Chapter 4

More HTML

Nesting Tags

- How do you write the following in HTML?
  - The wrong way:
    ```html
    This is `<strong>`really, `<em>`REALLY</em>` fun</strong>!
    ```
  - Tags must be correctly nested.
  - A closing tag must match the most recently opened tag.
  - The right way:
    ```html
    This is `<strong>`really, `<em>`REALLY</em>` fun</strong>!
    ```

Spacing And Indentation

- Which tag is not closed?
  ```html
  <html><head><title>Can you find it?</title></head>
  <body><p><ul><li>Not it!</li><li>Is it here?</li></ul><li>More words here</li><li>This is very hard to read</li></p></body></html>
  ```

How About Now?

```html
<html>
<head>
<title>Can you find it?</title>
</head>
<body>
<p>
<ul>
<li>Not it!</li>
<li><ol>
<li>Is it here?</li>
<li>Or maybe it's this one?</li>
</ol></li>
<li>More words here</li>
<li>This is very hard to read</li>
</p>
</body>
</html>
```

Spacing And Indentation Guidelines

- If the tag's content fits on one line, open and close the tag on the same line.
  ```html
  <li>Is it here?</li>
  ```
- Otherwise, the tag's content should be indented more than the starting and closing tags.
  ```html
  <li>Is it here?</li>
  ```
- If the starting and closing tags are on separate lines, they should line up vertically, like above.

Spacing And Indentation Guidelines

- Use `newlines` to structure the HTML.
  ```html
  <ul>
  <li>Item 1</li>
  <li>Item 2</li>
  <li>Item 3</li>
  </ul>
  ```
- The wrong way:
  ```html
  <ul>
  <li>Item 1</li>
  <li>Item 2</li>
  </ul>
  ```
- The right way:
  ```html
  <ul>
  <li>Item 1</li>
  </ul>
  ```
**Extensible HTML: XHTML**

- Newer version of HTML, standardized in 2000
- XHTML tags must always be ...
  - ... in lowercase
  - ... closed
  - ... nested properly
- XHTML 1.0 Strict is the standard we will be using.

**Why Use Standards?**

- Ensure interoperability across different browsers
- Can easily verify if standards-compliant
  - XHTML Validation Service: [http://validator.w3.org/](http://validator.w3.org/)
- Alas, not all web browsers (particularly Internet Explorer) adhere to the standards
  - [http://www.webdevout.net/browser-support-summary](http://www.webdevout.net/browser-support-summary)

**Basic XHTML Template**

```xml
<?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">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>page title goes here</title>
</head>
<body>
  page content goes here
</body>
</html>
```

**HTML Element**

<table>
<thead>
<tr>
<th>Element</th>
<th>Start tag</th>
<th>Content</th>
<th>End tag</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;p&gt;</code></td>
<td><code>class=&quot;foo&quot;</code></td>
<td>This is a paragraph.</td>
<td><code>&lt;/p&gt;</code></td>
</tr>
</tbody>
</table>

**Block vs. Inline Elements**

- Block elements create “larger” structures than inline elements.
- In general,
  - block elements may contain text, inline elements, and other block elements.
  - inline elements may contain only text and other inline elements.
- Block elements begin on new lines, inline elements do not.

**Block or Inline?**

- **Block**
  - `h1`, `h2`, ..., `h6`
  - `p`
  - `ul`, `ol`
  - `hr`
- **Inline**
  - `br`
  - `em`
  - `strong`
  - `a`
  - `img`
Document Flow: Block Elements

Document Flow: Inline Elements

Document Flow Example

Why Important?

Only block elements are directly allowed inside the body element.

Images In XHTML

- Requires an alt attribute describing the image

```
<p>
    <img src="hamster.jpg" alt="Hamster eating carrot" />
</p>
```

- Image present:
- Image missing:
**XHTML Validation**

- Make sure your files validate!
  - XHTML Validation Service: [http://validator.w3.org/](http://validator.w3.org/)
- When fixing errors, fix the first error and then try validating again.
  - For example, a single missing closing tag might be confused for several errors.
- Validation does not check for proper indentation.

**HTML/XHTML Resources**

- W3Schools HTML Tutorial
  - [http://www.w3schools.com/html/default.asp](http://www.w3schools.com/html/default.asp)
- W3Schools XHTML Tutorial
  - [http://www.w3schools.com/xhtml/default.asp](http://www.w3schools.com/xhtml/default.asp)
- Complete list of HTML tags
  - [http://www.w3schools.com/tags/default.asp](http://www.w3schools.com/tags/default.asp)
- XHTML 1.0 Strict Reference

**Cascading Style Sheets (CSS)**

- Describe the appearance, layout, and presentation of information on a web page
- Describe *how* information is to be displayed, not *what* is being displayed

**Basic CSS Rule**

- A CSS file contains one or more **rules**.
- **Rule syntax**:

```css
selector {
  property: value;
  property: value;
  ... 
  property: value;
}
```
- **selector**: HTML element you wish to style
- **property**: attribute you wish to change

**Example**

- **CSS**:

```css
/*
  font-family: sans-serif;
  background-color: yellow;
*/
```

- **HTML**:

```html
<p>Can you see me now?/p>
Click me once to close!</p>
```

---

19  20  21  22  23  24
**Color Properties**

- color: color of the element's text
- background-color: color that will appear behind the element

**Colors**

- Colors are defined by three numbers (from 0 to 255) representing the amount of red, green, and blue (RGB)
- Can specify colors by:
  - Pre-defined name
    - aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white, yellow
  - RGB triplet
    - rgb(R,G,B), where R, G, and B are each numbers from 0 to 255
  - RGB triplet in hexadecimal format*
    - #RRGGBB where RR, GG, BB are the red, green, and blue values in hexadecimal
- ColorSchemer: [http://www.colorschemer.com/online.html](http://www.colorschemer.com/online.html)

*You do not need to understand hexadecimal.

**Colors Example**

**Ways to specify teal**

```css
h1 {
  color: teal;
}
```

```css
h1 {
  color: rgb(0,128,128);
}
```

```css
h1 {
  color: #008080;
}
```

**More Properties: Font**

- font-family: which font will be used
- font-size: how large the letters will be drawn
- font-style: used to enable/disable italic style
- font-weight: used to enable/disable bold style

**For examples on how to set these and other properties, see:**

- [http://www.w3schools.com/css/css_reference.asp](http://www.w3schools.com/css/css_reference.asp)

**Attaching a CSS File: `<link />`**

```html
<head>
  <title>...</title>
  <link rel="stylesheet" type="text/css" href="style.css" />
</head>
```

- Copy the `rel` and `type` attributes and their corresponding values verbatim
- Use the `href` attribute to specify the location of a stylesheet file
  - Path location may be absolute or relative

**CSS Resources**

- CSS property references:
  - [http://www.w3schools.com/css/css_reference.asp](http://www.w3schools.com/css/css_reference.asp)
- CSS tutorial:
- CSE 190 M (Web Programming) lecture notes:
  - [http://www.cs.washington.edu/education/courses/cse190m/Currnt/lectures/slides/lecture03-basic_css.html](http://www.cs.washington.edu/education/courses/cse190m/Currnt/lectures/slides/lecture03-basic_css.html)