Web Design with HTML5 & CSS3

Week 4

Term Project Begins!

Chapter 4

Term Project - Connecting to the Web Server

Web Design with HTML5 & CSS3

Chapter 4

Applying CSS Styles To Webpages

What is CSS?

Stands for Cascading Style Sheets
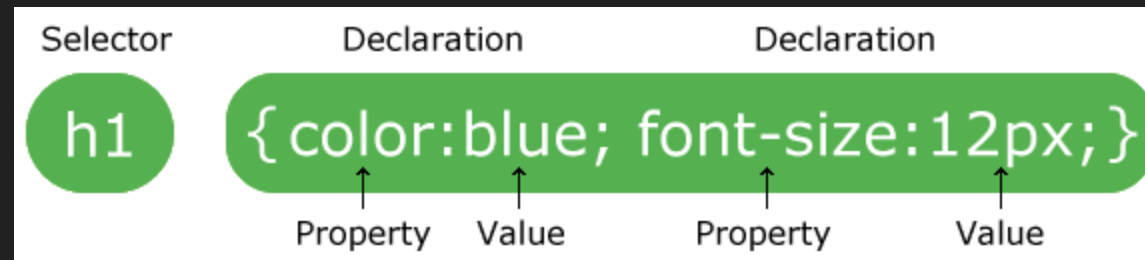
Describes how HTML elements are to be displayed

Used to separate style from content

Cascading Style Sheets

- Style – A rule that defines how an *element* is to appear
- Style sheet
  - Set of CSS style rules
  - A CSS file can be attached to several webpages
  - Provides the flexibility to redesign or rebrand a website
 - .css file

CSS Syntax

○ A CSS rule consists of a selector and a declaration block:

Selector   Declaration   Declaration

h1   { color:blue; font-size:12px; }

Property   Value   Property   Value

CSS Selector

○ The selector points to the HTML *element* to be styled

  ○ body, header, nav, main, footer, H1-H6, p, and others

  ○ Used to "find" (or select) HTML elements based on their element name, id, class, and more

Selector	Declaration	Declaration
h1	{color:blue;	font-size:12px;}
	Property Value	Property Value
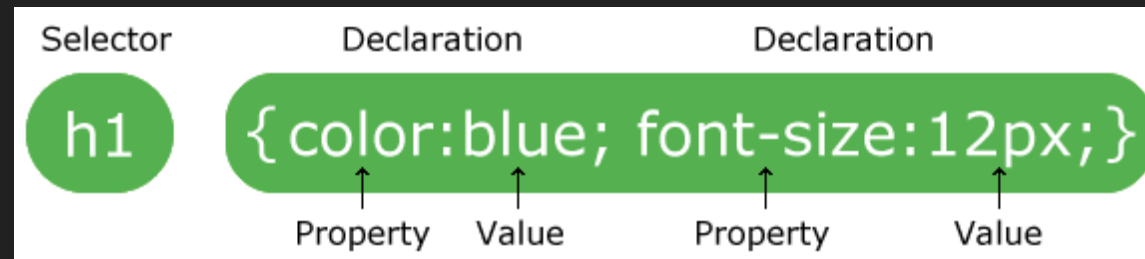
CSS Declaration

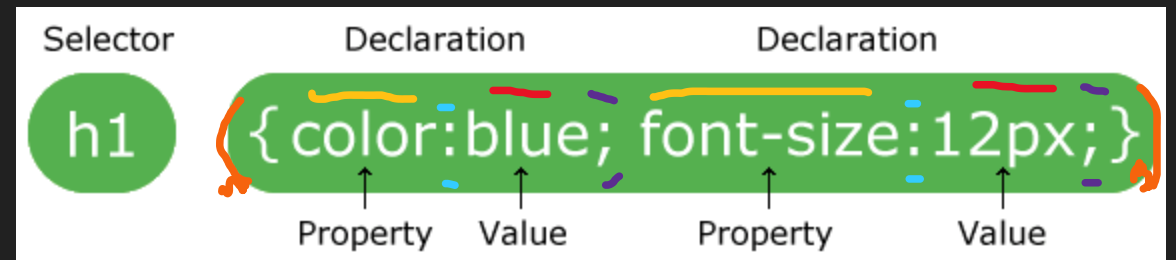- Defines the exact formatting of the style
- Consists of:
  - Property
  - Value
  - Separated by a colon
  - Terminated by a semicolon
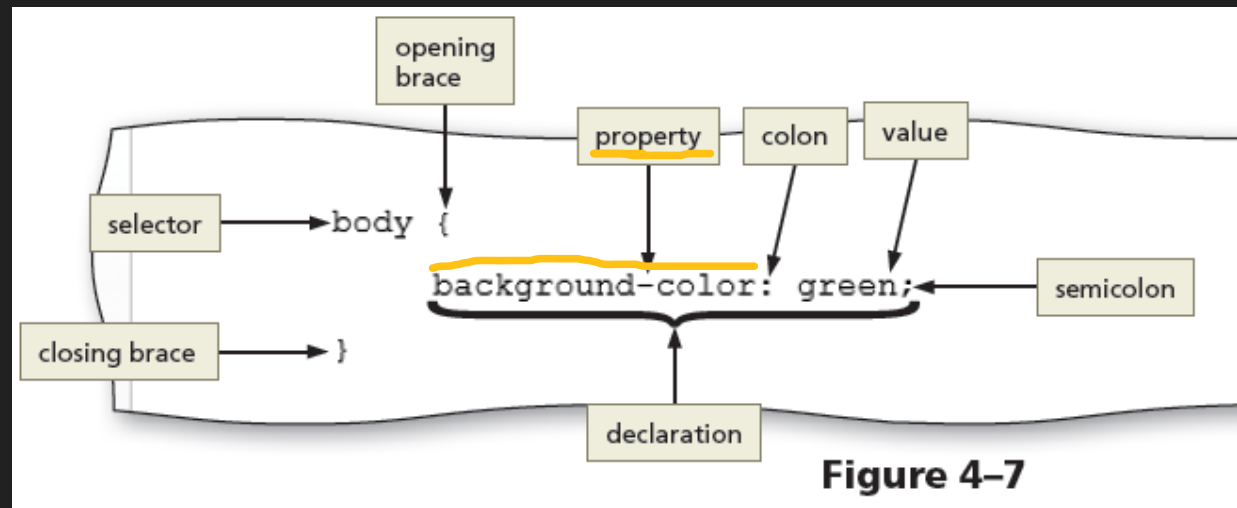- The declaration block is surrounded by curly braces

Selector {property: value;}

Selector   Declaration   Declaration

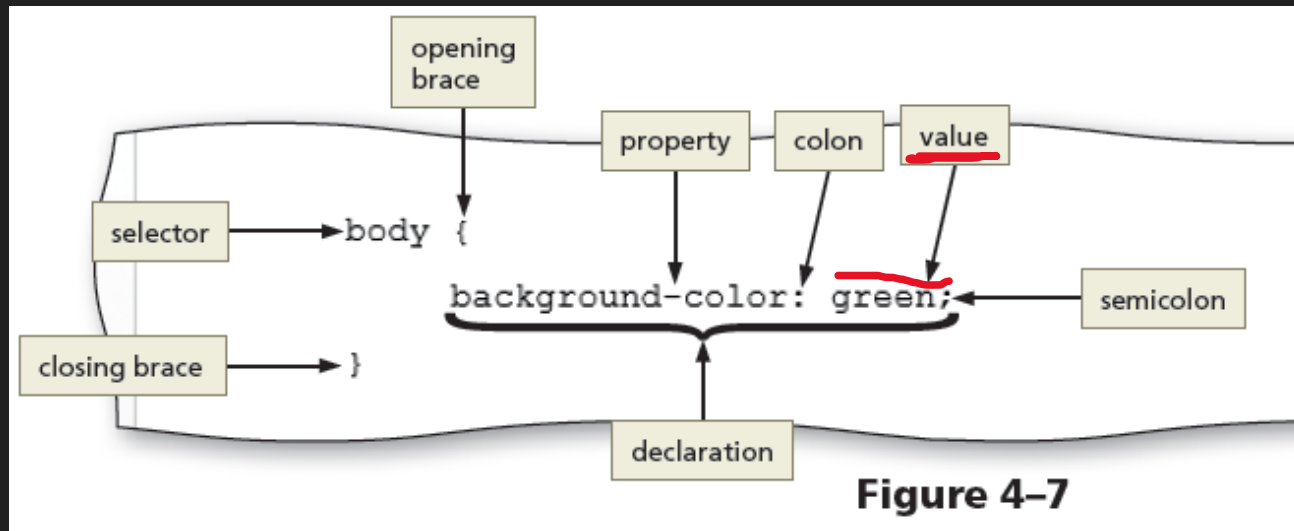h1   {color:blue; font-size:12px;}

Property   Value   Property   Value

Declaration Property

- The property identifies the style characteristic to apply, such as
  - color (text color)
  - background-color
  - text-indent
  - border-width
  - font-style

Figure 4–7

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Declaration Value

- The value identifies the property value to apply
- In this example, the background color is green

Figure 4–7

Selector
HTML Element Name

```html
<!DOCTYPE html>
<html>
<head>
<style>
p {
    text-align: center;
    color: red;
}
</style>
</head>
<body>

<p>Every paragraph will be affected by the style.</p>
<p id="para1">Me too!</p>
<p>And me!</p>

</body>
</html>
```

Every paragraph will be affected by the style.

Me too!

And me!

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id Selector

- id plus name value

  `<div id="mainFeature"> This is the main feature section </div>`

  - A *unique* id or name is assigned to an element
  - The id name must (should) be unique within the HTML document

- Two purposes:

  - Points to a style in a style sheet
  - Used by JavaScript
    - Can reference elements by the ID attribute name
    - Manipulate the element

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id Selector

○ To specify an id style, start with hash (#) character, followed by the id of the element

```
<!DOCTYPE html>
<html>
<head>
<style>
#para1 {
    text-align: center;
    color: red;
}
</style>
</head>
<body>

<p id="para1">Hello World!</p>
<p>This paragraph is not affected by the style.</p>

</body>
</html>
```

Hello World!

This paragraph is not affected by the style.

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id Selector

○ id and CSS – This will work

```
<h1 id="mainFeature">Header 1</h1>
<p>A paragraph.</p>
<p id="important">Note that this is an important paragraph. </p>

<h2> Header 2</h2>
<p>A paragraph.</p>
<p id="important">Note that this is an important paragraph. </p>
```

Header 1

A paragraph.

Note that this is an important paragraph.

Header 2

A paragraph.

Note that this is an important paragraph.

○ But, be aware of JavaScript

id Selector

- To style the div id="container" element, use #container as the selector

```
<body>
    <div id="container">   <!-- HTML element -->
    <header>
        <img src="images/ffc_logo.png">
    </header>
    . . .
    . . .
    </div>
</body>
```

```css
#container {      -- #container is the selector
    width: 80%;
    margin-left: auto;
    margin-right: auto;
}
```

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class Selector

- Can be applied to more than one element
- The css class selector includes a period (.) before the class name

```
<!DOCTYPE html>
<html>
<head>
<style>
.center {
    text-align: center;
    color: red;
}
</style>
</head>
<body>

<h1 class="center">Red and center-aligned heading</h1>
<p class="center">Red and center-aligned paragraph.</p>

</body>
</html>
```

Red and center-aligned heading

Red and center-aligned paragraph.

Qualifying a class Selector

○ Takes advantage of nested *elements*

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
    text-align: center;
    color: red;
}
</style>
</head>
<body>

<h1 class="center">This heading will not be affected</h1>
<p class="center">This paragraph will be red and center-aligned.</p>

</body>
</html>
```

This heading will not be affected

This paragraph will be red and center-aligned.

Specifying more than one class to an element

```html
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
    text-align: center;
    color: red;
}

p.large {
    font-size: 300%;
}
</style>
</head>
<body>

<h1 class="center">This heading will not be affected</h1>
<p class="center">This paragraph will be red and center-aligned.</p>
<p class="center large">This paragraph will be red, center-aligned, and in a large font-size.</p>

</body>
</html>
```

This heading will not be affected

This paragraph will be red and center-aligned.

This paragraph will be red, center-aligned, and in a large font-size.

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Grouping Selectors

- Elements with the same style definition

- Better to group the selectors, to minimize the code

- To group selectors, separate each selector with a comma

```css
h1, h2, p {
    text-align: center;
    color: red;
}
```

```css
h1 {
    text-align: center;
    color: red;
}

h2 {
    text-align: center;
    color: red;
}

p {
    text-align: center;
    color: red;
}
```

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CSS Comments

- Used to explain code
- Ignored by browsers
- Starts with /* and ends with */
- Can also span multiple lines:

```css
p {
    color: red;
    /* This is a single-line comment */
    text-align: center;
}

/* This is
a multi-line
comment */
```

Including CSS in an HTML Document

Inserting styles into a webpage, best to worse:

1. External style sheet
2. Internal style sheet
3. Inline style
4. Browser default

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External Style Sheet

- An external text file with .css extension - mystyles.css
- Can be used to change an entire website with one CSS document
- The CSS document should not contain any html tags
- mystyles.css:

```css
body {
    background-color: lightblue;
}


h1 {
    color: navy;
    margin-left: 20px;
}
```

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External Style Sheet – Link Tag

○ Use <link> tag in the head section to link to CSS file:

```
<head>
    <link rel="stylesheet" href="css/styles.css">
    <title>Forward Fitness Club</title>
    <meta charset="utf-8">
</head>
```

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Linking to a CSS File

<link rel="stylesheet" href="css/styles.css">

- The link element uses two attributes:
  - rel
    - Specifies a relationship between the web page and linked document
    - stylesheet value indicates that the linked document is a style sheet
  - href
    - Specifies the file path and/or file name of the linked document

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Linking to a CSS File

type="text/css"

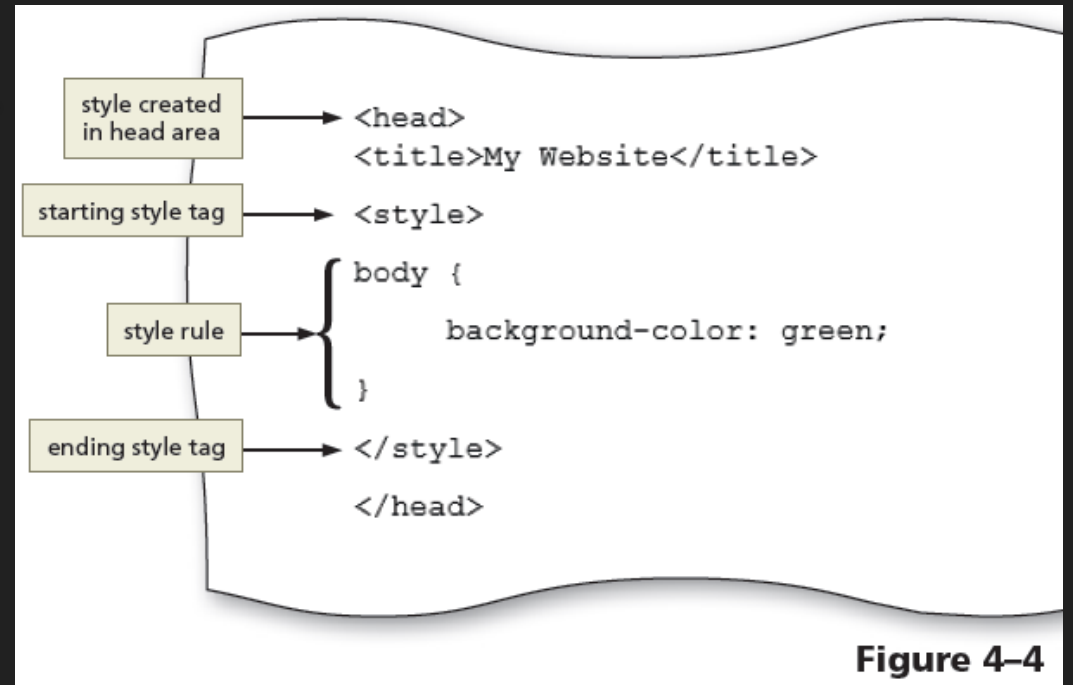○ Attribute and value is also commonly used within a link element to reference a CSS file – not required

```
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
</head>
```

Internal Style Sheet

○ Specified within the opening <head> and closing </head> tags

○ Styles are defined within the <style> and </style) tags

○ Applies to the entire HTML document


```
style created        <head>
in head area         <title>My Website</title>

starting style tag   <style>

                     body {
style rule               background-color: green;
                     }

ending style tag     </style>

                     </head>
```

Figure 4–4

Inline Styles - Example

○ Applies a unique style to a single element

○ How to change the color and left margin of a <h1> element:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="color:blue;margin-left:30px;">This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

This is a heading

This is a paragraph.

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Cascading Order – Multiple Style Sheets

○ Which style will be used when there is more than one style specified for an HTML element? Reason it out.

Browser default ?

External ?

Inline style (inside an HTML element) ?

Internal style sheets ?

Cascading Order – Multiple Style Sheets

- Which style will be used when there is more than one style specified for an HTML element?

- All styles "cascade" into a new "virtual" style sheet by the following rules, where number one has the highest priority:

  1. Inline style (inside an HTML element)

  2. External and internal style sheets (head section, based on placement)

  3. Browser default

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Multiple Style Sheets

- Assume that an external style sheet called mystyle.css has the following style for the <h1> element:

- mystyle1.css

```
h1 {
    color: navy;
}
```

- then, assume that an internal style sheet also has the following style for the <h1> element:

```
h1 {
    color: orange;
}
```

Multiple Style Sheets

○ If the internal style is defined after the link to the external style sheet, the <h1> elements will be "orange":

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
<style>
h1 {
    color: orange;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>The style of this document is a combination of an external stylesheet, and internal style</p>

</body>
</html>
```

This is a heading

The style of this document is a combination of an external stylesheet, and internal style

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Multiple Style Sheets

○ If the internal style is defined before the link to the external style sheet, the <h1> elements will be "navy":

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
    color: orange;
}
</style>
<link rel="stylesheet" type="text/css" href="mystyle.css">
</head>
<body>

<h1>This is a heading</h1>
<p>The style of this document is a combination of an external stylesheet, and internal style</p>

</body>
</html>
```

This is a heading

The style of this document is a combination of an external stylesheet, and internal style

CSS Text Properties

Table 4–1 Common Text Properties and Values

Property	Description	Common Values
font-family	Specific and general font names	font-family: Cambria, "Times New Roman", serif; font-family: Verdana, Arial, sans-serif; font-family: Georgia, "Times New Roman", serif;
font-size	Absolute or relative size of a font	font-size: 1.5em; font-size: 50%; font-size: x-large; font-size: 14pt;
font-weight	Weight of a font	font-weight: bold; font-weight: bolder; font-weight: lighter;
font-style	Style of a font	font-style: normal; font-style: italic; font-style: oblique;
text-align	Alignment of text	text-align: center; text-align: right; text-align: justify;
color	Color of text	color: red; color: blue; color: green;

CSS Text Properties (continued)

Table 4–2 Font Size Measurement Units

Unit	Definition	Example	Comments
em	Relative to the default font size of the element	font-size: 1.25em;	Recommended by W3C; sizes are relative to the browser's default font size
%	Relative to the default font size of the element	font-size: 50%;	Recommended by W3C; sizes are relative to the browser's default font size
px	Number of pixels	font-size: 25px;	Depends on screen resolution
pt	Number of points	font-size: 12pt;	Use for printing webpages
keyword	Relative to a limited range of sizes	font-size: xx-small;	Sizes are relative to the browser's default font size, but size options are limited

CSS Colors

- The color property is used to set the color of text
- The color is specified by:
    - a color name - "red"
    - a HEX value - #ff0000"
    - an RGB value - "rgb(255,0,0)"
- Hexadecimal values consist of a six-character code that corresponds to RGB (Red, Green, Blue) color values
- Color Codes

CSS Colors (continued)

○ To style a background color as gray:

```
background-color: gray;
background-color: #808080;
```

Table 4–3 Color Values		
Color	**Hexadecimal**	**RGB**
Black	#000000	rgb(0,0,0)
White	#FFFFFF	rgb(255,255,255)
Red	#FF0000	rgb(255,0,0)
Green	#008000	rgb(0,128,0)
Blue	#0000FF	rgb(0,0,255)
Yellow	#FFFF00	rgb(255,255,0)
Orange	#FFA500	rgb(255,165,0)
Gray	#808080	rgb(128,128,128)

CSS Colors (continued)

○ The default text color for a page is defined in the body selector

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
    color: blue;
}

h1 {
    color: green;
}
</style>
</head>
<body>

<h1>This is heading 1</h1>
<p>This is an ordinary paragraph. Notice that this text is blue. The default text color for a page
is defined in the body selector.</p>

</body>
</html>
```

This is heading 1

This is an ordinary paragraph. Notice that this text is blue. The default text color for a page is defined in the body selector.

Text Alignment

○ The text-align property is used to set the horizontal alignment of text. Text can be

left aligned

<div align="right">right aligned</div>

<div align="center">centered</div>

Justified means it will squeeze or stretch the font so words will fit as close to exact within the defined bounds. This looks left aligned at first glance.

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Text Alignment

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
    text-align: center;
}

h2 {
    text-align: left;
}

h3 {
    text-align: right;
}
</style>
</head>
<body>

<h1>Heading 1 (center)</h1>
<h2>Heading 2 (left)</h2>
<h3>Heading 3 (right)</h3>

<p>The three headings above are aligned center, left and right.</p>

</body>
</html>
```

Heading 1 (center)

Heading 2 (left)

Heading 3 (right)

The three headings above are aligned center, left and right.

Text Decoration

- The text-decoration property is used to set or remove decorations from text

- The value text-decoration: none; is often used to remove underlines from links

A link with no underline: Lambton College.ca

```html
<!DOCTYPE html>
<html>
<head>
<style>
a {
    text-decoration: none;
}
</style>
</head>
<body>

<p>A link with no underline: <a href="https://www.lambtoncollege.ca">Lambton College.ca</a></p>

</body>
</html>
```

Text Decoration

○ Other text-decoration values are used to decorate text:

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
    text-decoration: overline;
}

h2 {
    text-decoration: line-through;
}

h3 {
    text-decoration: underline;
}
</style>
</head>
<body>

<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>

</body>
</html>
```

This is heading 1

~~This is heading 2~~

<u>This is heading 3</u>

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Center Content

○ To center all of the elements of a webpage using a single style rule, set the left and right margins to auto

○ In addition, set the width to 80% so that the elements do not span 100 percent of the browser window

```
<div id="container">
    .
    .
    .
</div>
```

```
#container {
    width: 80%;
    margin-left: auto;
    margin-right: auto;
}
```

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Inline Elements and Block Elements

○ A block element appears as a block because it starts and ends with a new line, such as the main element or a paragraph element

○ Inline elements are displayed without line breaks, so they flow within the same line

○ Inline content always appears within block elements

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CSS Box Model

○ Each block element such as header, nav, main, and footer are displayed in a browser as a box with content

Figure 4–9
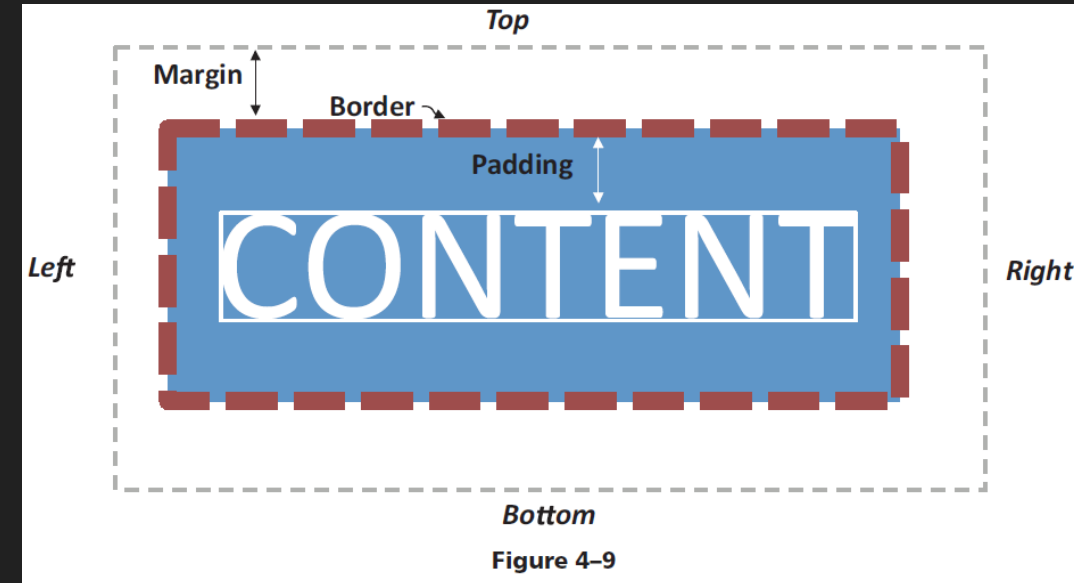
CSS Box Model (continued)

- Padding is the white space between the content and the border of a block element

- The border separates the padding and the margin of the block element

- The margin provides white space between block elements

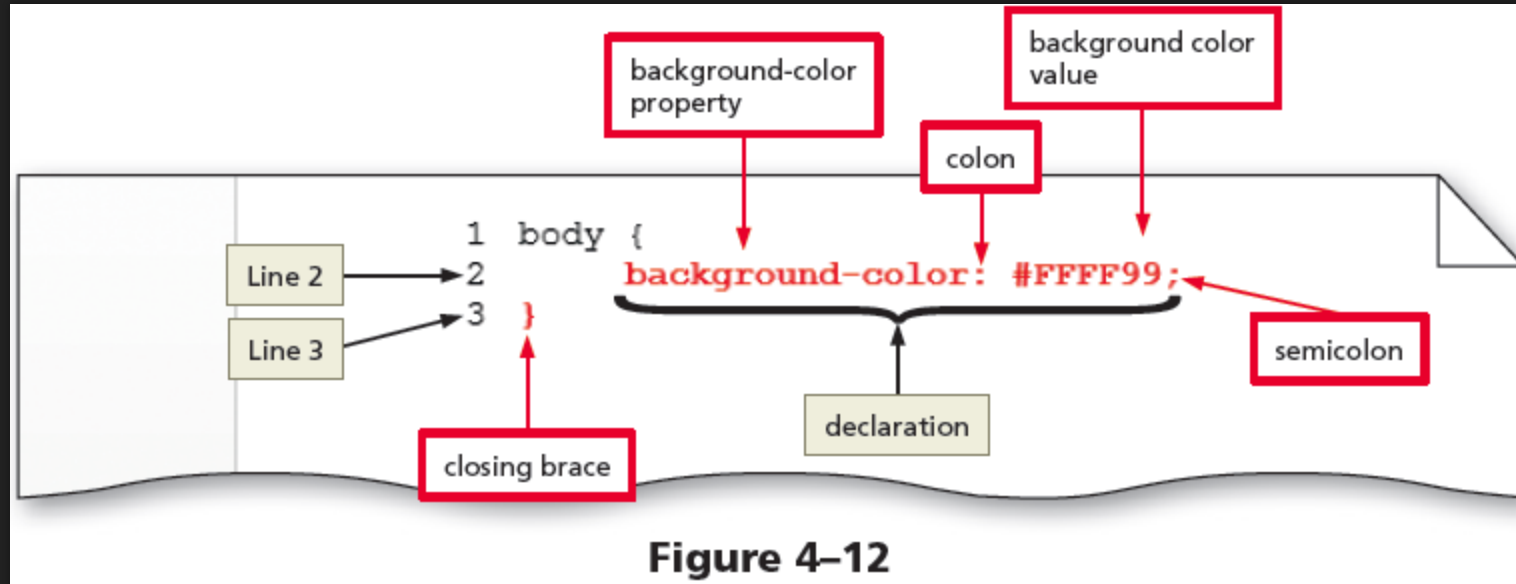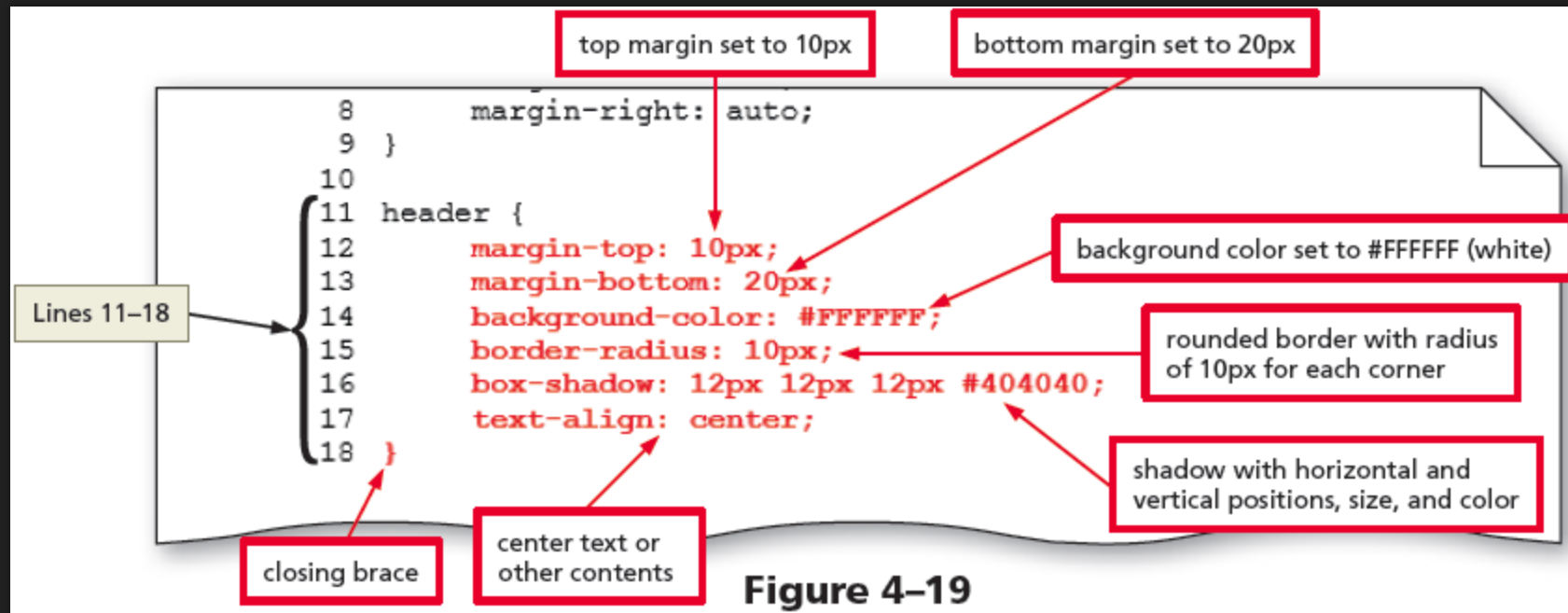Figure 4–9
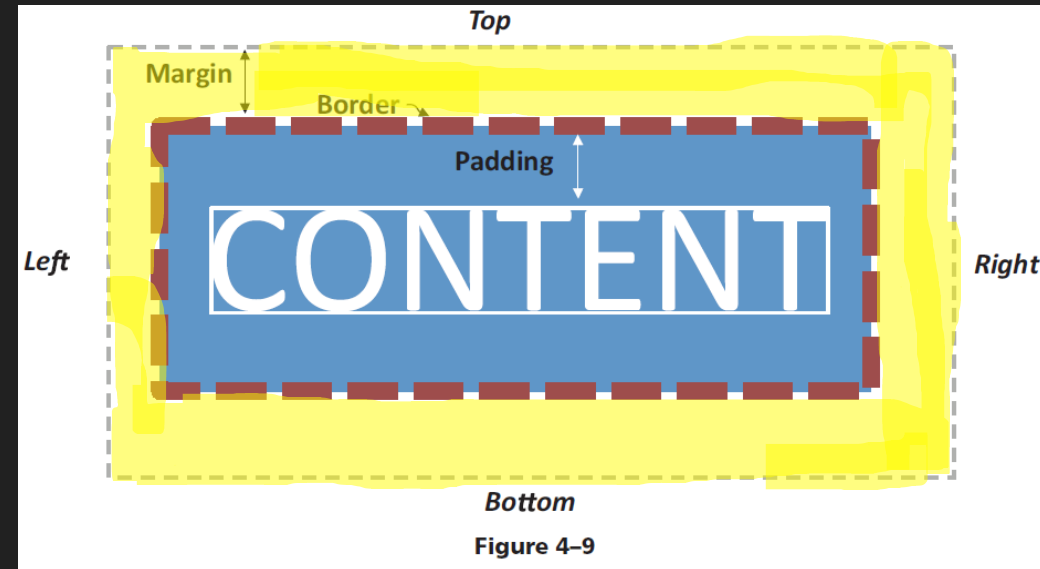
CSS Box Model (continued)

| Table 4–4 Common CSS Box Model Properties		
Property	**Description**	**Examples**
margin	Sets the amount of space around the block element (top, right, bottom, left)	margin: 20px; margin-top: 2em; margin-bottom: 150%;
padding	Sets the amount of space between content and the border of its block element	padding: 10px; padding-left: 1.5em; padding-right: 125%;
border	Sets the format of the block element's border	border: solid 1px #000000;
border-style	Designates the style of a border	border-top-style: solid; border-top-style: dotted;
border-width	Designates the width of a border	border-top-width: 1px; border-bottom-width: thick;
border-color	Designates the border color	border-top-color: #000000; border-bottom-color: gray;
border-radius	Rounds the corners of a block element's border	border-radius: 10px;
box-shadow	Adds a shadow to a block element's border	box-shadow: 8px 8px 8px #000000;

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Create Style Rule for the Body Element

Figure 4–12

Create a Style Rule for the Header Element

Figure 4-19

Create a Style Rule for the Nav Element
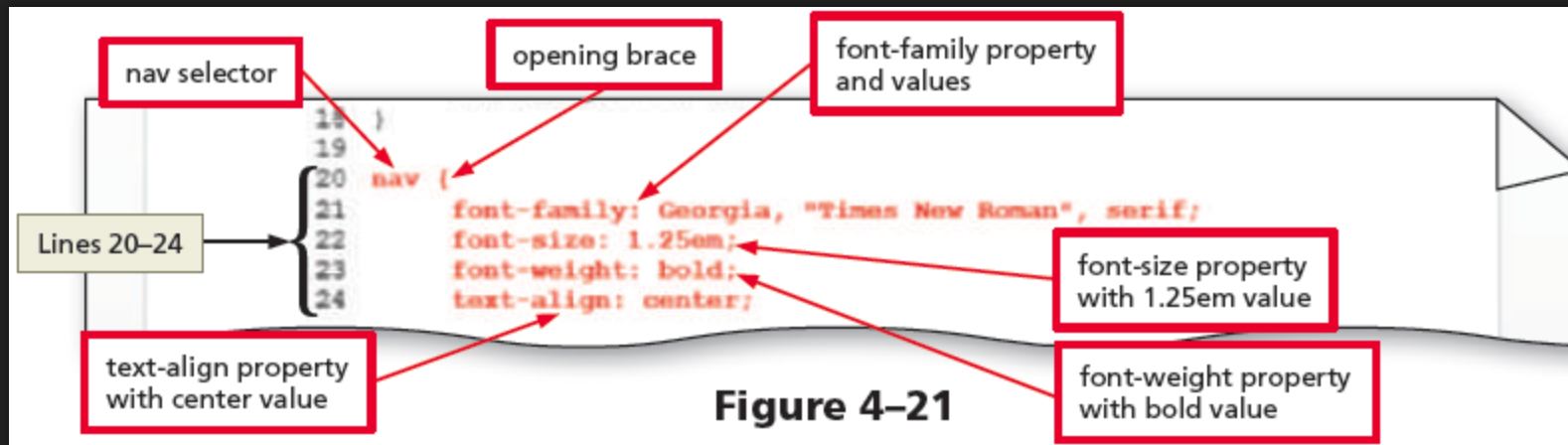
Figure 4–21

Create a Style Rule for the Main Element
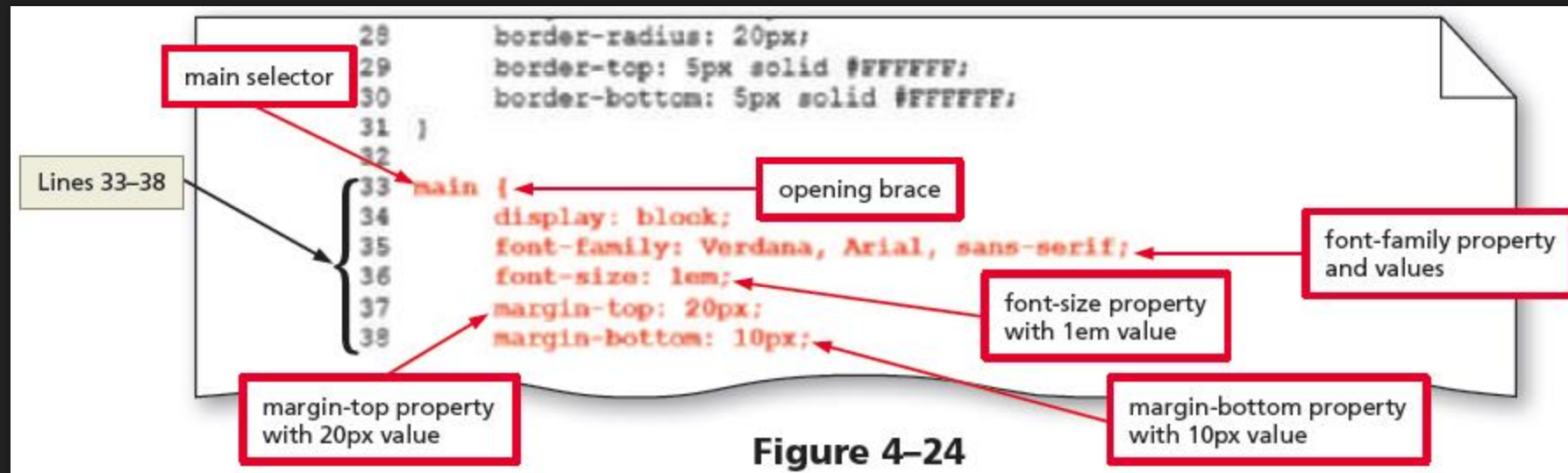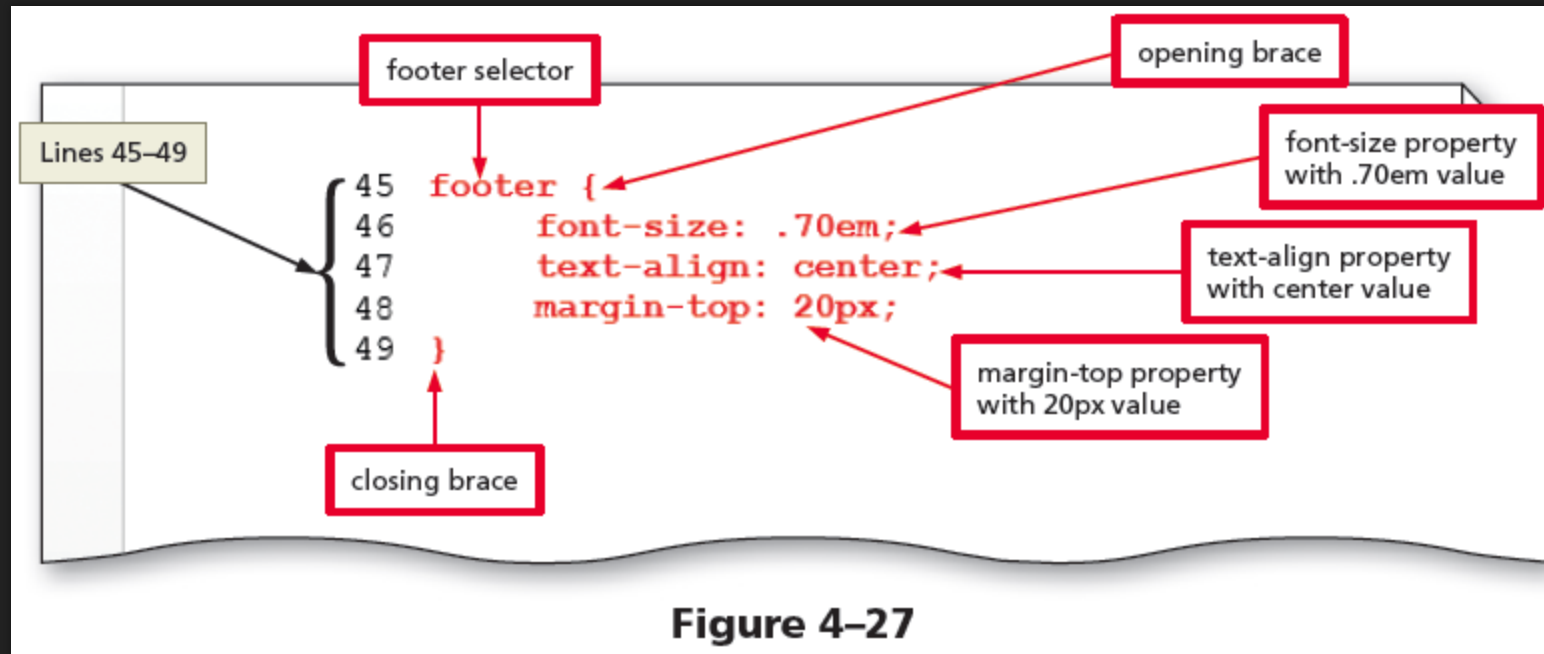

Figure 4–24

Create a Style Rule for the Footer Element

Figure 4–27

Officially CSS Pros

- On to Chapter 4 Fitness
- Make sure you can connect to the web server
- Due by next class:
  - Complete the Chapter 4 Quiz
  - Submit Chapter 4 Fitness, Applied, Lab 1, Lab 2