

XHTML: Extensible Hypertext Markup Language

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This document is meant to serve primarily as a guide to using XHTML (Extensible Hypertext Markup Language) and CSS (Cascading Style-sheets) to create web pages, sites and interfaces.

There are three portions to this guide. The first portion details what exactly XHTML is, its purpose, its history and its future.

The second portion walks through the various parts of a correctly written XHTML file. How to markup content within an XHTML page and using hypertext and media within an XHTML webpage will be discussed as well.

The third portion of this guide begins to focus on using Cascading Style Sheets to visually style and display the markup created in an XHTML Document.

What is XHTML?

XHTML, or Extensible Hypertext Markup Language is one of the most modern building materials for creating web pages. As a computer programming language that is supported by web browsers and a growing number of other applications, XHTML's purpose is to provide formatting to content using Markup.

Note: Visually styling a web document is not a direct responsibility of XHTML, rather CSS (Cascading Style Sheets) are used to define the visual style of the markup used in an XHTML document.

What is Markup?

Markup is the process of providing context for pieces of information. Markup provides semantic weight to elements within information while still keeping the association between all of the elements within information. If we think about a physical letter that would be sent to someone as an example, the letter itself is one piece of information, but there are various elements that make up a letter such as the Greeting, Address, Body, Signature and so forth. All of these elements are understood to mean different things and that understanding comes from the formatting associated with them.

What is the difference between HTML, XHTML, and XML?

XHTML is a transitional step from previous markup languages such as SGML (Standard Generalized Markup Language) and HTML (Hypertext Markup Language). XHTML is very similar to HTML as it shares the same expressive possibilities, but has a stricter syntax (more rules/practices to follow). Whereas HTML was an application of SGML, a very flexible markup language, XHTML is an application of XML, a more restrictive subset of SGML. Currently web browsing technologies support XHTML and HTML, but cannot however support XML in its original form. XML must be transformed and delivered into a document browsing technologies can understand, the general choice is XHTML.

The benefits of XHTML - A Sound Structure

Because XHTML is based on a stricter language (XML), there is a much stricter format that must be followed when marking up information and presenting it in an XHTML file.

A stricter format adopted from XML allows for the separation of content and the visual presentation of this content. This has many benefits as an XHTML page can be visually styled by multiple CSS documents actively or invisibly providing users


```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict
.dtd">
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

Note: The code behind a DocType is a bit more complicated and can be examined closer by some of the links at the end of this section of the guide.

There are various DocType Definitions each with their own function. HTML has its own document type definition as does RSS (Rich Site Summary). The point of a DocType is provide the framework for what type of code can and can't be placed below and to prepare a user's web agent to handle the markup in the best manner possible.

Note: The `<html>` tag that is opened in the example above must be closed after everything else on the page. Thus everything else to follow would be wrapped in an `<html></html>` tag as every other tag.

Head Tag

The next piece of standard XHTML that is needed is the Head Tag portion of the webpage. The Head Tag contains information about the page such as its title, any extra information (called metadata) about the page as well as references to external files that provide functionality to the page. These files include references to Cascading Style Sheets (CSS) which contains the rules on how the page is visually styled as well as JavaScript which adds additional web behaviors such as opening new windows.

The Head Tag generally looks like the following, with the paths to external CSS files changing depending on where they are stored.

```
<head>
<title>The Web Page's Title</title>

<meta http-equiv="Content-Type" content="text/
html; charset=iso-8859-1" />
<meta name="author" content="Author's Name" />
<meta name="Description" content="A Descrip-
tion of the Webpage"/>

<style type="text/css" media="screen">
<!--
@import "css.css";
-->
```

```
-->
</style>
</head>
```

Body Tag

The Body tag houses all of visible of an XHTML web-page. This is where the bulk of the markup will occur. For now a blank body tag looks like the following.

```
<body>
This is where the content of a webpage would
go and it will be marked up using other XHTML
tags.
</body>
```

Note: When writing XHTML, line breaks in the code do not affect visual display or formatting.

If all of these elements are placed together, they look something like this –

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict
.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>
<title>The Web Page's Title</title>

<meta http-equiv="Content-Type" content="text/
html; charset=iso-8859-1" />
<meta name="author" content="Author's Name" />
<meta name="Description" content="A Descrip-
tion of the Webpage"/>

<style type="text/css" media="screen">
<!--
@import "css.css";
-->
</style>
</head>

<body>
This is where the content of a webpage would
go and it will be marked up using other XHTML
tags.
</body>

</html>
```

Note: You can make notes and comments in XHTML by placing a "`<!--`" at the beginning of your comment and a "`-->`" at the end of your comment. A comment will not be seen by the web agent and is used commonly to keep track of things within the code.

Common XHTML Markup

The following are tags that are used within the `<body>` of an XHTML document.

Paragraph

Denotes that the contents within the tag are a paragraph of text.

```
<p>This is a paragraph</p>
```

Strong and Emphasis (Bold and Italics)

To place emphasis on content there are two ways to do so, to bold content, you would place strong tags around the content. To italicize content you would place emphasis tags (``) around it.

```
<strong>This is bolded text</strong>
```

```
<em>This is italicized text</em>
```

Lists

Lists are used to display short amounts of information that relate to each other in one sense or another, much as they do in real-life situations. There are various kinds of lists used in XHTML, The **ordered** and the **unordered** lists are two of the most common. The **ordered** is listed with numbers, the **unordered** is bulleted. To create these lists you need two tags:

1. `` or `` - Depending on which list you want. These are needed to open and close your list.
2. `` - Within the above tag, the **list item** precedes each item you are listing.

Here's an example with the days of the week listed in an unordered list:

```
<ul>
<li>Monday</li>
<li>Tuesday</li>
<li>Wednesday</li>
<li>Thursday</li>
<li>Friday</li>
</ul>
```

Here's an example of a grocery list arranged by most important item to least important in an ordered list:

```
<ol>
<li>Eggs</li>
<li>Milk</li>
<li>Bread</li>
<li>Tomatoes</li>
<li>Figs</li>
</ol>
```

Links

To create a hyperlink to another webpage or document you would use the anchor tag (`<a>`), which is made up of 2 different parts.

1. Anchor `<a>` - This is the opening and closing tag, what makes the text clickable.
2. HyperText Reference "href" - An attribute to the opening anchor tag that tells where to link to.

If you wanted to have a sentence that linked to another website, here is what it would look like in XHTML:

```
<a href="http://www.anotherwebsite.com/">This link will take you to another website</a>
```

Images

Images can be placed in an XHTML webpage using the following two part `` tag can be used to reference images inside of XHTML.

`img` - Indicates to the browser, the following is an image

`src` - Indicates to the browser where the image is actually stored.

If you had a picture of a flag called `flag.gif`, to place this within your page, the tag would look like the following

```

```

Note: The `` tag is one of a few "self-closing tags" in XHTML which do not have an end tag. In this case there is no such thing as a `` tag, but rather the tag is closed by a `/` at the end of the initial tag, ``. Please see above in this guide for further information.

For information on more specific XHTML markup you may consult the following list of additional resources.

Divisions

Divisions are logical separations of content within a page. If for instance there was both a piece of content that had numerous paragraphs of information which pertained directly to the topic of your web-page, you may want to separate that from a list of links to supplemental topics that are not directly related to the main content of the page and would be placed visually on the right of the page. This type of content separation can be obtained by placing each group of content in a `<div>` tag. See the example below:

```
<div>
<p>This is my main content</p>
<p>This is more of my main content</p>
</div>
```

```
<div>
<p>This is a set of links to supplemental
information</p>
```

```
<ul>
<li><a href="link">Link 1</a></li>
<li><a href="link">Link 2</a></li>
<li><a href="link">Link 3</a></li>
</ul>
</div>
```

IDs and Classes

Once an XHTML tag has been written, you can then assign one id and as many classes as you want to the tag if you wish. IDs and classes are used to further distinguish content and help in the visual styling of content with CSS. The way you would add a class or ID can be seen in the example below.

```
<p class="food, frozen" id="peas">This is a
paragraph about frozen peas in the
supermarket.</p>
```

Additional XHTML Resources

W3Schools XHTML Tutorial
<http://www.w3schools.com/xhtml/>

World Wide Web Consortium (W3C) Official XHTML documentation

<http://www.w3.org/MarkUp/>

World Wide Web Consortium (W3C) XHTML/HTML Validator

<http://validator.w3.org>

Too Easy XHTML – Lowter’s Guide

<http://www.lowter.com/articles/178?PHPSESSID=f088f5baf6035254fde1679764ab2968>

Styling XHTML with Cascading Style Sheets

All of the presentational information that is contained and displayed through a webpage are delivered not by the XHTML of a page, but by the CSS (Cascading Style Sheets) that are linked in the `<head>` tag of an XHTML file.

CSS handles both physical layout, placing elements next to each other the page and also the look of things, such as color, font-size and borders.

Using CSS allows for far greater accessibility efforts and allows designers and creators of webpage to carefully and universally tailor elements of webpages according to their various audience’s needs.

Generally the best practice is to keep CSS as external files that are referenced inside XHTML files but stored outside somewhere else. This makes things easier to manage and maintain.

CSS files also have a certain format that they need to be written in, however this format is more of a list of definitions and can be as extensive or simple as the author chooses.

Below is an example of a basic CSS definition which is telling a web agent to place a border around any paragraph and also setting a width of a paragraph to 80% of the entire window.

```
p {
border: 10px solid black;
width: 80%;
}
```

The general anatomy of a CSS definition or rule can be seen below. All parts of the definition must be in place for the rule to work and function properly.



A CSS file is merely an entire list of these definitions. There are numerous combinations of styles and definitions you can use to style XHTML. We will explore the idea of the cascade of styles along with some other CSS principles in class further.

More Information on Cascading Style Sheets

W3Schools CSS Tutorial

<http://www.w3schools.com/css/>

Styleguide CSS property and value encyclopedia

<http://www.stylegala.com/features/css-reference>

World Wide Web Consortium (W3C) Official CSS Documentation

<http://www.w3.org/Style/CSS/>

World Wide Web Consortium (W3C) CSS Validator

<http://jigsaw.w3.org/css-validator/>

An Example of the Power of CSS – CSS Zen Garden

<http://csszengarden.com/>

Further Information / Questions, Comments, etc.

If you have any questions concerning the creation of this guide or anything included below, you may contact me via the following information:

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