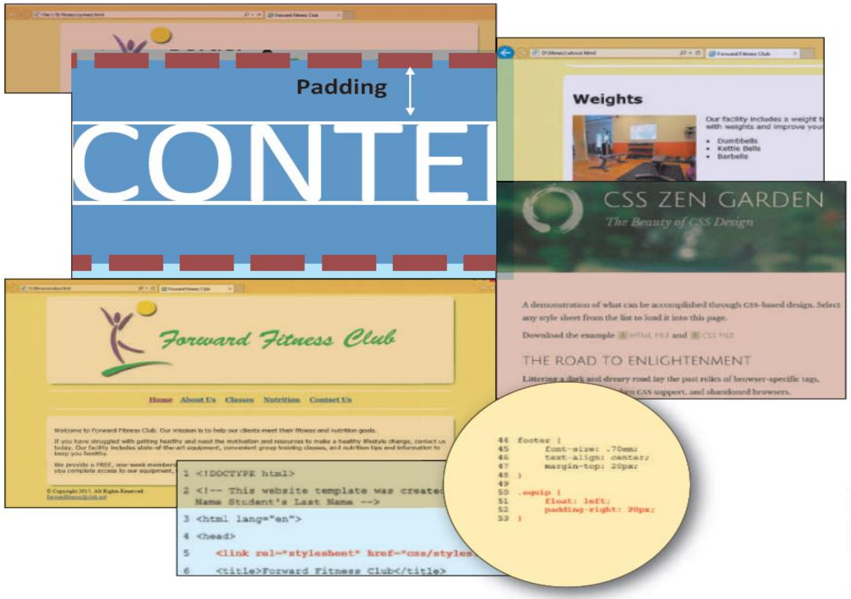
INTERNATIONAL
TRAINING
INSTITUTE

Week 12: Cascading Style Sheet

251515 WEB PROGRAMMING ESSENTIALS



Our facility includes a weight t
with weights and improve you

- Dumbbells
- Kettle Bells
- Barbells

A demonstration of what can be accomplished through CSS-based design. Select any style sheet from the list to load it into this page.

Download the example HTML FILE and CSS FILE

Littering a dark and dreary road lay the past relics of browser-specific tags, ...ken CSS support, and abandoned browsers.

```
<!DOCTYPE html>
<!-- This website template was create
Name Student's Last Name -->
<html lang="en">
<head>
   <link rel="stylesheet" href="css/styles
   <title>Forward Fitness Club</title>
```

```
footer {
      font-size: .70em;
      text-align: center;
      margin-top: 20px;
}

.equip {
      float: left;
      padding-right: 20px;
}
```

Source: CSSZenGarden.com

Learning Outcomes

By the end of week 12, students should be able to;

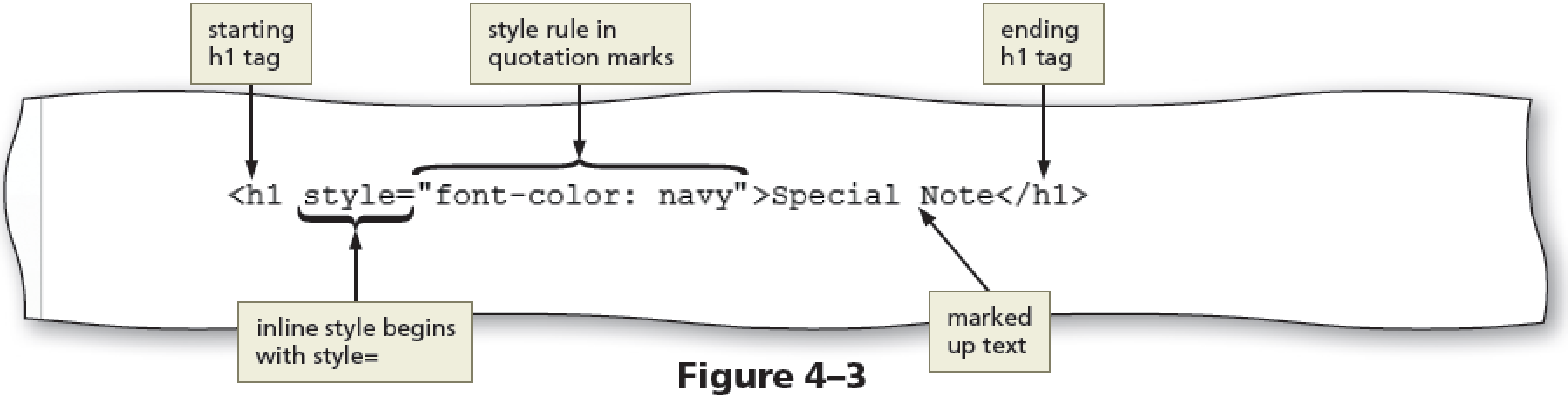
- Explain the importance of separating design from content
- Describe Cascading Style Sheets (CSS)
- Define inline, embedded, and external styles and their order of precedence
- Describe a CSS rule and its syntax
- Explain the difference between a selector, property, and value
- Create styles that use text and color properties
- Describe the CSS box model and how to apply margins, padding, and borders
- Create an external style sheet and link it to an HTML page
- Create styles that use list properties
- Add comments to an external style sheet
- Validate a CSS file

Using Cascading Style Sheets

- **Style** – It is a rule that defines the appearance of an element on a webpage
- **Style sheet** – It is the set of CSS style rules
- Style sheets provide a means to separate style from content because it gives the flexibility to redesign or rebrand a website
- A single CSS style sheet file containing the defined styles can be attached to several webpages to apply the styles to all the attached pages

Inline Styles

- **Inline style** – It is used to add a style to the start tag for an element, such as a heading or paragraph, using the **style attribute**



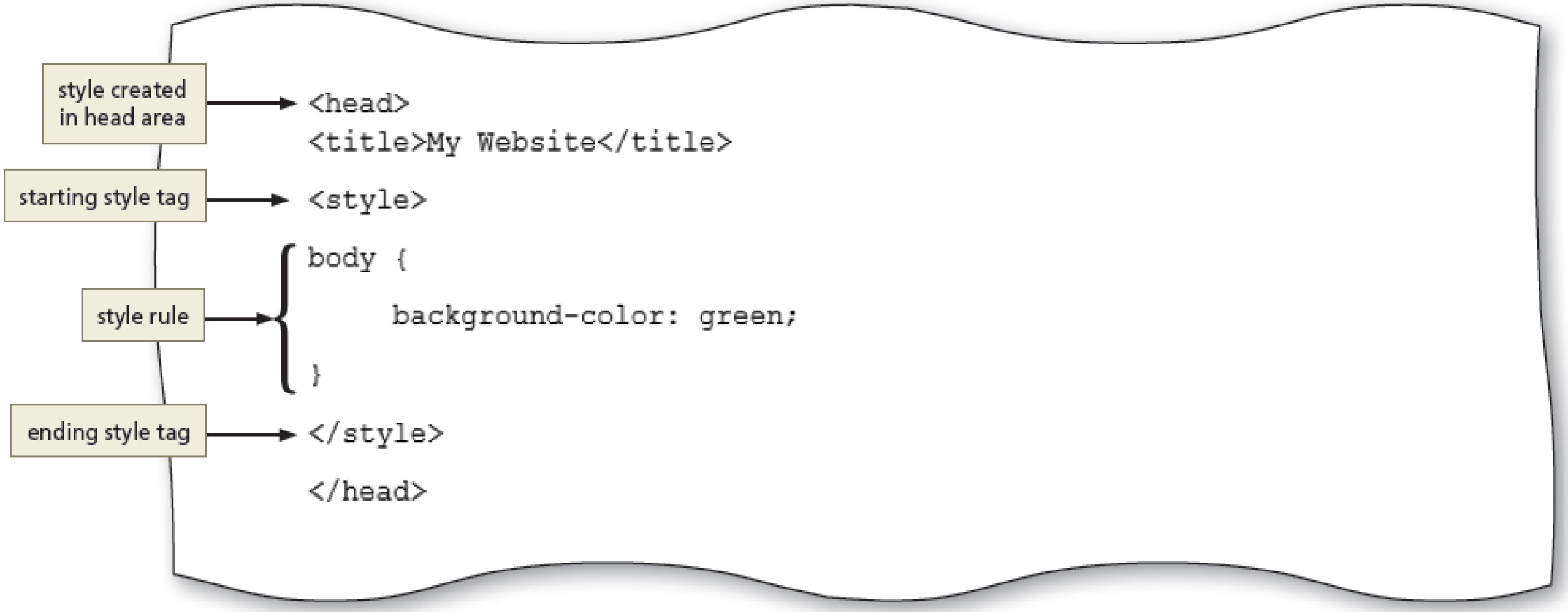
```
<h1 style="font-color: navy">Special Note</h1>
```

starting h1 tag
style rule in quotation marks
ending h1 tag
inline style begins with style=
marked up text

Figure 4–3

Embedded Style Sheets

- An **embedded style sheet**, also called an **internal style sheet**, includes the style sheet within the opening <head> and closing </head> tags of the HTML document.



style created in head area

starting style tag

style rule

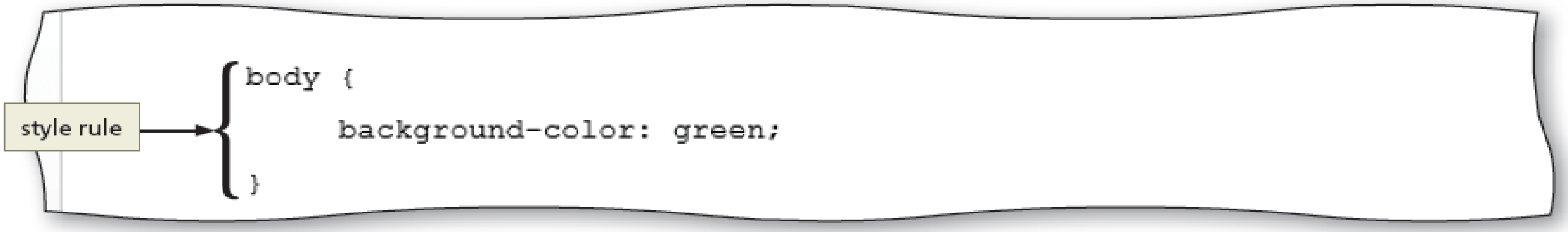
ending style tag

```
<head>
<title>My Website</title>
<style>
body {
     background-color: green;
}
</style>
</head>
```

Figure 4–4

External Style Sheets

- An **external style sheet** – It is a CSS file that contains all of the styles that can be applied to more than one page in a website
- **External style sheets** are also called **linked style sheets**
- An external style sheet is a text file with the **.css** extension
- To apply an external style sheet, link it (or attach it) to a webpage using a link in the head section of the webpage
- External style sheet provides flexibility to quickly change webpage formats because the styles used in it are applied to every page linked to it
- Changing the look of an entire website is sometimes called **reskinning** the website



```
body {
    background-color: green;
}
```

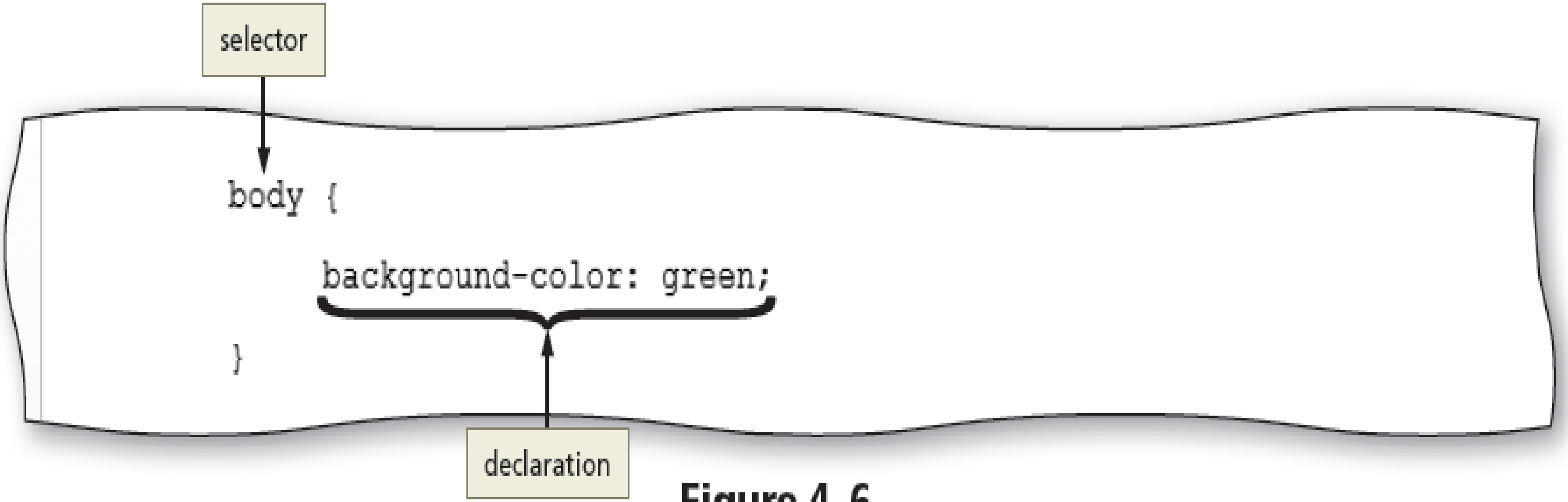
Figure 4–5

Style Sheet Precedence

- Style sheets are said to “cascade” because each type of style has a specified level of precedence (or priority) in relationship to the others
- CSS properties can be inherited from a parent element through a principle called **inheritance**
- If a selector has more than one CSS rule, **specificity** determines which CSS rule to apply

CSS Basics (1/3)

- Each CSS rule consists of a selector and a declaration



```
body {
     background-color: green;
}
```

Figure 4–6

CSS Basics (2/3)

- **Selector** – It is the part of the statement that identifies what to style
- Any HTML5 element such as body, header, nav, main, or footer may be a selector
- A selector may also be the value of an id or class attribute
- The **declaration** defines the exact formatting of the style
- A declaration consists of a property and a value, separated by a colon and followed by a semicolon
- The **property** identifies the style quality or characteristic to apply, such as
  - color (text color)
  - background-color
  - text-indent
  - border-width
  - font-style

CSS Basics (3/3)

- For each property, the declaration includes a related **value** that identifies the particular property value to apply

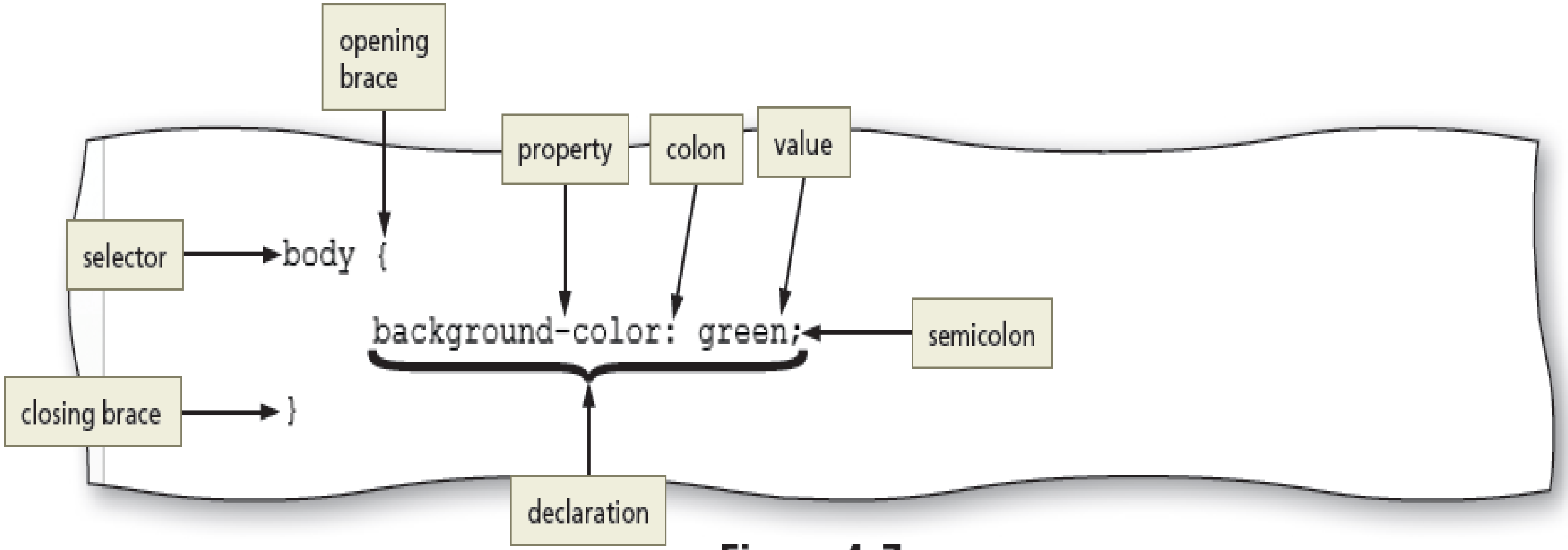


Figure 4–7

CSS Text Properties (1/2)

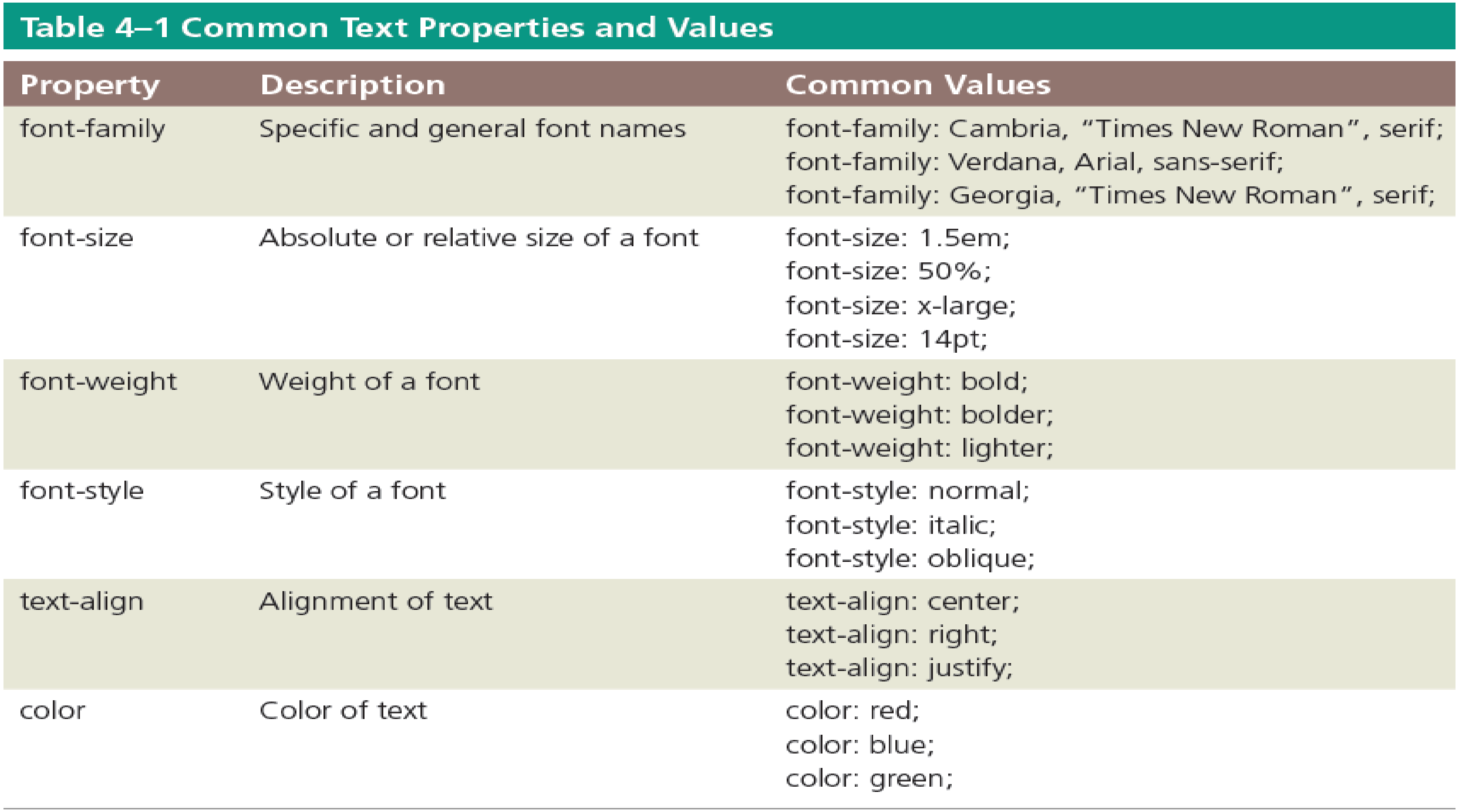


Table 4–1 Common Text Properties and Values

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 measures font sizes using many measurement units, including pixels, points, and ems, and by keyword or percentage

CSS Text Properties (2/2)

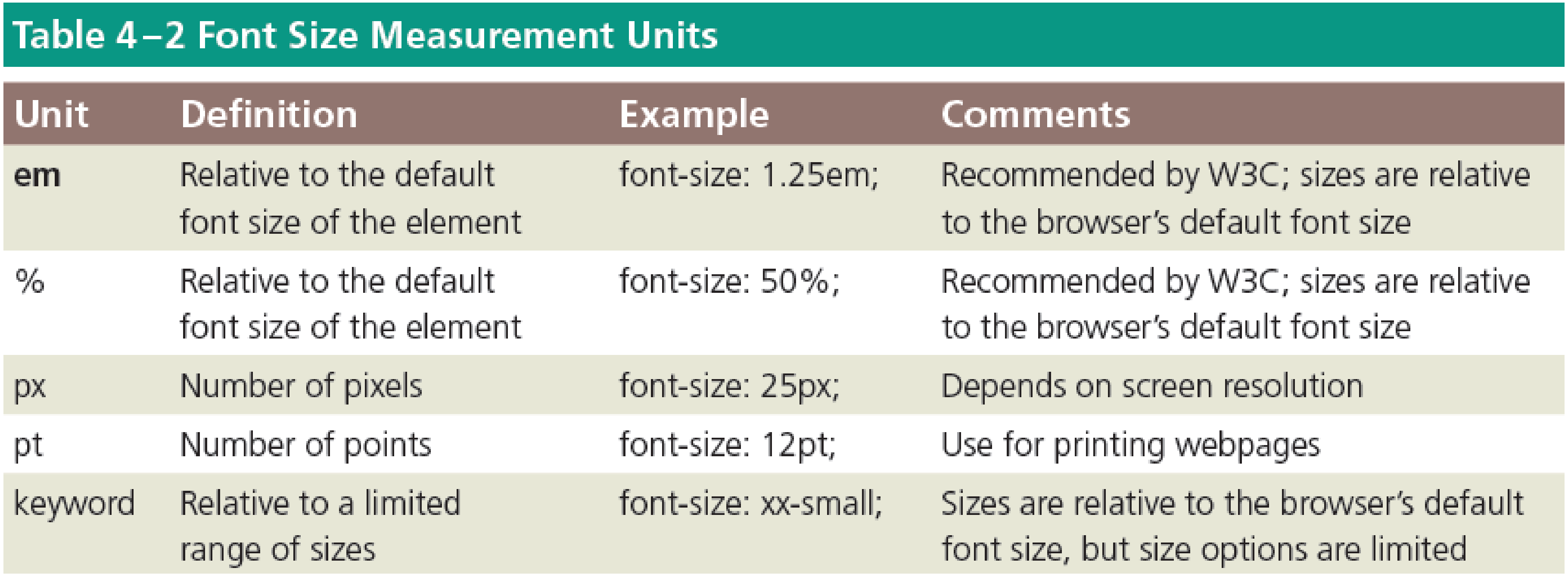


Table 4–2 Font Size Measurement Units

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 measures font sizes using many measurement units, including pixels, points, and ems, and by keyword or percentage

CSS Colors (1/2)

- HTML uses color names or codes to designate color values
- Two types of color codes can be used with CSS:
  - Hexadecimal
  - RGB
- **Hexadecimal** values consist of a six-digit number code that corresponds to **RGB (Red, Green, Blue)** color values

CSS Colors (2/2)

- To use a color in a style rule declaration, use the color value as the property value
- For example, to style a background color as gray use, `background-color: #808080;`

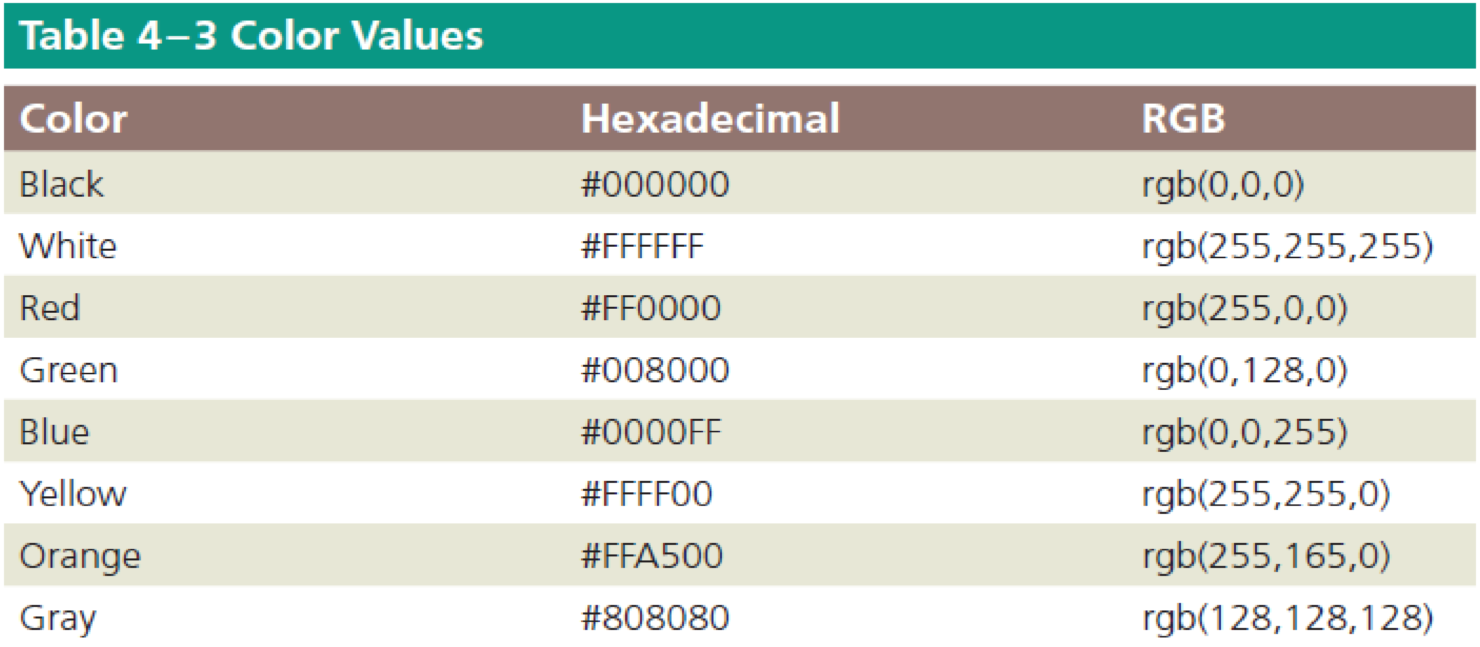


Table 4–3 Color Values

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)

Understanding Inline Elements and Block Elements

- HTML elements are positioned on the webpage as a block or as inline content
- 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

CSS Box Model (1/3)

- Each block element such as a header, nav, main, and footer element is displayed in a browser as a box with content
- The **CSS box model** describes content boxes on a webpage

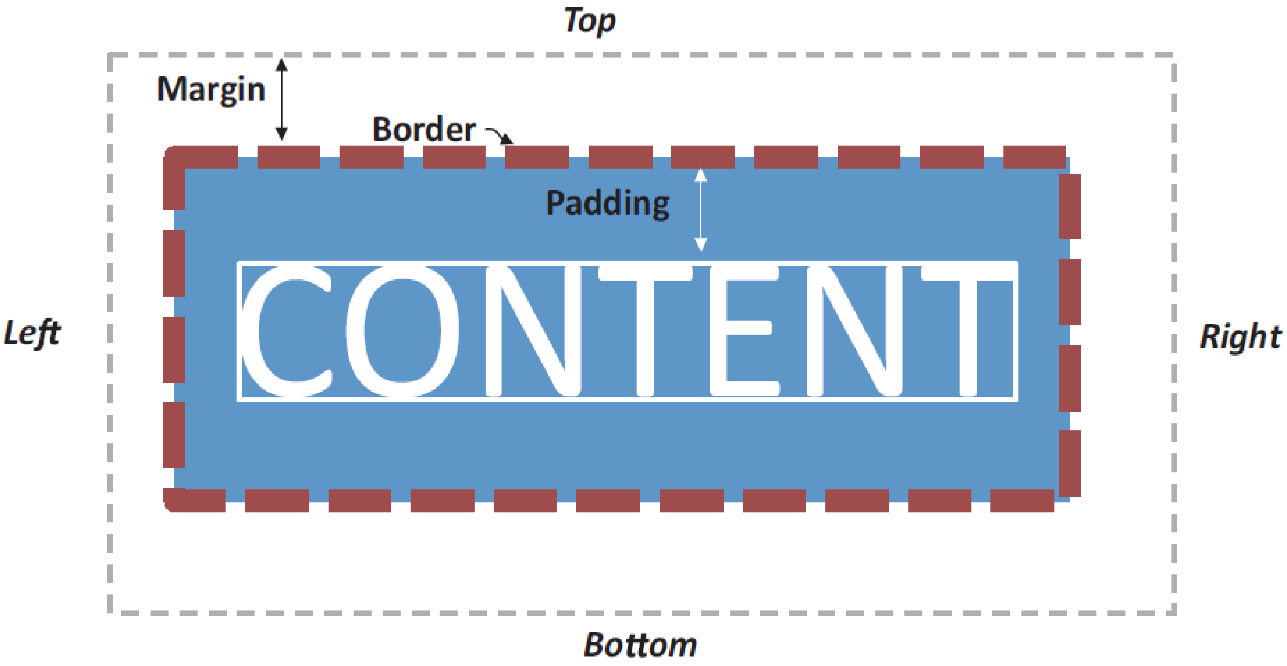


Figure 4–9

CSS Box Model (2/3)

- Each content box can have margins, borders, and padding
- The **margin** provides passive white space between block elements or between the top or bottom of a webpage
- The **border** separates the padding and the margin of the block element
- **Padding** is the passive white space between the content and the border of a block element

CSS Box Model (3/3)

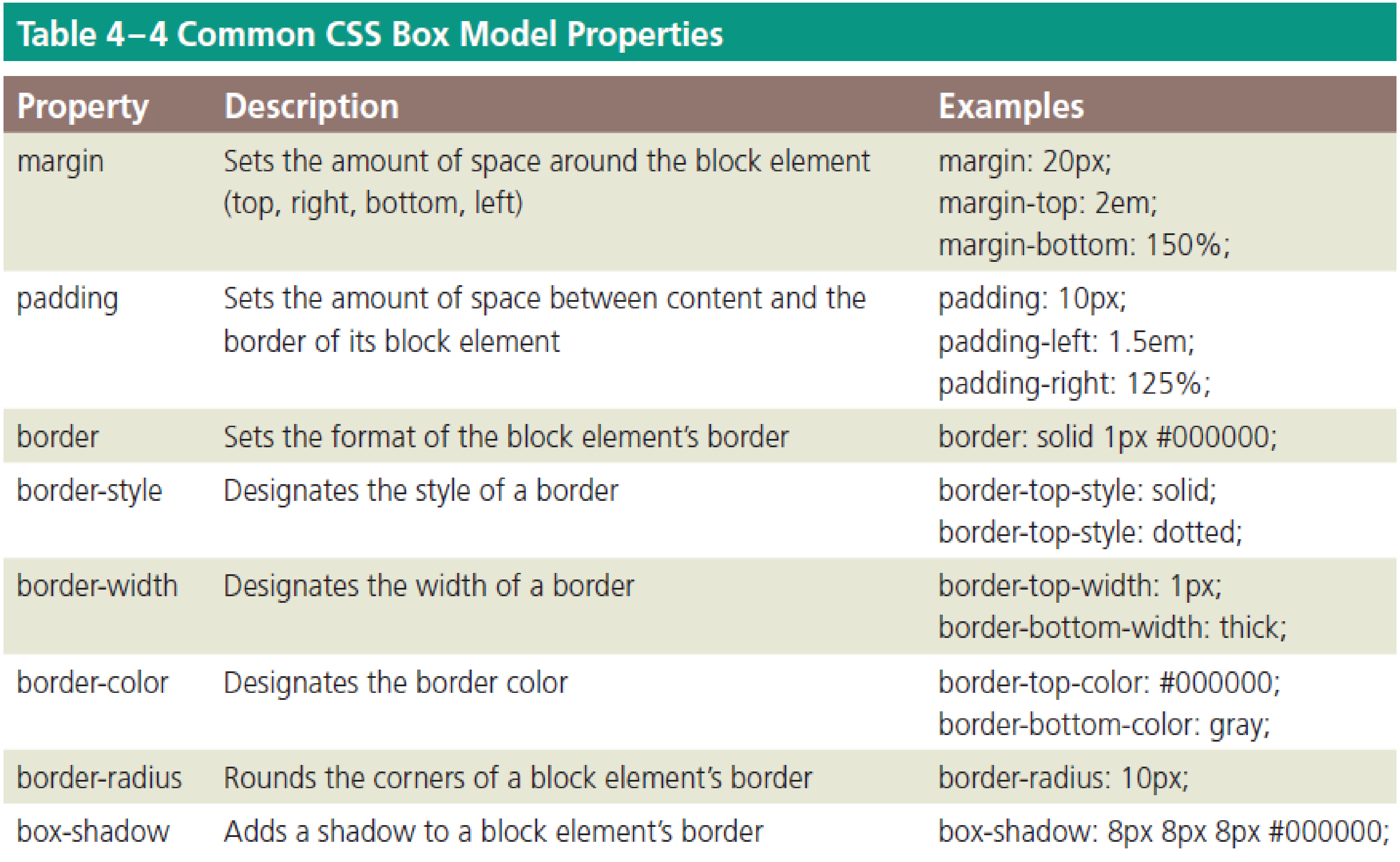


Table 4–4 Common CSS Box Model Properties

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;

Selectors

- A style rule begins with a selector, which specifies the element to style
- A selector can be
  - an HTML element name
  - an id attribute value
  - a class attribute value
- An **id** or a **class selector** is used to apply styles to p elements

Selectors (id selector)

- An **id selector** uses the id attribute value of an HTML element to select a single element
- For example, to style the **`div id="container"`** element, use **`#container`** as the selector

```
#container {
   border: solid 2px;
}
```

Selectors (class selector)

- A **class selector** is used to select elements that include a certain class attribute
- For example, to style class="mobile", use **`.mobile`** as the selector

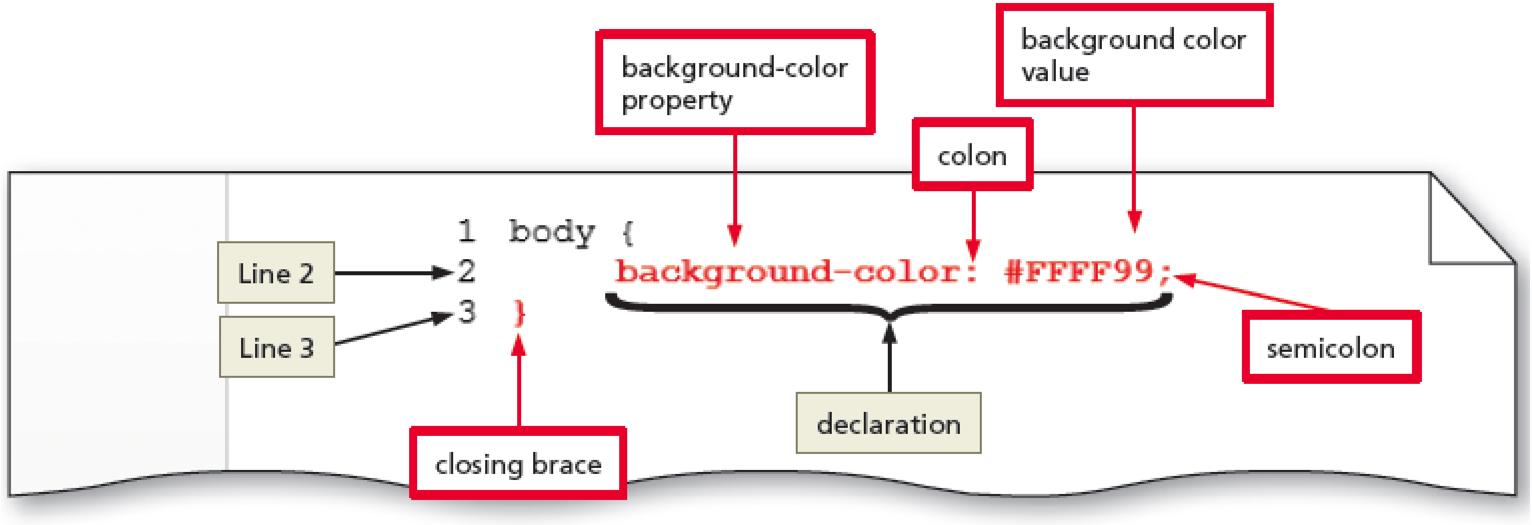
```
    .mobile {
       font-size: 10pt;
    }
```

Selectors (Descendant selector)

- A **descendant selector** is used to create style that applies to an element contained within another element
- For example, the following style rule sets the list-style property to none for list items in an unordered list included in the navigation area:

```
nav ul li {
   list-style: none;
}
```

To Create a CSS File and a Style Rule for the Body Element



```
1  body {
2      background-color: #FFFF99;
3  }
```

Figure 4–12

Linking an HTML Document to a CSS File (1/2)

- After creating a CSS file, link it to all the webpages that will use its styles
- Insert a `link` element on the HTML page within the <head> and </head> tags
- The `link` element uses two attributes:
  - `rel`
  - `href`
- The `rel` attribute uses the `stylesheet` value to indicate that the document is linked to a style sheet

Linking an HTML Document to a CSS File (2/2)

- The `href` attribute value specifies the file path or file name of the CSS file
- Following is an example of a link to a style sheet named styles.css and stored in the css folder:

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

The `type="text/css"` attribute and value is also commonly used within a `link` element to reference a CSS file

Aligning Webpage Content

- One way to align webpage content is to use the text-align property, which applies to block elements
- The text-align property can use left (the default), center, right, or justify as its value
- For example, the following rule centers an **`h1`** element:

```
h1 {
   text-align: center;
}
```

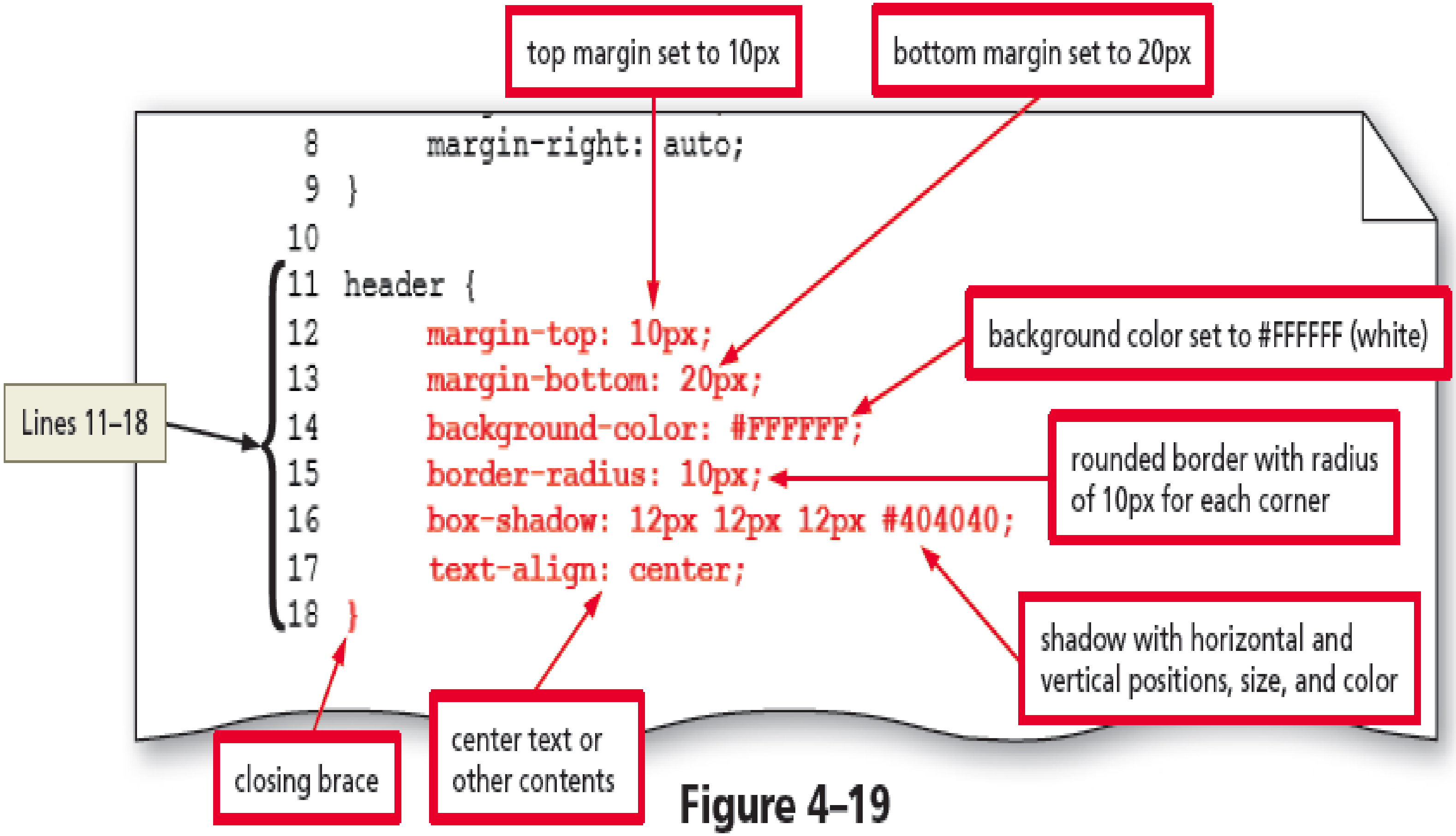
To Center Content

- 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

Creating Style Rules for Structural Elements

- The header section appears at the top of a webpage and thus needs formatting that makes the header contents stand out and attract visitors to the page
- The nav section should be formatted differently from the other structural elements as it should be prominent and easy to find on the webpage
- The main section should be formatted using the display property
- To apply text and box model properties to the main section and have them appear as intended, the **display property** is used
- Create a style rule that formats the footer section by defining the font size, text alignment, and top margin of the **footer** element

To Create a Style Rule for the Header Element



```
 8       margin-right: auto;
 9  }
10
11  header {
12       margin-top: 10px;
13       margin-bottom: 20px;
14       background-color: #FFFFFF;
15       border-radius: 10px;
16       box-shadow: 12px 12px 12px #404040;
17       text-align: center;
18  }
```

top margin set to 10px

bottom margin set to 20px

background color set to #FFFFFF (white)

Lines 11–18

rounded border with radius of 10px for each corner

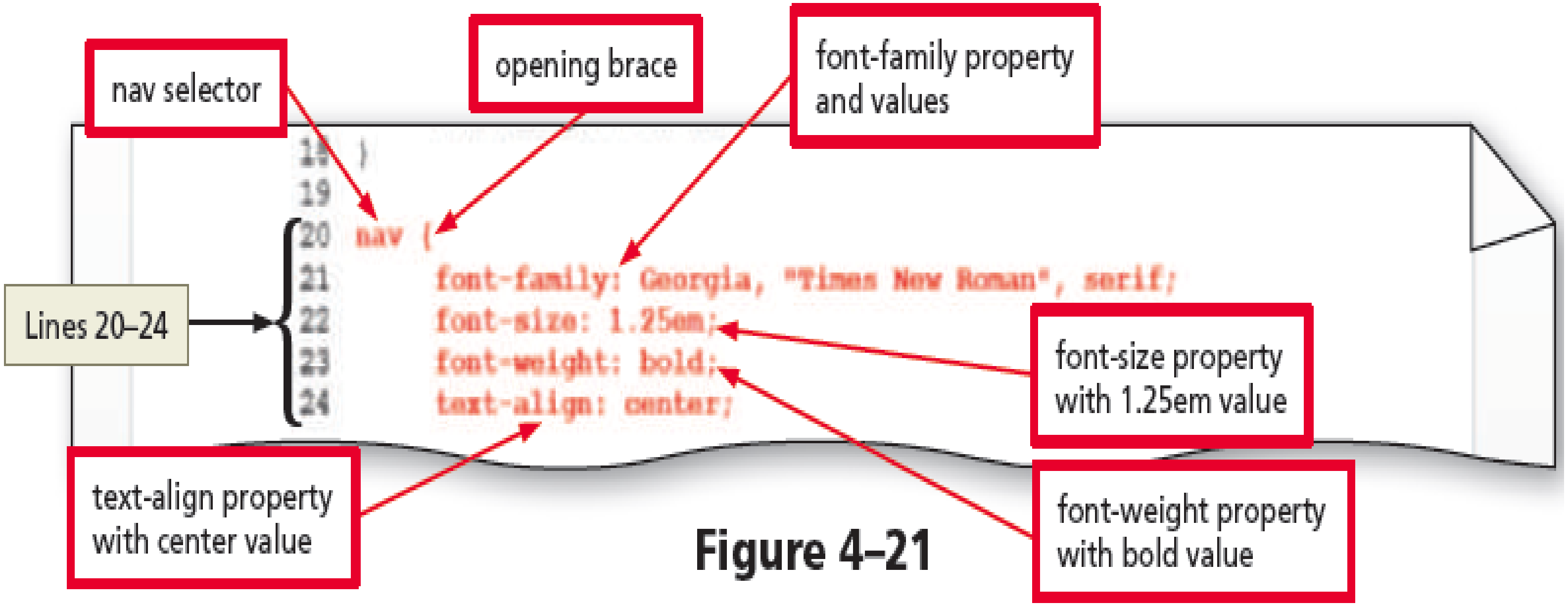
shadow with horizontal and vertical positions, size, and color

closing brace

center text or other contents

Figure 4–19

To Create a Style Rule for the Nav Element

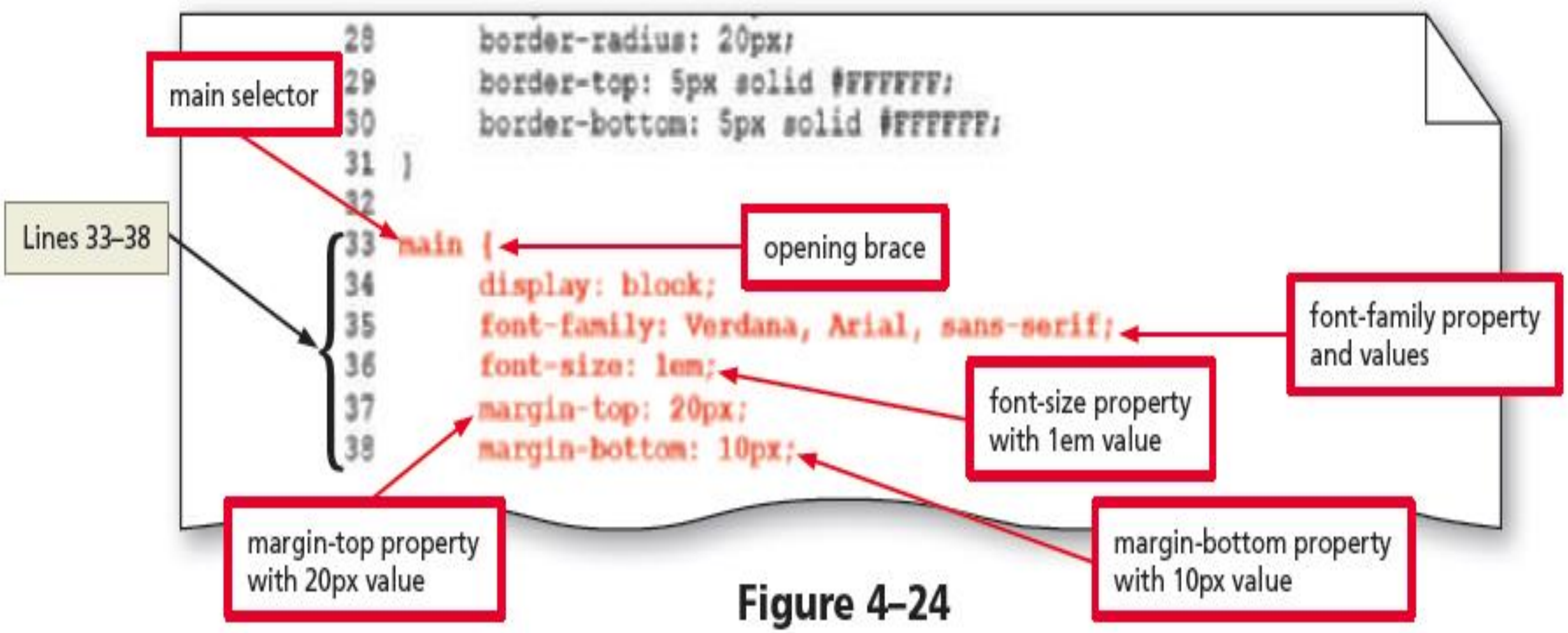


```
18  }
19
20  nav {
21      font-family: Georgia, "Times New Roman", serif;
22      font-size: 1.25em;
23      font-weight: bold;
24      text-align: center;
```

nav selector
opening brace
font-family property and values
Lines 20–24
font-size property with 1.25em value
font-weight property with bold value
text-align property with center value

Figure 4–21

To Create a Style Rule for the Main Element



```
28        border-radius: 20px;
29        border-top: 5px solid #FFFFFF;
30        border-bottom: 5px solid #FFFFFF;
31  }
32
33  main {
34        display: block;
35        font-family: Verdana, Arial, sans-serif;
36        font-size: 1em;
37        margin-top: 20px;
38        margin-bottom: 10px;
```

main selector

Lines 33–38

opening brace

font-family property and values

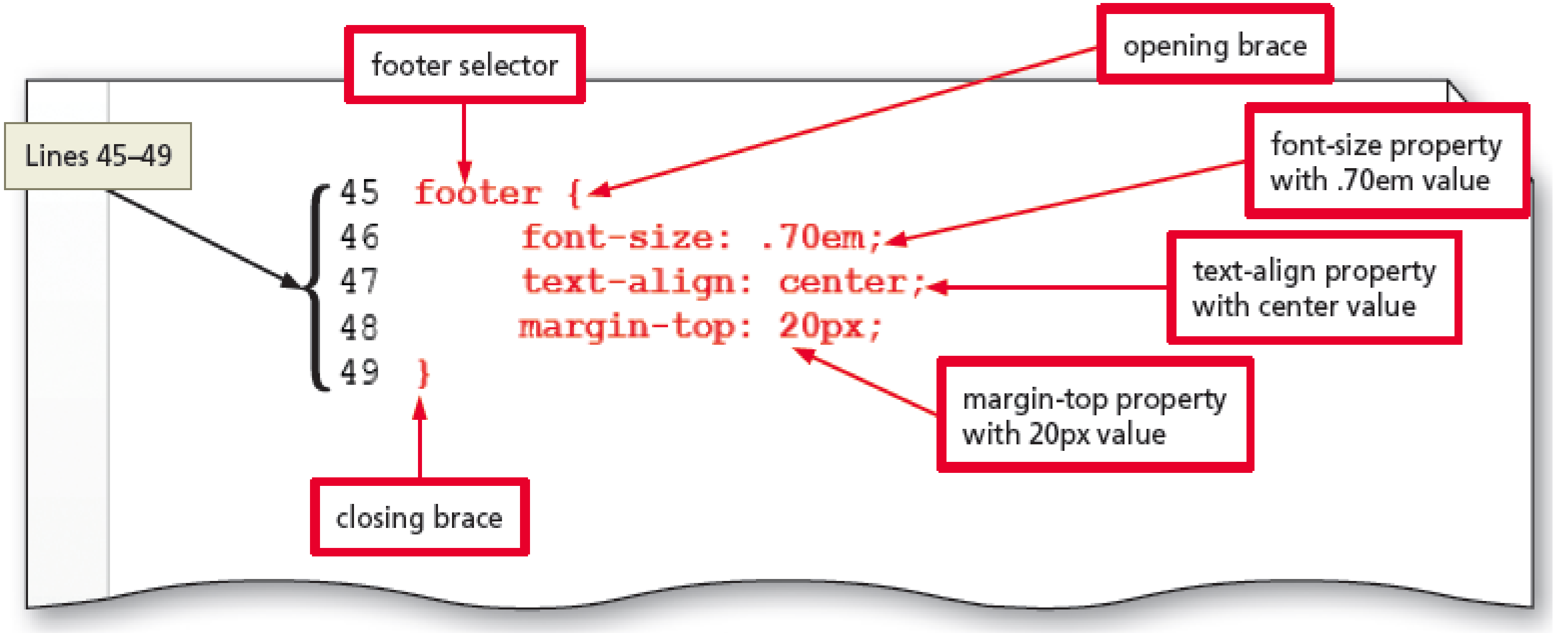
font-size property with 1em value

margin-top property with 20px value

margin-bottom property with 10px value

Figure 4–24

To Create a Style Rule for the Footer Element



```
45  footer {
46        font-size: .70em;
47        text-align: center;
48        margin-top: 20px;
49  }
```

footer selector
opening brace
Lines 45–49
font-size property with .70em value
text-align property with center value
margin-top property with 20px value
closing brace

Figure 4–27

Creating Style Rules for Classes (1/2)

- Consider the following example:

```
<img class="equip"
src="images/equipment1.jpg"
alt="Weight Equipment" height="195"
width="260">
```

  - The `img` element displays the equipment1.jpg image
  - The first attribute and value, `class="equip"`, assigns this element to the equip class
  - Including the `class="equip"` attribute and value in each `img` element helps format all the elements assigned to the equip class with a single style rule

Creating Style Rules for Classes (2/2)

- For example, the following style rule adds 20 pixels of padding to the right side of elements in the `equip` class:

```
.equip {
  padding-right: 20px;
}
```

- To indicate a class name as a selector, include a period (.) before the class name
- **Float property** – It positions an element to the right or left of other elements
- **Clear property** – It removes the float effect from a webpage

Using CSS List Properties (1/2)

- The CSS **list-style properties** are used to control the appearance of numbered and bulleted lists
- Lists marked with the <ul> and </ul> tags display a solid bullet before each list item
- Lists marked with the <ol> and </ol> tags display Arabic numerals (1, 2, 3, and so on) before the list items
- For example,

```
ul {
   list-style-type: square;
}
```

Using CSS List Properties (2/2)

- Using `inside` as the value displays the bullet or number inside the list's content block, as in the following text:

  - Morbi odio nisl, facilisis non egestas a, tristique vitae neque.
  - Lorem ipsum dolor sit amet, consectetur adipiscing elit.

- The default value for the list-style-position property is outside, which displays the list item with a bullet or number `outside` of the list's content block as in the following text:

  1. Lorem ipsum dolor sit amet, consectetur adipiscing elit.

Adding Comments to CSS Files

- Comments provide additional information about the area where the styles are applied or other helpful explanations, such as what the styles do
- The syntax for a comment is as follows:

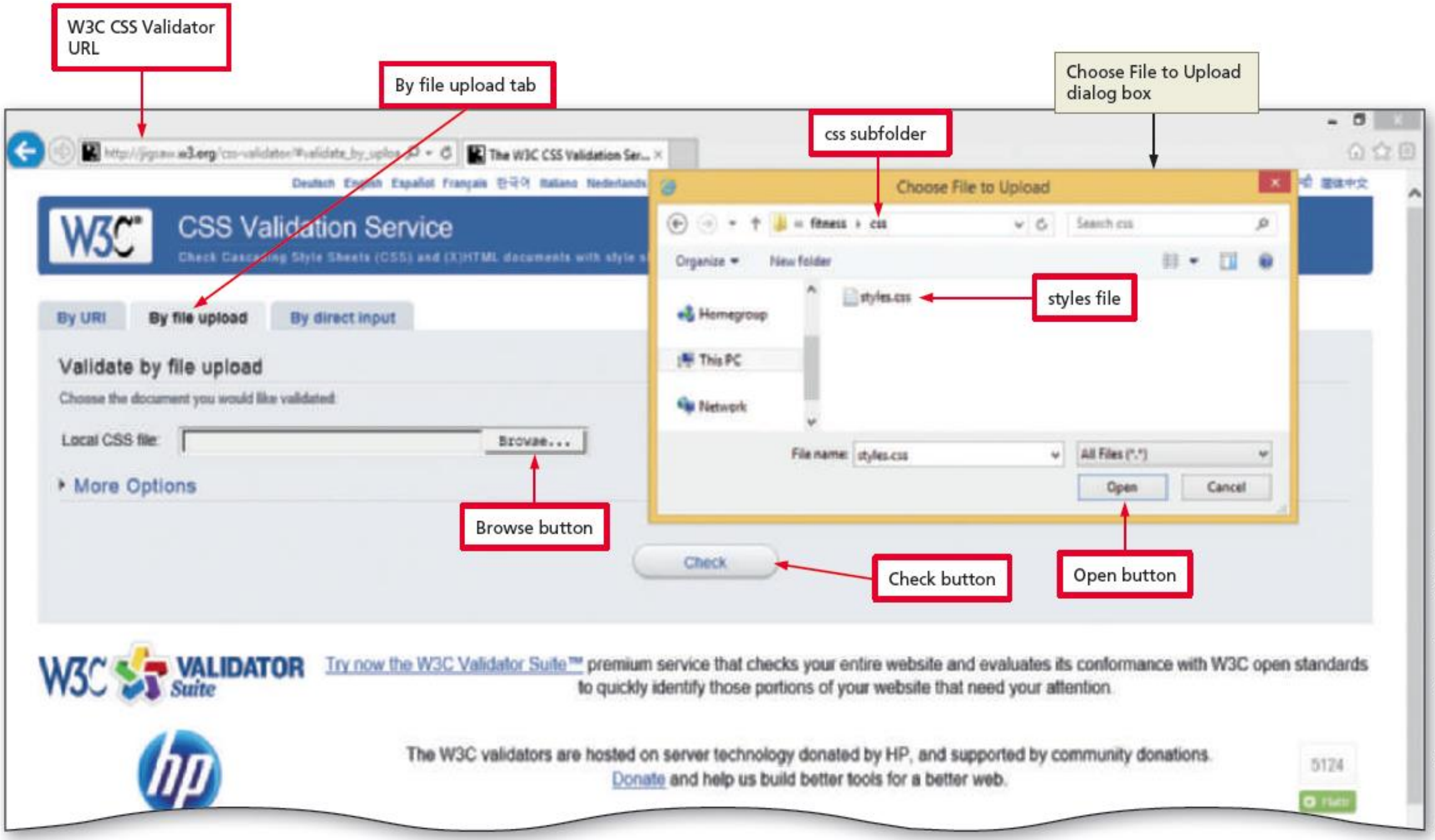
```
/* Place your comment here */
```

To Validate the CSS File (1/3)

The following steps validate a CSS file

- Open the browser and type `http://jigsaw.w3.org/css-validator/` in the address bar to display the W3C CSS Validation Service page
- Tap or click the By file upload tab to display the Validate by file upload information
- Tap or click the Browse button to display the Choose File to Upload dialog box
- Navigate to your css folder to find the styles.css file (Figure 4–41)

To Validate the CSS File (2/3)



Validate by file upload

Choose the document you would like validated:

Local CSS file: Browse...

More Options

File name: styles.css

All Files (*.*)

Try now the W3C Validator Suite™ premium service that checks your entire website and evaluates its conformance with W3C open standards to quickly identify those portions of your website that need your attention.

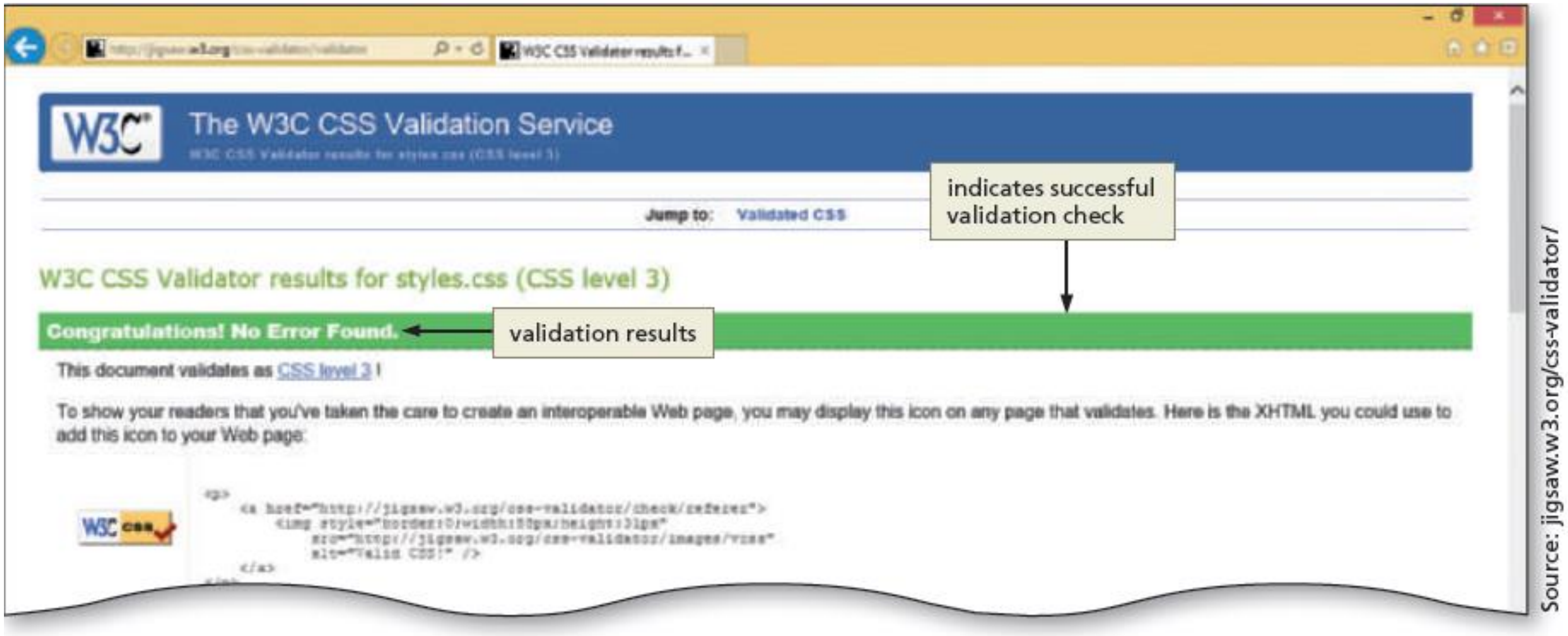
The W3C validators are hosted on server technology donated by HP, and supported by community donations. Donate and help us build better tools for a better web.

Source: jigsaw.w3.org/css-validator/

Figure 4–41

To Validate the CSS File (3/3)

- Tap or click the styles.css document to select it
- Tap or click the Open button to upload the selected file to the W3C CSS validator
- Tap or click the Check button to send the document through the validator and display the validation results page (Figure 4–42)



The W3C CSS Validation Service

W3C CSS Validator results for styles.css (CSS level 3)

Jump to: Validated CSS

W3C CSS Validator results for styles.css (CSS level 3)

Congratulations! No Error Found.

This document validates as CSS level 3 !

To show your readers that you've taken the care to create an interoperable Web page, you may display this icon on any page that validates. Here is the XHTML you could use to add this icon to your Web page:

```
<p>
    <a href="http://jigsaw.w3.org/css-validator/check/referer">
        <img style="border:0;width:88px;height:31px"
            src="http://jigsaw.w3.org/css-validator/images/vcss"
            alt="Valid CSS!" />
    </a>
```

indicates successful validation check

validation results

Source: jigsaw.w3.org/css-validator/

Figure 4–42