). CSS files are saved with the `.css` extension.

- **CSS** stands for **Cascading Style Sheets**
- Styles define **how to display** HTML elements
- Styles were added to HTML 4.0 **to solve a problem**
- **External Style Sheets** can save a lot of work
- External Style Sheets are stored in **CSS files**

Site Validation

Please validate your code! It will save you future headaches and ensure your code is read appropriately on as many browsers as possible. Validators will read your code and indicate the line of the code in error and a description of the error. Many of the markup editors have tools or add-ons that will indicate incorrect code. There are also online validators where you can provide an URI (web address), upload a file or submit code.

- HTML validator: <http://validator.w3.org/>
- CSS validator: <http://jigsaw.w3.org/css-validator/>
- Check for broken links: <http://validator.w3.org/checklink>

While HTML and CSS are universal, not all browsers and operating systems represent the languages in the same fashion. In addition to validating, it is also a good idea to preview your websites on different browsers (Internet Explorer, Firefox, etc.) and different platforms (Mac, Windows, etc).

Resources

The IT Lab has a library of books on HTML, CSS, XML, Java, Dreamweaver and so much more! Here are more sources online:

- w3schools: <http://www.w3schools.com/>. Tutorials and reference materials.
- W3C: <http://www.w3.org/>. The consortium for web standards. Validators.
- Kuler: <http://kuler.adobe.com/>. A fun site where you can use browse existing color themes or create your own.
- Usability.gov: <http://www.usability.gov/>. Guides for creating usable sites.
- A List Apart: <http://www.usability.gov/>. TONS of articles and tutorials.
- CSS Layout Techniques: <http://www.glish.com/css/>.

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Handy Reference

Links

W3Schools — w3schools.com

HTML Dog — htmldog.com

IT Lab Tutorials —

www.ischool.utexas.edu/technology/tutorials

UT — www.utexas.edu/learn/html

Common HTML tags

Document Outline

| | |
|-------------------------------|--------------------|
| <code><!DOCTYPE></code> | Version of (X)HTML |
| <code><html></code> | HTML Document |
| <code><head></code> | Page information |
| <code><body></code> | Page contents |

Comments

`<!--comment txt -->`

Document Structure

| | |
|-----------------------------|-----------------|
| <code><h[1-6]></code> | Heading |
| <code><div></code> | Page section |
| <code></code> | Inline section |
| <code><p></code> | Paragraph |
| <code> </code> | Line break |
| <code><hr /></code> | Horizontal rule |

Links

`` Page link

``

E-mail link

`` Anchor

`` Links to anchor

Text Markup

| | |
|---------------------------------|-----------------|
| <code></code> | Strong emphasis |
| <code></code> | Emphasis |
| <code><blockquote></code> | Long quotation |
| <code><q></code> | Short quotation |
| <code><abbr></code> | Abbreviation |

Lists

| | |
|-------------------------|------------------|
| <code></code> | Ordered list |
| <code></code> | Unordered list |
| <code></code> | List item |
| <code><dl></code> | Definition list |
| <code><dt></code> | Definition term |
| <code><dd></code> | Term description |

Images

``

Special Characters

| | |
|--------------------|---------|
| <code>&</code> | & |
| <code>-</code> | – |
| <code>—</code> | — |
| <code>"and"</code> | " |
| <code>©</code> | © |
| <code>'</code> | ‘ |
| <code>'</code> | ’ |
| apostrophe | ’ |