Introduction to Cascading Style Sheets (CSS)

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What is CSS?

- Defines style and layout of HTML documents
- Adjustable features include ¹
  - colors
  - fonts
  - sizes
  - spacing
  - positioning

¹ include but are not limited to
CSS Rules

- assign values CSS properties
- are assigned to different document elements based on selectors
- are applied in a fixed order with later rules supplanting earlier ones (they "cascade")

property-name: assigned-value;

color: green;
Selectors determine the elements in the HTML document to which CSS rules should apply.

<table>
<thead>
<tr>
<th>Selector</th>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>element</td>
<td>p</td>
<td>all &lt;p&gt; elements</td>
</tr>
<tr>
<td>.class</td>
<td>.author-note</td>
<td>all elements with class=&quot;authors-note&quot;</td>
</tr>
<tr>
<td>#id</td>
<td>#title</td>
<td>all elements with id=&quot;title&quot;</td>
</tr>
<tr>
<td>[attribute=value]</td>
<td>[hidden=&quot;True&quot;]</td>
<td>all elements with hidden=&quot;True&quot;</td>
</tr>
<tr>
<td>:hover</td>
<td>a:hover</td>
<td>any &lt;a&gt; element that is hovered over</td>
</tr>
</tbody>
</table>

```css
p {
    font-family: Arial, Helvetica, sans-serif;
}
```
CSS Rules are applied in the following order:

The narrower scopes receive preference:

1. External Style Sheets
2. Document Style Definitions
3. Inline Style Attributes

**Scopes**

- External - apply to all documents that link them
- Document - apply to the defining document
- Inline - apply to the defining element
External CSS

**HTML Document**

```html
<!DOCTYPE html>
<html>
<head>
    <title> CSC 210 </title>
    <link rel="stylesheet" href="styles.css"/>
</head>
<body>
    <h1> Welcome to CSC 210! </h1>
</body>
</html>
```

**CSS Document** "styles.css"

```css
h1 {
    color: green;
}
```
<!DOCTYPE html>
<html>
  <head>
    <title> CSC 210 </title>
    <style>
      h1 {
        color: green;
      }
    </style>
  </head>
  <body>
    <h1> Welcome to CSC 210! </h1>
  </body>
</html>
<!DOCTYPE html>
<html>
  <head>
    <title> CSC 210 </title>
  </head>
  <body>
    <h1 style="color: green;">
      Welcome to CSC 210!
    </h1>
  </body>
</html>
Box Model

- **Content**: content of box where images, text, etc appear
- **Padding**: transparent area between content and border
- **Border**: visible border (often colored)
- **Margin**: transparent area between border and other elements
The browser converts HTML and CSS into the Document Object Model (DOM).

The DOM represents the document in memory. It combines the document’s content and style.
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