

CP1406 – Week 4

Designing Webpages with CSS



Introduction

- Creating a well-designed website that captures your audience's attention is vital in attracting and obtaining new customers
- Web developers can use formatting such as font styles, font colours, white space, and background colours or images to increase the visual appeal of the webpages

Introduction

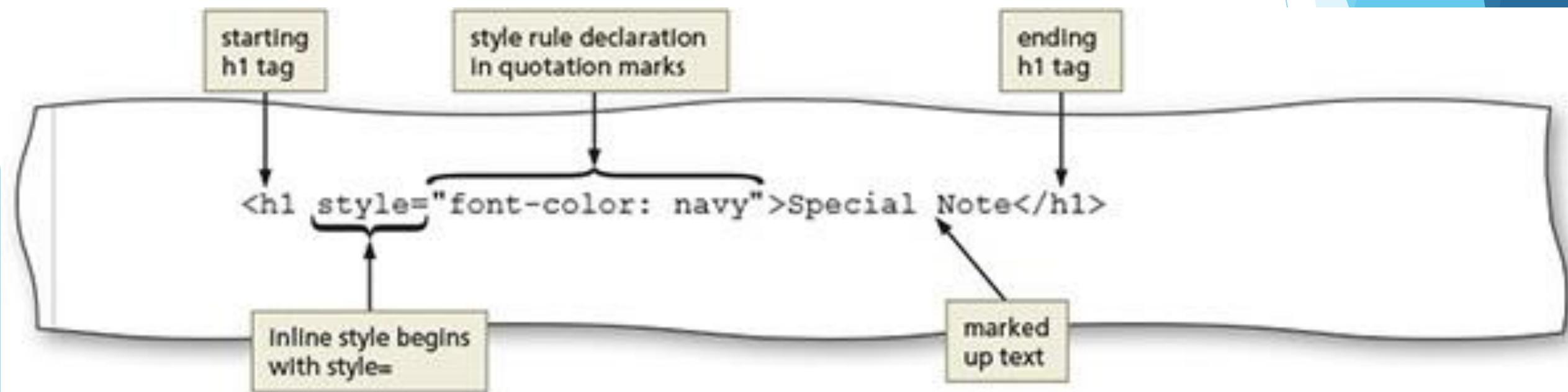
- Cascading Style Sheets (CSS): language used to describe formatting of a document written in a markup language such as HTML
- Remember separation of form and function?
 - Content & Structure = **HTML**
 - Style = **CSS**

Using Cascading Style Sheets

- Style rules define the appearance of an element on a webpage
- Style sheets are the set of CSS style rules
 - Provides a means to separate style from content because it gives the flexibility to redesign or rebrand a website – this is especially important when maintaining a large website

Inline Styles

- You can embed CSS directly in an HTML element to restyle that element using the **style** attribute



Internal/Embedded Style Sheets

- You can embed style rules in the <head> of an HTML document, which apply to the current page



External Style Sheets

- You can write CSS rules in a separate file.
These styles can be applied to multiple pages in a website
- Also called a linked style sheet
- Text file with the .css extension

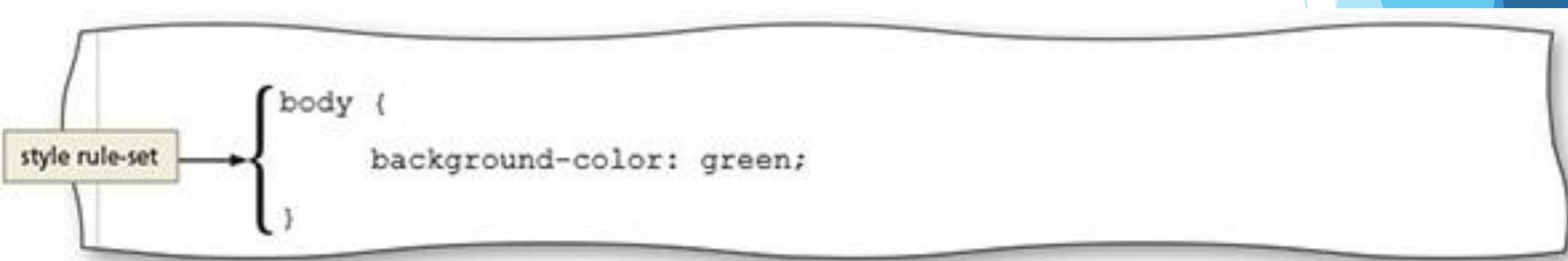
Linking an HTML Document to a CSS File

- After creating a CSS file, link it to all the webpages that will use its styles
 - Use a link element within the <head> section
- Link element uses two attributes
 - The **rel** attribute uses the **stylesheet** value to indicate the document is linked to a style sheet
 - The **href** attribute value specifies the file path or file name of the CSS file
- Example: link to a style sheet named **styles.css** in the current folder:

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

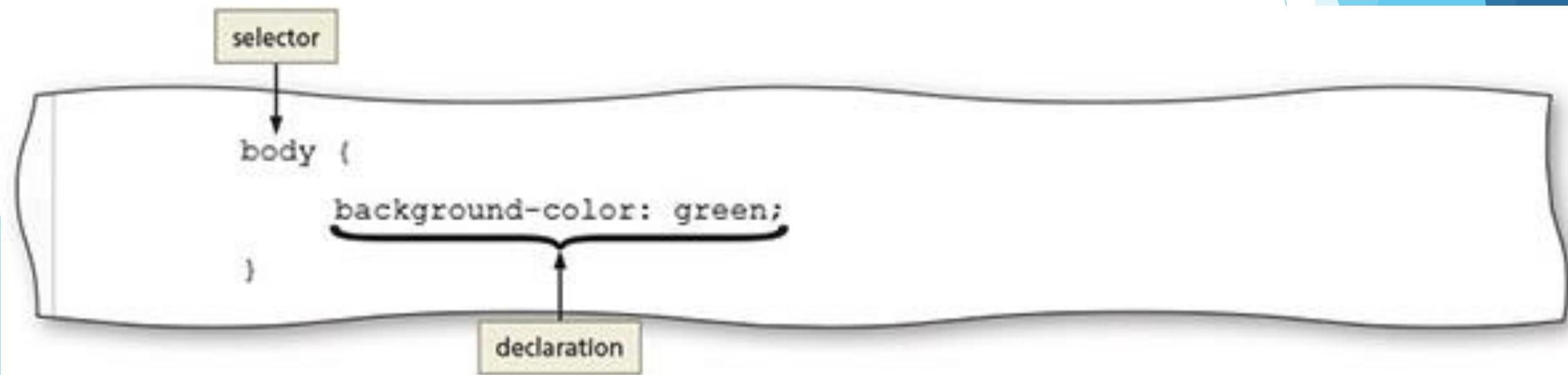
External Style Sheets

- Provide 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



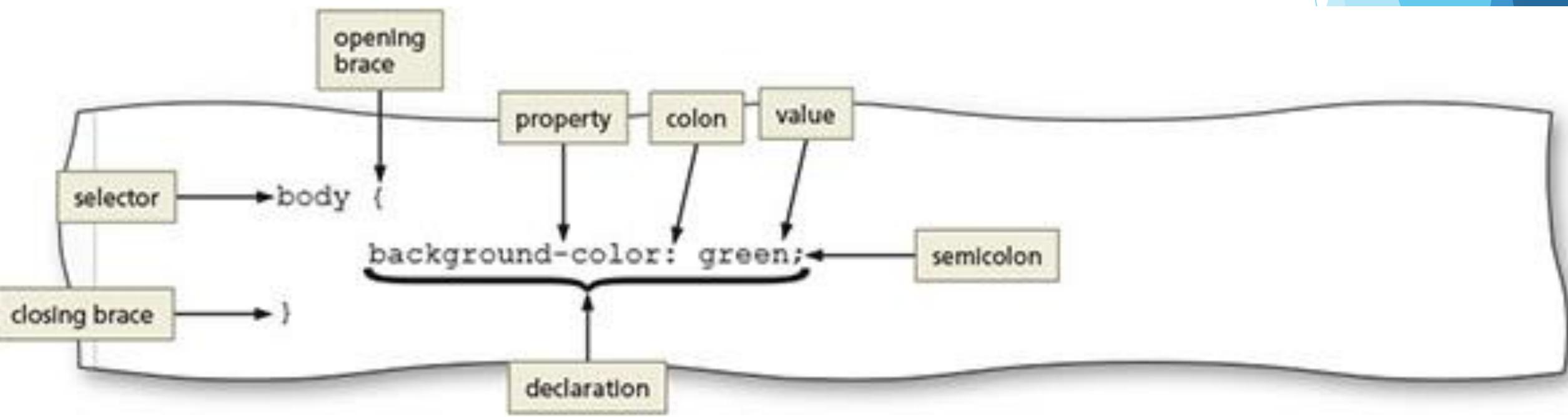
CSS Basics

- Each CSS **rule** consists of a **selector** and a **declaration**



CSS Basics - Declaration

- Declaration defines the exact formatting of the style
- The **property** is the attribute to change (colour, width, font...) ,
- The **value** is the value to set that property to (red, 100%, Arial...)



Selectors

- Selector: part of the statement that identifies (selects) what to style
 - An HTML element name (body, nav, div, p, h1...)
 - An id attribute value (unique)
 - A class attribute value (reusable)
- An id selector uses the id attribute value of an HTML element to select a single element
- A class selector selects elements that include that class attribute to select one or more elements

Selecting, 3 ways

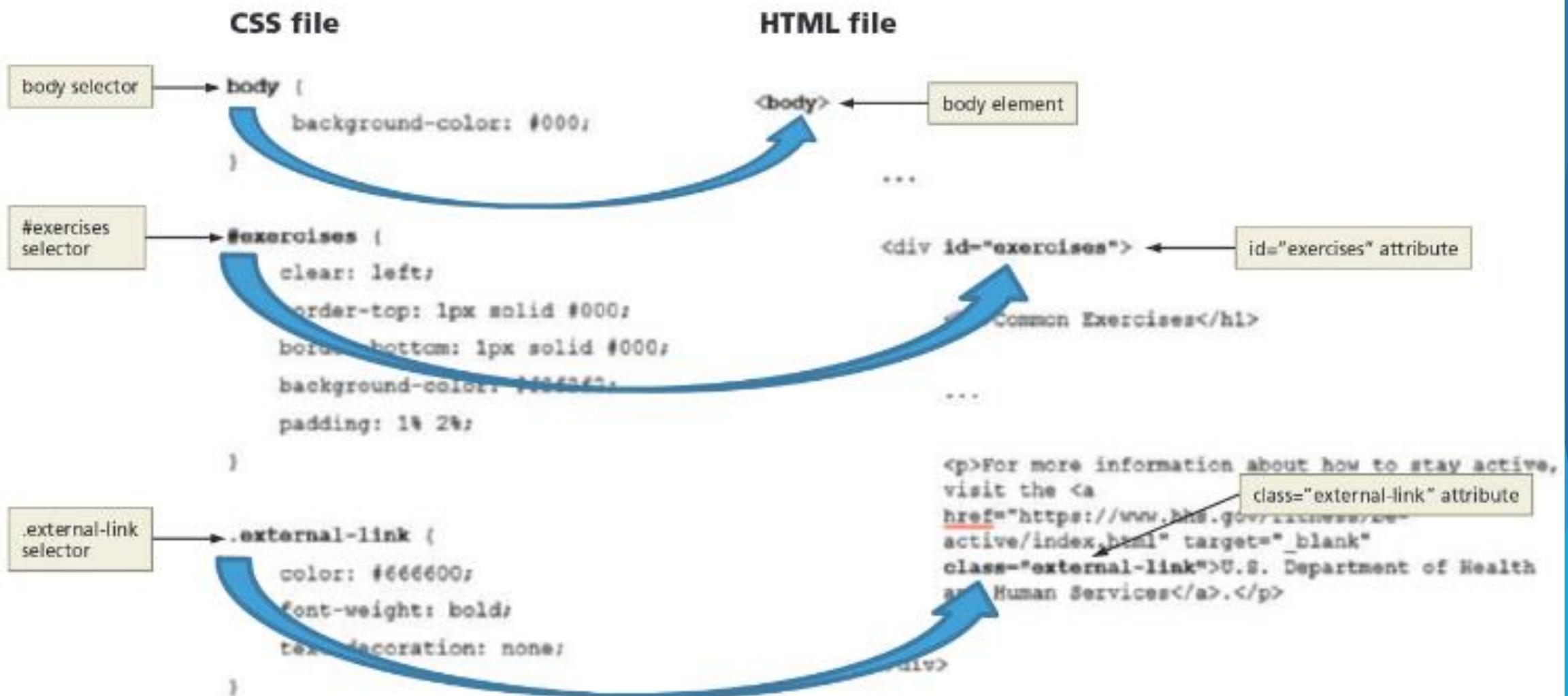
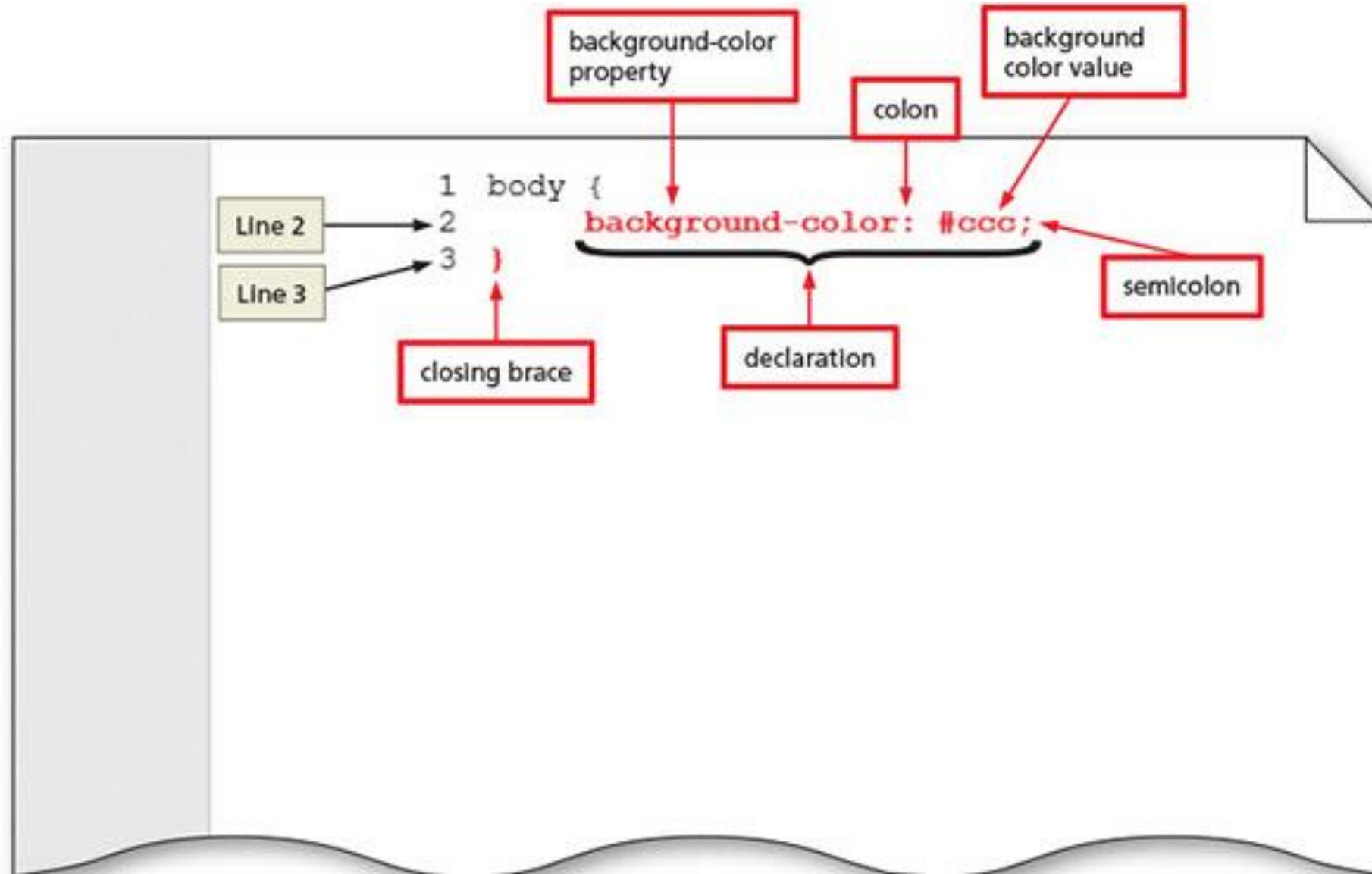


Figure 4-10

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



Use descendant selectors to be more specific

- A descendant selector is used to create a style that applies to an element contained within another element
- Example:

```
header h1 { color: red }
```

This selects only h1 elements that are inside the header element

```
<header>
<h1>Heading here selected</h1>
</header>
<h1>This heading NOT selected</h1>
```

CSS Basics - Property

- The property identifies the style attribute or characteristic to apply
 - color (text colour)
 - background-color
 - text-indent
 - border-width
 - font-style
 - ...
- Notice that "color" is American spelling

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 Text Properties

- Use CSS styles to format text in a variety of ways
- Fallback values can be provided for the font-family property in case the browser does not support the primary font
- There are a variety of CSS measurement units possible, including pixels, points, and ems, keyword and percentage

CSS Text Properties

| 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 |

Table 4–2 Font Size Measurement Units

CSS Colours

- HTML uses colour names or codes to designate colour values
- Three types of colour codes can be used with CSS
 - Hexadecimal values consist of a six-digit (or 3) number code that corresponds to RGB (Red, Green, Blue) colour values
 - RGB (Red, Green, Blue) colour values
 - HSL (hue, saturation, lightness) colour values

CSS Colours

- You can set foreground, background and other colours depending on the property chosen
 - For example, to style a background colour as grey use:
background-color: #808080 (or the keyword gray)

```
<style>
body {
    background-color: #808080;
}
</style>
```

```
<style>
body {
    background-color: gray;
}
</style>
```

CSS Colours - Examples

| colour | Hexadecimal | RGB | HSL |
|--------|-------------|------------------|---------------------|
| Black | #000000 | rgb(0,0,0) | hsl(0, 0%, 0%) |
| White | #ffffff | rgb(255,255,255) | hsl(0, 0%, 100%) |
| Red | #ff0000 | rgb(255,0,0) | hsl(0, 100%, 50%) |
| Green | #008000 | rgb(0,128,0) | hsl(120, 100%, 25%) |
| Blue | #0000ff | rgb(0,0,255) | hsl(240, 100%, 50%) |
| Yellow | #ffff00 | rgb(255,255,0) | hsl(60, 100%, 50%) |
| Orange | #ffa500 | rgb(255,165,0) | hsl(39, 100%, 50%) |
| Grey | #808080 | rgb(128,128,128) | hsl(0, 0%, 50%) |

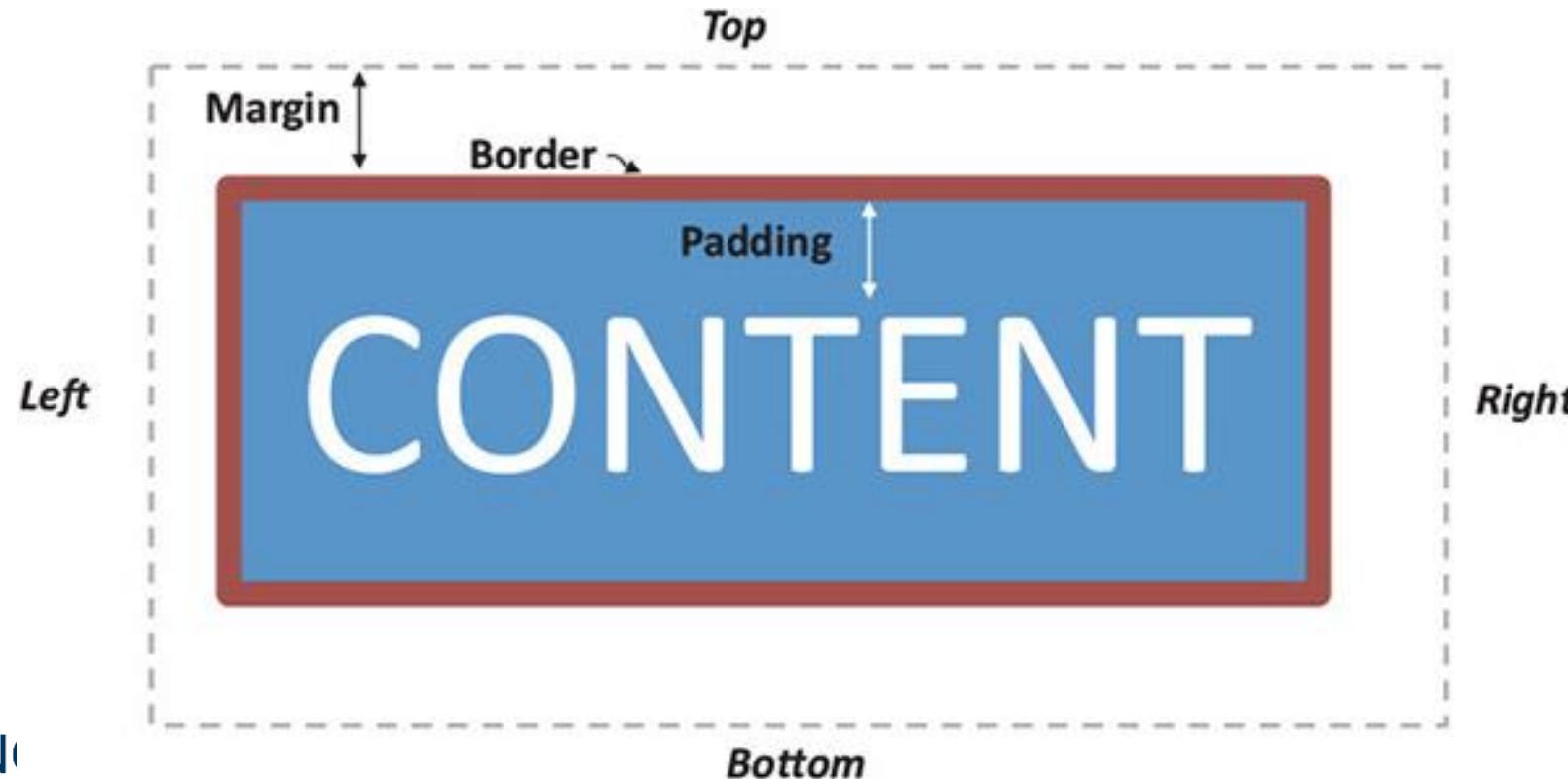
Table 4–3 colour Values

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 (like words in text)
 - Inline content always appears within block elements

CSS Box Model

- Each block element such as a header, nav, main, div... is displayed in the browser as a box with content
 - The CSS box model describes content boxes



CSS Box Model

- Each content box can have margins, borders, and padding
 - Margin provides passive white space between block elements (including between the top or bottom of a page)
 - Border separates the padding and the margin of the block element (line around box)
 - Padding is the passive white space between the content and the border of a block element

Creating a Webpage Layout

- To design a webpage to look the way you want, you cannot use HTML alone
 - Use CSS to design a webpage layout
- **float property** allows you to position an element to the right or left of other elements, while remaining within its parent element
 - Valid values: left, right, inherit, and none
- **clear property** is used to remove the float effect
 - Valid values: right, left, and both

Aligning Webpage Content

- One way to align webpage content is to use the `text-align` property
 - Applies to block elements
 - Can use left (the default), center, right, or justify as its value
- The following rule centers the text of an `h1` element:

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

Aligning Webpage Content

- To centre all the elements of a webpage using a single style rule, set the left and right margins to auto
 - Set the width to less than 100% (e.g., 80%)
 - This leaves the rest (e.g., 20%) of the page for margins

```
container {  
    width: 80%;  
    margin: 0 auto;  
}
```

Creating Style Rules for Structural Elements

- header section should appear at the top of a page
 - You usually want this to stand out and attract visitors to the page
- nav section should be formatted differently from the other structural elements
 - Should be prominent and easy to find on the webpage

Creating Style Rules for Structural Elements

- Each page contains different content within the main element
- Must create various style rules to style the content for each page

Creating Style Rules for Structural Elements

- You can use an HTML list for navigation links
 - To make the navigation links more appealing on the webpage, you can format them with CSS
- CSS list properties
 - Used to control the appearance of numbered and bulleted lists

Creating Style Rules for id Selectors

- Example: style rule for an id attribute value of contact:

```
#contact {  
    text-align: center;  
}
```

- The above style rule will center-align text within an element that has the id attribute value of contact

```
<div id="contact">
```

Creating Style Rules for class Selectors

- Example: style rule for a class attribute value of contact:

```
.contact {  
    text-align: center;  
}
```

- The above style rule will center-align text within an element that has the class attribute value of contact

```
<div class="contact">
```

- A class attribute name can be applied to more than one HTML element on a webpage

Creating Style Rules for id Selectors

CSS styles are applied to Contact Us page

The screenshot shows a website for "Forward Fitness Club". At the top, there's a navigation bar with links for Home, About Us, Classes, Nutrition, and Contact Us. Below the navigation is a logo for "FITNESS CLUB" with a kettlebell icon. The main content area features a heading "Ready to get started? Contact us today.", followed by a phone number "Call us: (814) 555-9608", an email link "Email us: forwardfitness@club.net", and an address "Visit us at: 1275 Channel Center Street, Boston, MA 02210". Below the address is a map showing the location. A callout box points to the email link with the text "email link is formatted". Another callout box points to the center of the page content with the text "content is center aligned".

content is center aligned

Ready to get started? Contact us today.

Call us: (814) 555-9608

Email us: forwardfitness@club.net

Visit us at: 1275 Channel Center Street, Boston, MA 02210

Directions Save

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What if we want to apply a style to something that is not an HTML element?

```
<p>This text is my favourite thing</p>
```

- We can rewrite the code to use a logical element, if there is one that makes sense:

```
<p>This text is my <em>favourite</em> thing</p>
```

- You can use the **** element to group inline elements together on a webpage and apply CSS to this

```
<p>This text is my <span class="favourite">favourite</span> thing</p>
```

CSS Reset

- A CSS reset is a style rule that is applied to the webpage before any other style rule defined within the style sheet
- Example of a CSS reset:

```
body, header, nav, footer {  
    margin: 0;  
    padding: 0;  
    border: 0;  
}
```

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 */`

```
<style>
/* This is a single-line comment */
p {
    color: red;
}
```

https://www.w3schools.com/css/tryit.asp?filename=trycss_comments

Validating CSS Files

- You can validate CSS code to verify it follows the established rules for CSS (not that it does what you intended!)
- Many online validation services are used to assure that CSS code follows standards
- Validation should always be a part of web development testing

Validating CSS Files

The screenshot illustrates the W3C CSS Validation Service interface. A red box labeled "By file upload tab" points to the "By file upload" tab in the top navigation bar. Another red box labeled "Open dialog box" points to the "Open" dialog box that appears when the "Choose File" button is clicked. Within the dialog box, a red box labeled "css subfolder" points to the folder path "css". Inside the folder, a red box labeled "styles.css" points to the file being selected. A red box labeled "Check button" points to the "CHECK" button at the bottom of the dialog box. A red box labeled "Open button" points to the "Open" button at the bottom right of the dialog box. The main page also features a "Choose File" button with a red box around it, and a "Check" button with a red box around it.

By file upload tab

Open dialog box

css subfolder

styles.css

Check button

Open button

By file upload tab

By UR: By file upload By direct input

CSS Validation Service

Validate by file upload

Choose the document you would like validated.

Local CSS file: Choose File To file chosen

More Options

Choose File button

Interested in "developing" your developer skills? In W3Cx's hands-on Professional Certificate Program, learn how to code the right way by creating Web sites and apps that use the latest Web standards. [Find out more!](#)

Source: <https://www.w3.org/css-validation/>

Chapter Summary

- In this chapter, you learned how to:
 - Create a CSS file with rules to style HTML elements on a webpage
 - Link the CSS file to all the webpages of a website