



CS 146: Intro to Web Programming and Project Development

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Introduction to CSS



1 What Is CSS?

2 CSS Syntax

3 Location of
Styles

4 Selectors

5 The Cascade: How
Styles Interact

6 The Box Model

7 CSS Text Styling



What Is CSS?

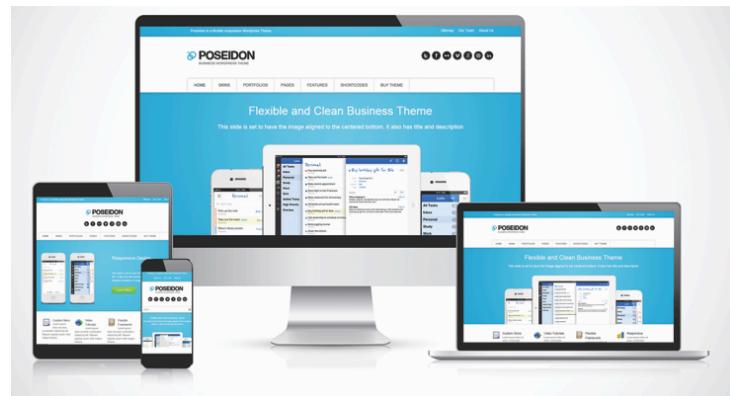
Cascading Style Sheets (CSS)

- CSS is a W3C standard for describing the appearance of HTML elements
- With CSS, we can assign font properties, colors, sizes, borders, background images, and **even position elements on the page**
- CSS can be added directly to any HTML element (via the style attribute), within the <head> element, or, **most commonly, in a separate text file that contains only CSS.**

What Is CSS?

Benefits of CSS

- Improved control over formatting.
- Improved site maintainability.
- Improved accessibility.
- Improved page-download speed.
- Improved output flexibility (responsive design)





What Is CSS?

CSS Versions

- 1996 the CSS Level 1 Recommendation was published
- June 2011 - CSS2.1 becomes an official W3C Recommendation
- a different group at the W3C was working on a CSS3 draft. So far the following CSS3 modules have made it to official W3C Recommendations:
 - CSS Selectors,
 - CSS Namespaces,
 - CSS Media Queries,
 - CSS Color, and
 - CSS Style Attributes



What Is CSS?

Browser Adoption

- Historically implementation of CSS was not **consistent** across major browsers.
- CSS has a reputation for being a somewhat frustrating language due to browser implementation differences
- CSS was not really designed to be a *layout language*, so authors often find it tricky dealing with floating elements, relative positions, inconsistent height handling, overlapping margins, and non-intuitive naming



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CSS Syntax

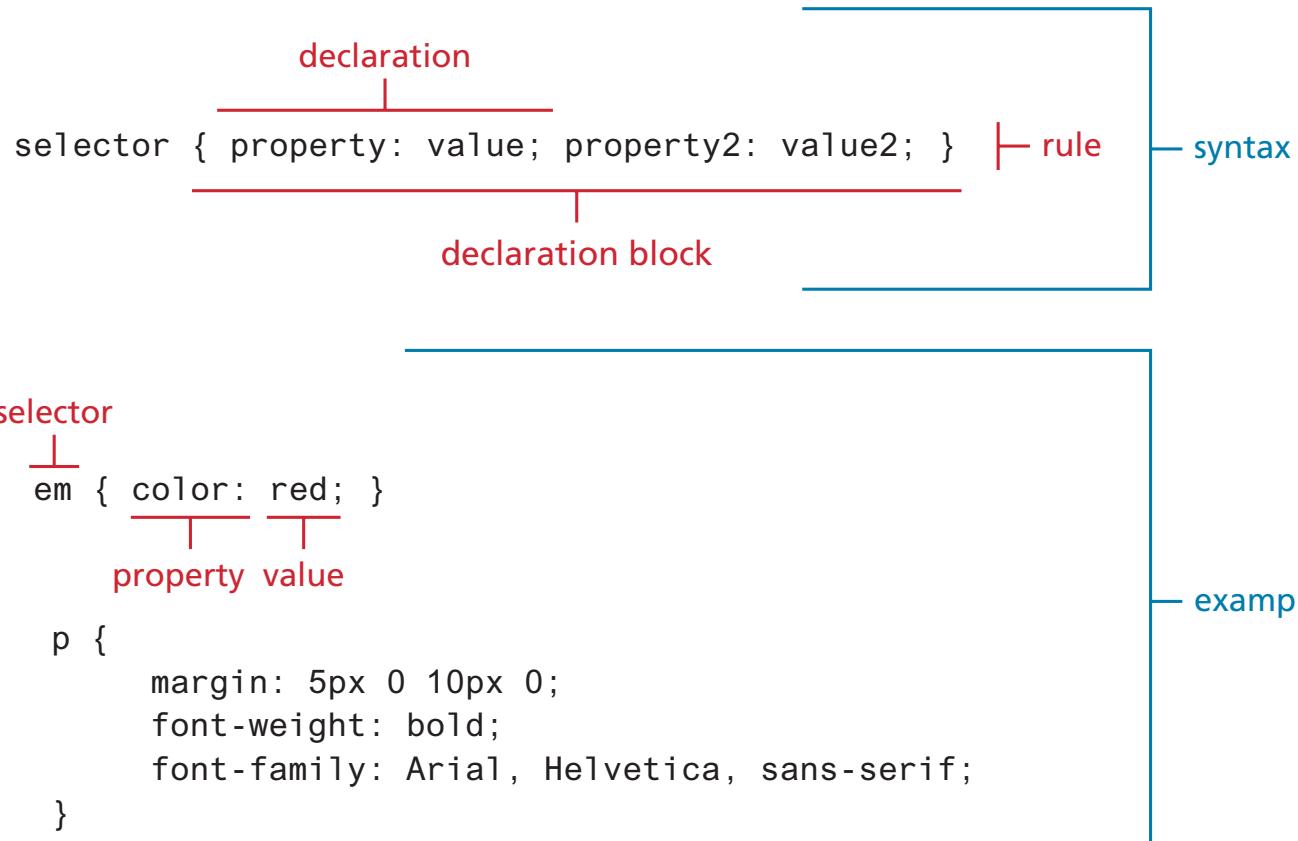
Overview

- A CSS document consists of one or more **style rules**
- A rule consists of a **selector** that identifies the HTML element or elements that will be affected, followed by a series of **property:value** pairs (each pair is also called a declaration)
- The series of declarations is also called the declaration block .



CSS Syntax

Overview





CSS Syntax

Selectors

- Every CSS rule begins with a selector .
- The selector identifies which element or elements in the HTML document will be affected by the declarations in the rule
- Many ways to write selectors (stay tuned...)



CSS Syntax

Properties

- Each individual CSS declaration must contain a property.
- The CSS3 recommendation defines over a hundred different property names



CSS Syntax

Properties

Property Type	Property
Fonts	font font-family font-size font-style font-weight @font-face
Text	letter-spacing line-height text-align text-decoration* text-indent
Color and Background	background background-color background-image background-position background-repeat box-shadow color opacity
Borders	border* border-color border-width border-style border-top, border-left, ...* border-image* border-radius



CSS Syntax

Properties

Property Type	Property
Spacing	padding padding-bottom, padding-left, ... margin margin-bottom, margin-left, ...
Sizing	height max-height max-width min-height min-width width
Layout	bottom, left, right, top clear display float overflow position visibility z-index
Lists	list-style* list-style-image list-style-type
Effects	animation* filter perspective transform* transition*



CSS Syntax

Values

The unit of any given value is dependent upon the property.

Some property values are from a predefined list of keywords. Others are values such as length measurements, percentages, numbers without units, color values, and URLs.



CSS Syntax

Colors

- Name
- RGB
- Hexadecimal
- RGBa
- HSL



CSS Syntax

Relative and absolute Units

- Relative
 - px
 - em
 - %
 - vw,vh
- Absolute
 - In
 - cm
 - Pt



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Location of Styles

Inline Styles

Inline styles are style rules placed within an HTML element via the `style` attribute

```
<h1>Share Your Travels</h1>
```

```
<h2 style="font-size: 24pt;">Description</h2>
```

...

```
<h2 style="font-size: 24pt; font-weight:bold;">  
Reviews</h2>
```

Using inline styles is generally discouraged

Handy for quickly testing out a style change



Location of Styles

Embedded Style Sheet

Embedded style sheets (also called internal styles) are style rules placed within the **<style>** element (inside the **<head>** element of an HTML document).

```
<head>
    <meta charset="utf-8">
    <title>Share Your Travels -- New York - Central
    Park</title>
    <style>
        h1 { font-size: 24pt; }
        h2 {
            font-size: 18pt;
            font-weight: bold;
        }
    </style>
</head>
<body>
    ...

```



Location of Styles

External Style Sheet

External style sheets are style rules placed within a external text file with the .css extension.

```
<head>
    <meta charset="utf-8">
    <title>Share Your Travels -- New York - Central
          Park</title>
    <link rel="stylesheet" href="styles.css" />
</head>
```



Default CSS

For Chrome and Safari

Take a look!

trac.webkit.org/browser/trunk/Source/WebCore/css/html.css



Tools Insight

WYSIWYG Editors

The screenshot shows the Dreamweaver CC interface with the following details:

- Title Bar:** Dreamweaver CC, chapter05-project1.html, chapter05-project1.css.
- Toolbar:** File, Edit, View, Insert, Modify, Format, Commands, Site, Window, Help.
- Code View:** Shows the HTML code for the page.
- Live View:** Shows the visual representation of the website.
- Properties Panel:** Displays CSS properties for selected elements, such as position: absolute; top: 0px; left: 0px; right: auto; bottom: auto;.
- Sidebar:** Contains sections for Files, CC Lib, Insert, Snippet, and CSS Designer.
- Content Area:** Features a header "Camille Bernard's Posts", three blog posts (Florence, Lovin' Tuscany, Love in Venezia), and sections for Related Posts and About Us.
- Bottom Status Bar:** Shows the current selection path: body > article > div > .entry > figure > img > .overlaid.



Tools Insight

Code Editors

The screenshot shows a code editor interface with a dark theme. The top bar displays tabs for "single-painting.php" (which is the active file), "Listing12-19.php", and "project3.js". The left sidebar shows "OPEN FILES" with "single-painting.php" and "project3.js" listed. The main editor area contains PHP code for generating a painting detail page. A tooltip is visible over the word "req", listing various PHP functions like require, require_once, etc. The status bar at the bottom shows "Line 80, Column 60", "Spaces: 2", and "PHP".

```
<!-- Main Info -->
<div class="item">
    <h2 class="header"><?php echo $row['Title']; ?></h2>
    <h3 ><?php echo $row['FirstName'] . ' ' . $row['LastName']; ?></h3>
    |   <div class="meta">
    |
    <p>
        <i class="orange star icon"></i>
        <i class="orange star icon"></i>
        <i class="orange star icon"></i>
        <i class="orange star icon"></i>
        <i class="empty star icon"></i>
    </p>
    |
    <p><?php echo $row['Excerpt'] . $r; ?></p>
    </div>
</div>

<!-- Tabs For Details, Museum, Genre, Sub -->
<div class="ui top attached tabular menu">
    <a class="active item" data-tab="details"><i class="cube icon"></i> Details</a>
    <a class="item" data-tab="museum"><i class="cube icon"></i> Museum</a>
    <a class="item" data-tab="genres"><i class="cube icon"></i> Genres</a>
    <a class="item" data-tab="subjects"><i class="cube icon"></i> Subjects</a>
</div>
```

Tools Insight

Integrated Development Environments

Eclipse IDE screenshot showing an integrated development environment for PHP development:

- PHP Explorer View:** Shows the project structure with files like `CrawlerTest`, `Crawler.php`, `config.php`, `Crawler`, `pageRankCalc.php`, and `Stats.php`.
- PHP Editor View:** Displays the code for `Crawler.php` and `pageRankCalc.php`. The `Crawler.php` code includes functions for database interaction and URL crawling. The `pageRankCalc.php` code handles link analysis and page ranking calculations.
- PHP Functions View:** A list of available PHP functions categorized under `Generator`, `GMP`, `Imagick`, etc.
- Type Hierarchy View:** Shows the inheritance hierarchy for the `Crawler` class, including methods like `__construct`, `crawl`, `getListFromDatabase`, `getNextURLToCrawl`, `getOrnserDomain`, `insertLinks`, `printSummary`, `robotsAllow`, and `scrapeHyperlinks`.
- Git Repositories View:** Shows a local repository named `git INO-HEAD - Bare` located at `/Users/rhoar/git`.



Tools Insight

Cloud-Based Environments

Screenshot of a web-based code editor interface:

File: Chapter17-project2 / Chapter17-project2 / detail.html

Content:

```
<i class="user icon"></i>
Account
    <i class="dropdown icon"></i>
    <div class="menu">
        <a class="item"><i class="sign in icon"></i> Login</a>
        <a class="item"><i class="edit icon"></i> Edit Profile</a>
        <a class="item"><i class="globe icon"></i> Choose Language</a>
        <a class="item"><i class="settings icon"></i> Account Settings</a>
    </div>
    <a class=" item">
        <i class="heartbeat icon"></i> Favorites
    </a>
    <a class=" item">
        <i class="shop icon"></i> Cart
    </a>
</nav>
</div>
</div>

<div class="ui attached stackable borderless huge menu" >
    <div class="ui container">
        <h2 class="header item">
            
        </h2>
        <a class="item">
            <i class="home icon"></i> Home
        </a>
        <a class="item">
            <i class="mail icon"></i> About Us
        </a>
        <a class="item">
            <i class="home icon"></i> Blog
        </a>
    </div>
</div>
```

The screenshot shows a code editor with a sidebar showing project files like vendor, webroot (css, assets, fonts, _styles.css, icon.css, semantic.css, semantic.js, styles.css), images, includes, js (empty, misc.js), lib, .htaccess, browse-paintings.php, detail.html, favicon.ico, index.php, list.html, single-painting.php, testdb-classes.php, and testdb-pdo.php. The main pane displays the detail.html file with semantic UI code. A tooltip is visible over the 'a' tag in the header menu, showing 'alt' and 'accesskey' attributes.



Tools Insight

Code Playgrounds

The screenshot shows the CodePen interface with the following details:

- Panel Tabs:** HTML, CSS, JS
- HTML:**

```
<html>
<head>
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/font-awesome/4.5.0/css/font-awesome.min.css">
<link rel="stylesheet" href="css/exercise1.css">
<script type="text/javascript" src="js/exercise1.js"></script>
</head>
<body>
<main>
<div class="alert info">
```
- CSS:**

```
.alert {
    margin: 20px 0px;
    padding: 12px;
}
.info {
    color: #105B63;
    background-color: #FFD34E;
}
.success {
    color: #FFFAD5;
    background-color: #105B63;
}
.warning {
    color: #105B63;
}
```
- JS:**

```
window.addEventListener("load", init);
function init() {
    // select all the buttons
    var closeButtons =
        document.querySelectorAll("main div.alert i");
    // loop through them and add listener
    // that will fade panel when button clicked
    for (var i = 0; i < closeButtons.length; i++) {
        closeButtons[i].addEventListener("click",
```
- Content Area:** Three yellow callout boxes, each containing a paragraph of placeholder text starting with "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum".
- Bottom Navigation:** Collections, Console, Assets, Embed, Comments, Delete, Shortcuts, Last saved less than a minute ago, Share, Export