



Web Design Course

LECTURE 4 Introduction to HTML and XHTML

**Computer Science
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0- Basic Syntax

The fundamental syntactic units of HTML are called tags. In general, tags are used to specify categories of content. For each category, a browser has default presentation specifications for the specified content.

The syntax of a tag is the tag's name surrounded by angle brackets (< and >). Tag names must be written in all lowercase letters. Most tags appear in pairs: an opening tag and a closing tag. The name of a closing tag is the name of its corresponding opening tag with a slash attached to the beginning. For example, if the tag's name is p, the corresponding closing tag is named /p. Whatever appears between a tag and its closing tag is the content of the tag. A browser display of an XHTML document shows the content of all of the document's tags; it is the information the document is meant to portray. Not all tags can have content.

The opening tag and its closing tag together specify a container for the content they enclose. The container and its content together are called an element. For example, consider the following element:

```
<p> This is simple stuff. </p>
```

The paragraph tag, <p>, marks the beginning of the content; the </p> tag marks the end of the content of the paragraph element.

Attributes, which are used to specify alternative meanings of a tag, can appear between an opening tag's name and its right angle bracket. They are specified in keyword form, which means that the attribute's name is followed by an equals sign and the attribute's value. Attribute names, like tag names, are written in lowercase letters. Attribute values must be delimited by double quotes.

Comments in programs increase the readability of those programs. Comments in XHTML have the same purpose. They can appear in XHTML in the following form:

```
<! -- Anything except two adjacent dashes -->
```

Browsers ignore XHTML comments—they are for people only. Comments can be spread over as many lines as are needed. For example, you could have the following comment:

Besides comments, several other kinds of text that are ignored by browsers may appear in an XHTML document. Browsers ignore all unrecognized tags. They also ignore line breaks. Line breaks that show up in the displayed content can be specified, but only with tags designed for that purpose. The same is true for multiple spaces and tabs.

Programmers find XHTML a bit frustrating. In a program, the statements specify exactly what the computer must do. XHTML tags are treated more like suggestions to the browser. If a reserved word is misspelled in a program, the error is usually detected by the language implementation system and the program is not executed. However, a misspelled tag name usually results in the tag being ignored by the

, with no indication to the user that anything has been left out. Browsers are even allowed to ignore tags that they recognize. Furthermore, the user can configure his or her browser to react to specific tags in different ways.

1- Standard XHTML Document Structure

Every XHTML document must begin with an xml declaration element that simply identifies the document as being one based on XML. This element includes an attribute that specifies the version number, which is still 1.0. The xml declaration usually includes a second attribute, encoding, which specifies the encoding used for the document. Following is the xml declaration element, which should be the first line of every XHTML document:

```
<?xml version = "1.0" encoding = "utf-8"?>
```

Note that this declaration must begin in the first character position of the document file. The following command states that the document in which it is included complies with the XHTML 1.0 Strict standard:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
    "http://www.w3.org/TR/xhtml11/DTD/xhtml11-strict.dtd">
```

An XHTML document must include the four tags <html>, <head>, <title>, and <body>. The <html> tag identifies the root element of the document. So, XHTML documents always have an <html> tag immediately following the DOCTYPE command, and they always end with the closing html tag, </html>. The html element includes an attribute, xmlns that specifies the XHTML namespace, as shown in the following element:

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

Although the xmlns attribute's value looks like a URL, it does not specify a document. It is just a name that happens to have the form of a URL. An XHTML document consists of two parts, named the *head* and the *body*. The <head> element contains the head part of the document, which provides information about the document and does not provide the content of the document. The body of a document provides the content of the document. The content of the title element is displayed by the browser at the top of its display window, usually in the browser window's title bar.

2- Basic Text Markup

This section describes how the text content of an XHTML document can be formatted with XHTML tags. By *formatting*, we mean layout and some presentation details. For now, we will ignore the other kinds of content that can appear in an XHTML document.

2.0- Title

The <title> tag is required in all HTML documents and it defines the title of the document. The <title> element:

- defines a title in the browser toolbar
- provides a title for the page when it is added to favorites
- displays a title for the page in search-engine results

2.1- Paragraphs

Text is normally organized into paragraphs in the body of a document. The XHTML standard does not allow text to be placed directly in a document body. Instead, textual paragraphs appear as the content of a paragraph element, specified with the tag <p>. In displaying the content of a paragraph, the browser puts as many words as will fit on the lines in the browser window. The browser supplies a line break at the end of each line. For example, the following paragraph might be displayed by a browser as shown in [Figure 1](#):

```
<p>
  Mary had
a
  little lamb, its fleece was white as snow. And
  everywhere that
  Mary went, the lamb
  was sure to go.
</p>
```

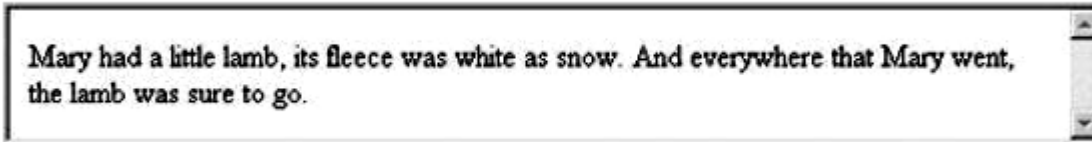


Figure 1 Filling lines

Notice that multiple spaces in the source paragraph element are replaced by single spaces in [Figure 1](#). The following is our first example of a complete XHTML document:

```
<?xml version = "1.0" encoding = "utf-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml11/DTD/xhtml11-strict.dtd">

<!-- greet.html
  A trivial document
  -->
<html xmlns = "http://www.w3.org/1999/xhtml">
  <head> <title> Our first document </title>
  </head>
  <body>
    <p>
      Greetings from your Webmaster!
    </p>
  </body>
</html>
```

[Figure 2](#) shows a browser display of greet.html.



Figure 2 Display of greet.html

If the content of a paragraph tag is displayed at a position other than the beginning of the line, the browser breaks the current line and inserts a blank line. For example, the following line would be displayed as shown in [Figure 3](#):

```
<p> Mary had a little lamb, </p> <p> its fleece was  
white as snow. </p>
```



Figure 3 The paragraph element

2.2 Line Breaks

Sometimes text requires a line break without the preceding blank line. This is exactly what the break tag does. The break tag differs syntactically from the paragraph tag in that it can have no content and therefore has no closing tag (because a closing tag would serve no purpose). The break tag is specified as `
`. The slash indicates that the tag is both an opening and closing tag. The space before the slash represents the absent content. Consider the following markup:

```
<p>  
Mary had a little lamb, <br />  
its fleece was white as snow.  
</p>
```

This markup would be displayed as shown in [Figure 4](#).



Figure 4 Line breaks

2.3 Preserving White Space

Sometimes it is desirable to preserve the white space in text—that is, to prevent the browser from eliminating multiple spaces and ignoring embedded line breaks. This can be specified with the `pre` tag—

for example,

```
<p><pre>  
Mary  
    had a  
        little  
            lamb  
</pre>
```

This markup would be displayed as shown in [Figure 5](#). Notice that the content of the `pre` element is shown in monospace, rather than in the default font.



Figure 5 the pre element

A pre element can contain virtually any other tags, except those that cause a paragraph break, such as paragraph elements.

2.4 Headings

Text is often separated into sections in documents by beginning each section with a heading. Larger sections sometimes have headings that appear more prominent than headings for sections nested inside them. In XHTML, there are six levels of headings, specified by the tags `<h1>`, `<h2>`, `<h3>`, `<h4>`, `<h5>`, and `<h6>`, where `<h1>` specifies the highest-level heading. Headings are usually displayed in boldface font whose default size depends on the number in the heading tag. On most browsers, `<h1>`, `<h2>`, and `<h3>` use font sizes that are larger than that of the default size of text, `<h4>` uses the default size, and `<h5>` and `<h6>` use smaller sizes. The heading tags always break the current line, so their content always appears on a new line. Browsers usually insert some vertical space before and after all headings. The following example illustrates the use of headings:

```

<?xml version = "1.0" encoding = "utf-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

<!-- headings.html
  An example to illustrate headings
-->
<html xmlns = "http://www.w3.org/1999/xhtml">
  <head> <title> Headings </title>
  </head>
  <body>
    <h1> Aidan's Airplanes (h1) </h1>
    <h2> The best in used airplanes (h2) </h2>
    <h3> "We've got them by the hangarful" (h3) </h3>
    <h4> We're the guys to see for a good used airplane (h4) </h4>
    <h5> We offer great prices on great planes (h5) </h5>
    <h6> No returns, no guarantees, no refunds,
      all sales are final! (h6) </h6>
  </body>
</html>

```

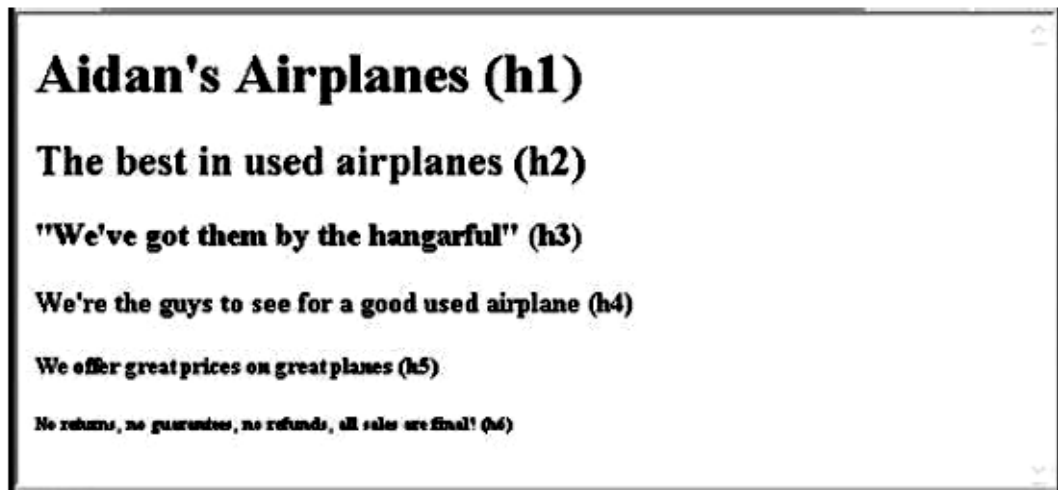


Figure 6 Display of headings.html

2.5 Block Quotations

Sometimes we want a block of text to be set off from the normal flow of text in a document. In many cases, such a block is a long quotation. The `<blockquote>` tag is designed for this situation. Browser designers determine how the content of `<blockquote>` can be made to look different from the surrounding text. In many cases, the block of text is indented, either on the left or right side or both. Another possibility is that the block is set in italics. Consider the following example document:

```
<?xml version = "1.0" encoding = "utf-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">

<!-- blockquote.html
  An example to illustrate a blockquote
-->
<html xmlns = "http://www.w3.org/1999/xhtml">
  <head> <title> Blockquotes </title>
  </head>
  <body>
    <p>
      Abraham Lincoln is generally regarded as one of the greatest
      presidents of the United States. His most famous speech was
      delivered in Gettysburg, Pennsylvania, during the Civil War.
      This speech began with
    </p>
    <blockquote>
      <p>
        "Fourscore and seven years ago our fathers brought forth on
        this continent, a new nation, conceived in Liberty, and
        dedicated to the proposition that all men are created equal.
      </p>
      <p>
        Now we are engaged in a great civil war, testing whether
        that nation or any nation so conceived and so dedicated,
        can long endure."
      </p>
    </blockquote>
    <p>
      Whatever one's opinion of Lincoln, no one can deny the
      enormous and lasting effect he had on the United States.
    </p>
  </body>
</html>
```

Figure 7 shows a browser display of blockquote.html.

Abraham Lincoln is generally regarded as one of the greatest presidents of the United States. His most famous speech was delivered in Gettysburg, Pennsylvania, during the Civil War. This speech began with

"Fourscore and seven years ago our fathers brought forth on this continent, a new nation, conceived in Liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation or any nation so conceived and so dedicated, can long endure."

Whatever one's opinion of Lincoln, no one can deny the enormous and lasting effect he had on the United States.