Chapter 4: Marking Up With HTML: A Hypertext Markup Language Primer

Fluency with Information Technology
Third Edition

by Lawrence Snyder

Marking Up with HTML

• Tags describe how a web page should look
• Formatting with Tags:
  – Words or abbreviations enclosed in angle brackets < >
  – Come in pairs (beginning and end):
    • <title> </title>
  – Tags are not case-sensitive, but the actual text between the tags is
Tags for Bold, Italic, and underline

- **Bold:** `<b>` `</b>`
- **Italic:** `<i>` `</i>`
- **Underline:** `<u>` `</u>`
  - Tag pair surrounds the text to be formatted
  - You can apply more than one kind of formatting at a time
  - `<b><i>Veni, Vidi, Vici!</i></b>` produces: *Veni, Vidi, Vici!*
  - Tags can be in any order, but have to be nested correctly
  - Some tags do not surround anything, so they don’t have an ending form. Closing angle bracket is replaced by `/>`
    - `<hr />` inserts a horizontal rule (line)
    - `<br />` inserts a line break

An HTML Web Page File

Begins with `<html>` and ends with `</html>`

```html
<html>
<head>
  Preliminary material goes here, including  
  <title> … </title>
</head>
<body>
  Main content of the page goes here  
</body>
</html>
```

Structuring Documents

- Markup language describes how a document's parts fit together
- **Headings:**
  - Choice of eight levels of heading tags to produce headings, subheadings, etc.
  - Headings display material in large font on a new line
  - `<h1>Pope</h1>` `<h2>Cardinal</h2>` `<h3>Archbishop</h3>`
    produces:
    - Pope
    - Cardinal
    - Archbishop
HTML Format vs. Display Format

- HTML text was run together on one line, but displayed formatted on separate lines
- HTML source tells the browser how to produce the formatted image based on the meaning of the tags, not on how the source instructions look
- But HTML is usually written in a structured (indented) form to make it easier for people to understand

```html
<h1>Pope</h1>
<h2>Cardinal</h2>
<h3>Archbishop</h3>
```

White Space

- White space that has been inserted for readability
  - Spaces
  - Tabs
  - New lines
- Browser turns any sequence of white space characters into a single space before processing HTML
  - Exception: Preformatted information between <pre> and </pre> tags is displayed as it appears
Brackets in HTML: The Escape Symbol

- What if our web page needed to show a math relationship like \( 0 < p > r \)?
  - The browser would interpret \(< p >\) as a paragraph tag, and would not display it.
- To show angle brackets, use escape symbol — ampersand (\&amp;) — then an abbreviation, then a semicolon (;)
  - \&lt; displays as \(<\)
  - \&gt; displays as \(>\)
  - \& displays as \&
Special Characters

- `&lt;` <
- `&gt;` >
- `&amp;` &
- `&nbsp;` (non-breaking space)
- `&mdash;` – (em dash)

Full list at
http://www.w3.org/TR/REC-html40/sgml/entities.html

Accent Marks in HTML

- Letters with accent marks use the escape symbol
- Ampersand, then letter, then the name of the accent mark, then semicolon
  ```html
  &eacute; displays as é
  &ntilde; displays as ñ
  ```

Full list at
http://www.w3.org/TR/REC-html40/sgml/entities.html

<table>
<thead>
<tr>
<th>Symbol</th>
<th>HTML</th>
<th>Symbol</th>
<th>HTML</th>
<th>Symbol</th>
<th>HTML</th>
<th>Symbol</th>
<th>HTML</th>
</tr>
</thead>
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</tr>
</tbody>
</table>

Note: For an accent mark on an uppercase letter, make the letter following the & uppercase.
Attributes in HTML

- Properties such as text alignment require more information
- For justification, we need to specify left, right, or center
- Attributes appear inside the angle brackets of start tag, after tag word, with equal sign, value in double quotes. Do not use "fancy/smart quotes!!!"
  `<p align = "center">`  
  (default justification is left)
- Horizontal rule attributes: width and size (thickness) can be specified or left to default
  `<hr width="50%" size="3" />`

Marking Links With Anchor Tags

- There are two sides of a hyperlink:
  1. Anchor text (the text in the current document that is highlighted)
  2. Hyperlink reference (the address of a Web page / target of the link)
- Begin with `<a` followed by a space
- Give the link reference using `href="filename"`
- Close the start anchor tag with `>`
- Text to be displayed for this link
- End anchor tag with `</a>`
  `<a href="http://www.aw.com/snyder/index.html">FIT</a>`

Anchor Tags (cont'd)

- Absolute pathnames: Reference pages at other web sites using complete URLs
  http://server/directory_path/filename
  `<a href="http://www.aw.com/snyder/index.html">FIT</a>`
Anchor Tags (cont'd)

- **Relative pathnames**: Reference pages stored in the same directory (give only the name of the file)
  - Read `<a href="./filename">this file</a>`.
  - Relative pathnames are more flexible — we can move web files around as a group
  - Relative pathnames can also specify a path deeper or higher in the directory structure
    - `.directory/filename`  `../directory/filename`
    - Current directory
    - .. Parent directory (one level up)

Including Pictures With Image Tags

- **Image Tag Format**:
  `<img src="filename" />`
  - `src` short for source
  - Absolute and relative pathname rules apply
- Pictures can be used as links using anchor tag
  `<a href="fullsize.jpg"><img src="thumbnail.jpg" /></a>`
Including Pictures With Image Tags

- GIF and JPEG Images
  - GIF: Graphic Interchange Format
    - 8 bits (256 colors or levels of gray)
  - JPEG: Joint Photographic Experts Group
    - 24 bits (millions of colors – full color; levels of compression)
    - Tell browser which format image is in using filename extension (.gif, .jpg or .jpeg)

Positioning the Image in the Document

- By default, images are inserted in the page at the point where the tag is specified in the HTML, and the text lines up with the bottom of the image
- Align attribute can line up image with top of line of text, middle, or bottom
- Align left, center, or right attribute puts the image on the side of the browser window — text flows around it
- To put image on separate line, enclose within paragraph tags
- Can specify how large the image should be displayed (in pixels or % of window) with height and width attributes

Handling Color

- Color is used for both background and text
- bgcolor attribute of body tag gives solid background color
  - Use hexadecimal color numbers (0-9 A-F)
    `<body bgcolor="#FF00FF">` (magenta)
  - Or use predefined color terms
    `<body bgcolor="magenta">`
- color attribute can be used with body text, link, or font tags
  `<font color="red">text</font>`
Handling Lists

- *Unordered* (bulleted) list:
  - `<ul>` and `</ul>` tags begin and end the list
  - `<li>` and `</li>` tags begin and end the items within the list
- *Ordered* (numbered) list:
  - `<ol>` and `</ol>` tags begin and end the list
  - Uses the same `<li>` tags
- *Sublists:* Insert lists within lists (between `<li>` `<li>` tags)
- *Definitional* list:
  - `<dl>` and `</dl>` tags begin and end the list
  - `<dt>` and `</dt>` surround the terms to be defined
  - `<dd>` and `</dd>` surround the definitions (indented)

Handling Tables

- Tables begin and end with `<table>` and `</table>` tags
- Rows are enclosed in `table row` tags, `<tr>` and `</tr>`
- Cells of each row are surrounded by `table data` tags, `<td>` and `</td>`
- Create a caption centered at the top of the table with `<caption>` and `</caption>` tags
- Column headings are created as first row of table by using `<th>` and `</th>` tags instead of table data tags
- See examples in textbook

Controlling Text with Tables

- Tables can control arrangement of information on a page
- e.g., a series of links listed across the top of the page could be placed in a one-row table to keep them together
  - If the window is too small to display all the links, table keeps them in a row and a scroll bar is added
  - If the tags are not in a table, the links will wrap to the next line instead