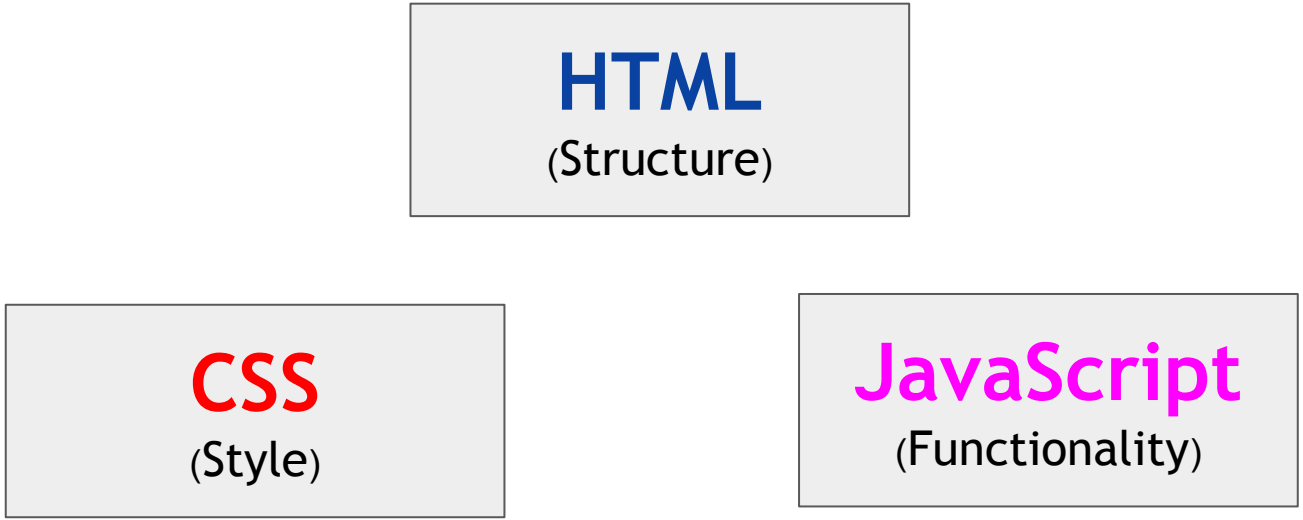
What is CSS?

- CSS stands for **Cascading Style Sheets**.
- Used to style and layout web pages.
- It controls colors, fonts, spacing, and positioning.

Role of CSS in Web Development

- Separation of concerns: HTML for structure, CSS for design, JavaScript for functionality.
- Enhances user experience with professional designs.


HTML
(Structure)
CSS
(Style)
JavaScript
(Functionality)

```html
<!DOCTYPE html>
<html>
  <head>
    <title>My First Page</title>
  </head>
  <body>
    <h1>Welcome!</h1>
    <p>This is my first HTML page.</p>
  </body>
</html>
```

Welcome!

This is my first HTML page.

```html
<!DOCTYPE html>
<html>
  <head>
    <title>My First Page</title>
  </head>
  <body>
    <h1>Welcome!</h1>
    <p style="color: red">This is my first HTML page.</p>
  </body>
</html>
```

Welcome!

This is my first HTML page.

Types of CSS

- **Inline CSS**: Applied directly to an element.
- **Internal CSS**: Defined within <style> in the <head>
- **External CSS**: Linked via <link> in the <head>

Inline CSS -Applied directly to an element

```
<!DOCTYPE html>
<html>
  <head>
    <title>My First Page</title>
  </head>
  <body>
    <h1>Welcome!</h1>
    <p style="color: red">This is my first HTML page.</p>
  </body>
</html>
```

Internal CSS -Defined within <style> in the <head>

```
<!DOCTYPE html>
<html>
  <head>
    <title>My First Page</title>
    <style>
      p{
        color: red
      }
    </style>
  </head>
  <body>
    <h1>Welcome!</h1>
    <p>This is my first HTML page.</p>
  </body>
</html>
```

External CSS -Linked via <link> in the <head>

```html
<!DOCTYPE html>
<html>
  <head>
    <title>My First Page</title>
    <link href="css/styles.css">
  </head>
  <body>
    <h1>Welcome!</h1>
    <p>This is my first HTML page.</p>
  </body>
</html>
```

Anatomy of a CSS Rule

- **Selector**: Targets HTML elements.
- **Property**: Style attribute to be applied
- **Value**: Specifies the style

```
h1 {
  color: blue;
  font-size: 24px;
}
```

Basic CSS Selectors

- **Type Selector**: Targets tags (eg. p, h1)
- **Class Selector**: Targets classes (.classname)
- **ID Selector**: Targets unique IDs (#idname)

Type Selector : Targets tags (eg. p, h1)

```html
<!DOCTYPE html>
<html>
  <head>
    <title>My First Page</title>
    <link href="css/styles_01.css">
    <style>
      h1{
        font-size: 24px;
        color: green;
      }
    </style>
  </head>
  <body>
    <h1>This is Internal Style</h1>
    <h2>This is External Style</h1>
    <p style="color: red; font-size:18px; font-weight: bold">
      This is from Inline Style
    </p>
  </body>
</html>
```

Class Selector : Targets classes (.classname)

```
<!DOCTYPE html>
<html>
  <head>
    <title>My First Page</title>
    <link rel="stylesheet" type="text/css" href="css/styles_02.css">
    <style>
      .caption{
        font-size: 24px;
        color: green;
      }
    </style>
  </head>
  <body>
    <h1 class="title">This is from class selector</h1>
    <p class="caption">This is from class selector</p>
  </body>
</html>
```

ID Selector : Targets unique IDs (#idname)

```html
<!DOCTYPE html>
<html>
  <head>
    <title>My First Page</title>
    <link rel="stylesheet" type="text/css" href="css/styles_03.css">
    <style>
      #title{
        font-size: 24px;
        color: green;
      }
    </style>
  </head>
  <body>
    <p id="title">This is from ID selector- internal</h1>
    <p id="sub-title">This is from id selector - external</p>
  </body>
</html>
```

Grouping & Combining

- **Grouping**: Combine selectors to apply the same styles (h1, h2, p).
- **Descendant Selector**: Targets child elements (eg. div p)
- **Child Selector**: Targets direct children (div > p)

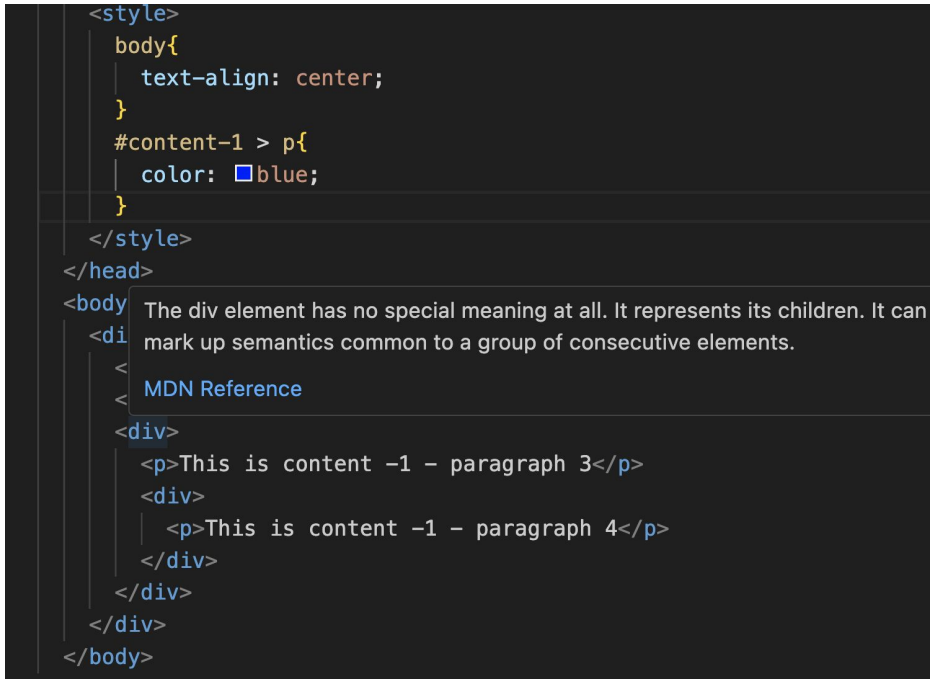
Grouping: Combine selectors to apply the same styles (h1, h2, p).

```
    <style>
      body{
        text-align: center;
      }
      #content-1, #content-2, .caption{
        color: blue;
      }
      #content-1{
        font-size: 24px;
      }
      #content-2{
        font-size: 18px;
      }
    </style>
  </head>
  <body>
    <p id="content-1">
      This is content -1
    </p>
    <p id="content-2">
      This is  content -2
    </p>
    <p class="caption">This is caption</p>
  </body>
```

Descendant Selector: Targets child elements (eg. div p)

```
    <style>
      body{
        text-align: center;
      }
      #content-1 p{
        color: blue;
      }
    </style>
  </head>
  <body>
    <div id="content-1">
      <p>This is content -1 - paragraph 1</p>
      <p>This is content -1 - paragraph 2</p>
      <div>
        <p>This is content -1 - paragraph 3</p>
        <div>
          <p>This is content -1 - paragraph 4</p>
        </div>
      </div>
    </div>
  </body>
```

Class Selector: Targets direct children (eg. div > p)




```
<style>
  body{
    text-align: center;
  }
  #content-1 > p{
    color: blue;
  }
</style>
</head>
<body
  <di
    <
    <
    <div>
      <p>This is content -1 - paragraph 3</p>
      <div>
        <p>This is content -1 - paragraph 4</p>
      </div>
    </div>
  </div>
</body>
```

Now we have a problem

```
    <style>
      body{
        text-align: center;
      }
      #content-1{
        color: blue;
      }

      .caption{
        color:green;
      }

    </style>
  </head>
  <body>
    <p id="content-1" class="caption" style="color:red">
      What will be my font color?
    </p>
  </body>
```

CSS Specificity

- When multiple CSS rules apply to the same element, specificity helps decide which rule "wins."
- Specificity is calculated based on the type of selectors used in a rule.

CSS Specificity values

Inline (1000)

ID (100)

Class (10)

Element (1)

Thank You