

4.1 Using CSS in HTML

Introduction to CSS

CSS (Cascading Style Sheets) is a textual language for describing how a webpage is styled for visual presentation. Web browsers use CSS to determine how a webpage is rendered on the screen, printed to paper, or presented via other media. The CSS acronym highlights the two main characteristics of presenting a webpage:

PARTICIPATION ACTIVITY

4.1.1: Understanding the CSS acronym.



If unable to drag and drop, refresh the page.

Cascading

The process of combining multiple style rules and resolving conflicting styles.

The applied style rules cascade down from general to more specific, where the more specific rules override generic rules.

Correct

Style Sheet

Describes the visual presentation of structured documents.

A browser applies the style rules to each webpage element when rendering the page.

Correct

Reset

Feedback?

A web developer uses CSS to write a list of rules. A **CSS rule** consists of a selector followed by a declaration block between braces ({}).

- A CSS **selector** specifies the HTML elements to which the specific style rule applies.
- A **declaration block** contains one or more declarations separated by semicolons (;).
- A CSS styling **declaration** is a CSS property followed by a colon (:) and the property value.

Figure 4.1.1: Parts of a CSS rule.

[Feedback?](#)

Semicolons are only required to separate rule declarations. A common error is to forget the separating semicolon when adding a new declaration to a declaration block. Good practice is to place each declaration on a separate line and to add a semicolon to the end of each declaration block, even when a semicolon is not required, so that adding the semicolon is not forgotten later when adding more declarations.

**PARTICIPATION
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4.1.2: Valid CSS.



1) `h1 {
 color: black;
}`

- ☒ Valid
☐ Invalid

Correct

The CSS has a selector (h1), an opening brace, a rule declaration, and a closing brace.



2) `p {
 background-
color = blue;
}`

- ☐ Valid
☒ Invalid

Correct

A rule declaration uses a colon, not =, to separate the property from the value. Ex: `background-color: blue;`



3) `span { font-
weight: bold;
font-size: 2em; }`

- ☒ Valid
☐ Invalid

Correct

While a single line may contain multiple declarations, good practice is to place each declaration on a separate line.



4) `div {
 font-family:
serif
}`

- ☐ Valid
☒ Invalid

Correct

While the last rule declaration of a block does not require a trailing semicolon, good practice is to add a semicolon



- ☒ Valid
- ☐ Invalid

to the end of each declaration block.

[Feedback?](#)

Applying CSS

CSS can be applied to HTML in three ways:

1. An **inline style** places CSS declarations inside a tag's **style attribute**.
2. An **embedded stylesheet** places CSS rules in an HTML document's head using `<style>` tags.
3. An **external stylesheet** places CSS rules in a separate file that is imported into an HTML document with a `<link>` tag.

The `style` attribute may be used on any tag. *The `<style>` and `<link>` tags may be placed anywhere in a webpage, but good practice is to place `<style>` and `<link>` tags inside the document head (in `<head>` tags).*

PARTICIPATION ACTIVITY

4.1.3: Three ways to apply CSS.



Start



2x speed

Inline style

```
<p style="color:green">
  I'm green.
</p>
```

I'm green.

Embedded stylesheet

```
<style>
  p { color: orange; }
</style>

<p>I'm orange.</p>
```

I'm orange.

External stylesheet

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

```
<p>I'm purple.</p>
```

```
/* styles.css */
p { color: purple; }
```

I'm purple.

Captions ^

1. An inline style uses an element's style attribute to turn the paragraph text green.
2. An embedded stylesheet defines CSS rules in `<style>` tags. The `p` selector makes all paragraphs have orange text.
3. A `<link>` tag imports an external stylesheet into an HTML document. `styles.css` makes all paragraphs have purple text.

[Feedback?](#)

PARTICIPATION
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4.1.4: Applying CSS.

1) An inline style does not use a selector.

- ☒ True
☐ False

Correct

The style rule is applied to the tag with the `style` attribute, so a selector is unnecessary.

2) An inline style uses braces ({}).

- ☐ True
☒ False

Correct

Braces are not allowed in the `style` attribute.

3) The embedded stylesheet from the animation above makes *all* paragraphs in the webpage orange.

- ☒ True
☐ False

Correct

The `p` selector selects all `<p>` tags in the webpage. However, an inline style can override a CSS rule in an embedded stylesheet.

4) A website should use an external stylesheet to create styles that apply to all webpages.

- ☒ True
☐ False

Correct

An external stylesheet can be imported into all the website's pages to keep the website's fonts, colors, etc. consistent. If a style must be changed in the future, updating the external stylesheet updates the entire website.

5) Inline styles cannot be used with embedded stylesheets or external stylesheets.

- ☐ True
☒ False

Correct

A webpage may use all three methods for applying CSS styles.

[Feedback?](#)

Inheritance and conflict

Every browser has a default stylesheet that specifies styling for each HTML element. Ex: The default style declarations for `<h1>` elements typically specify a bold-weighted font that is twice the normal font size. CSS style declarations override the default style declarations.

The style declarations from a parent element cascade down and are applied to any child elements, a concept called **inheritance**. Each element inherits the style declarations from the

element's parent. The element's parent inherits style declarations from the parent's parent element, and so on up to the top-level `<body>` element.

When two style declarations with identical properties apply to the same element, a **conflict** occurs. Two common conflicts include:

1. A parent's style declaration conflicts with a child's style declaration. Ex: The parent element's text is blue, but a child element's style declaration indicates the color should be green. When a conflict occurs, the child's declaration overrides the parent's declaration.
2. An embedded or external stylesheet's style declaration conflicts with an inline style. Ex: An inline style says the element should be blue, but the embedded stylesheet says the element should be green. When a conflict occurs, an inline style overrides the embedded or external stylesheet's declaration.

Specificity and !important

The browser uses **specificity**, a scoring system that resolves more complex CSS conflicts, to determine what style declarations apply to an element. See the "Exploring further" section below for more information on CSS specificity.

The **!important** rule may be used on a style declaration to override other declarations and disregard specificity. Ex:

`p { color: red !important; }` makes the paragraph red, even if an inline style attempts to make the paragraph green. Stylesheets that use **!important** are hard to understand and difficult to maintain, so good practice is to avoid using **!important**.

PARTICIPATION ACTIVITY

4.1.5: Overriding CSS properties.



Start



2x speed

```
<style>
p { color:orange; }
span { color:green; }
</style>

<p>
  Part of this sentence is orange,
  <span>while the rest is green.</span>
</p>
<p>
  Part of this sentence is orange,
  <span style="color:blue">while the rest
  is blue.</span>
</p>
<p style="color:red">
```

Part of this sentence is orange,
while the rest is green.

Part of this sentence is orange,
while the rest is blue.

This sentence is red.

This sentence is red.
</p>

Captions ^

1. The browser's default styling colors the text black.
2. The embedded stylesheet uses a p selector to color all paragraph text orange.
3. The embedded stylesheet uses a span selector to color all span text green. The first span's color overrides the parent's color.
4. The second span's inline style overrides the embedded stylesheet, so the text is blue.
5. The third paragraph's inline style overrides the embedded stylesheet, so the text is red.

[Feedback?](#)

PARTICIPATION ACTIVITY

4.1.6: Inheritance and conflicts.



Use the HTML below to answer the questions. Assume the HTML in each question is inserted into the <body>.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Presidential Facts</title>
    <style>
      body {
        color: blue;
      }

      div {
        color: green;
      }
    </style>
  </head>
  <body>
    <!-- Content goes here -->
  </body>
</html>
```

1) What color is the text?

<p>George Washington was the first president of the United States.
</p>

Correct

The embedded stylesheet uses the selector **body** to make <body> blue. <p> inherits blue from the parent <body>.

- ☐ Black
- ☒ Blue
- ☐ Green

2) What color is the text?

```
<p style="color:yellow">George Washington was president from 1789 until 1797.</p>
```

Correct

The inline style making the text yellow overrides the parent's blue property color.



- ☒ Yellow
- ☐ Blue
- ☐ Green

3) What color is the text?

```
<div>George Washington did not have a middle name. Middle names were not common in the colonies until the early 19th century.</div>
```

Correct

The embedded stylesheet has a rule that makes a <div> green. The <div>'s color property overrides the parent's blue color property.



- ☐ Black
- ☐ Blue
- ☒ Green

4) What color is the text?

```
<div style="color:orange">George Washington never lived in the White House because construction was completed several years after he retired from the presidency.</div>
```

Correct

The inline style making the text orange overrides the embedded style making the text green.



- ☒ Orange
- ☐ Blue
- ☐ Green

[Feedback?](#)

**PARTICIPATION
ACTIVITY**

4.1.7: Applying CSS declarations.



Given the following HTML and CSS files, indicate which color the web browser will use to display the words. The CSS uses the **inherit** keyword, which specifies that a property should inherit the parent element's value.

hello.html:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <link href="hello.css" rel="stylesheet">
    <style>
      p {
        color: black;
      }
    </style>
    <title>A Sample CSS Page</title>
  </head>
  <body>
    <p>Hello, <span style="color: green">World</span>!</p>
    <p style="color: inherit">Good day</p>
  </body>
</html>
```

hello.css:

```
body {
  color: red;
}
```

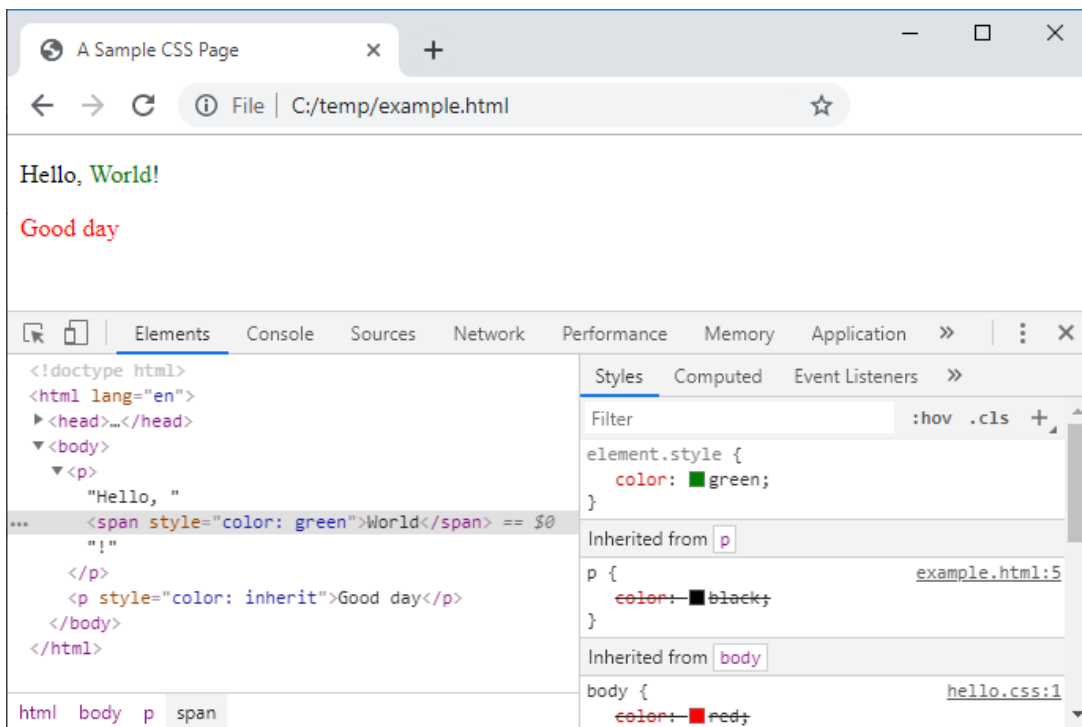
If unable to drag and drop, refresh the page.

black	<h3>Hello</h3> <p>The <code><p></code> element containing "Hello" matches the <code>p</code> selector in the embedded stylesheet, so the <code>color: black</code> declaration is applied.</p>	Correct
green	<h3>World</h3> <p>Although the <code></code> element containing "World" is inside the <code><body></code> and <code><p></code> elements, the <code></code> tag's inline style overrides the color property.</p>	Correct
red	<h3>Good day</h3> <p>The <code><p></code> tag matches the <code>p</code> selector, but the inline style rule overrides the color property, so the element inherits the color property of the paragraph's parent (<code>body</code>), which is set to red in the external stylesheet.</p>	Correct

Reset

Viewing CSS with Chrome DevTools

The Chrome DevTools shows the CSS declarations being applied to the webpage elements. In the screenshot below, the span's inline style makes the span text green. The span element's **color: green** declaration overrides the p element's **color: black** declaration and the body element's **color: red** declaration.



CHALLENGE ACTIVITY

4.1.1: Writing CSS rules.



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[Jump to level 1](#)

Using a `<style>` tag, set the color to green for all `<p>` tags. [SHOW EXPECTED](#)

```
1 <!-- Your solution goes here -->
2 <style>
3 p {
4   color : green;
5 }
6 </style>
7 <p>Paragraph 1 content</p>
8 <p>Paragraph 2 content</p>
9 <p>Paragraph 3 content</p>
```

1

2

3

4

5

Check

Next



✓ Testing number of `<p>` tags

Yours

3

✓ Testing value of color in the first `<p>` tag

Yours

`rgb(0, 128, 0)`

✓ Testing value of color in the second `<p>` tag

Yours

`rgb(0, 128, 0)`

✓ Testing value of color in the third `<p>` tag

Yours

`rgb(0, 128, 0)`

Your webpage



1



2



3



4



5

View your last submission ^

<!-- Your solution goes here -->

```
<style>
p {
  color : silver;
}
</style>
```

[Feedback?](#)

Exploring further:

- [Cascade and inheritance](#) from MDN
- [CSS inherit Keyword](#) from W3Schools
- [CSS Specificity](#) from W3Schools

How was
this
section?



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