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CSS3 BASICS (1)

Introduction to Internet Programming
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WHAT IS CSS?

- CSS is the key presentational technology that is used in website design.

- CSS stands for Cascading Style Sheets.

- CSS is a standard style sheet language used for describing the presentation (i.e. the layout and formatting) of the web pages.

- CSS was designed to enable the separation of presentation and content.

- CSS3 is the latest version of the CSS specification.

- CSS3 adds several new styling features and improvements to enhance the web presentation capabilities.

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WHAT CAN DO WITH CSS?

- Easily apply same style rules on multiple elements.

- Control the presentation of multiple pages of a website with a single style sheet.

- Change the position of an element on a web page without changing the markup.

- Alter the display of existing HTML elements.

- Create animations and transitions effects without using any JavaScript.

- Create print friendly version of your web pages.

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INCLUDING CSS

- CSS can either be attached as a separate document or embedded in the HTML document itself.

- There are three methods of including CSS in an HTML document:

  - **Inline styles** — Using the style attribute in the HTML start tag.

  - **Embedded styles** — Using the <style> element in the head section of a document.

  - **External style sheets** — Using the <link> element, pointing to an external CSS file.

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INCLUDING CSS (cont'd)

- **Note:**

  - The inline styles have the highest priority, and the external style sheets have the lowest.

  - Among all the three methods, using external style sheet is the best method for defining and applying styles to the HTML documents

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INLINE STYLES

- Inline styles are used to apply the unique style rules to an element by putting the CSS rules directly into the start tag.
- It can be attached to an element using the style attribute.

```
<h1 style="color:red; font-size:30px;">
        This is a heading
</h1>

<p style="color:green; font-size:22px;">
        This is a paragraph.
</p>

<div style="color:blue; font-size:14px;">
        This is some text content.
</div>
```

- Using the inline styles are generally considered as a bad practice. As it causes the presentation to become mixed with the content of the document; which negates the purpose of using CSS.

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INTERNAL STYLE SHEETS

- Embedded style sheets are defined in the <head> section of an HTML document using the <style> element.

```
<head>
    …………
    <title>My HTML Document</title>
    <style>
        body { background-color: YellowGreen; }
        p    { color: #fff; }
    </style>
    ………
</head>
```
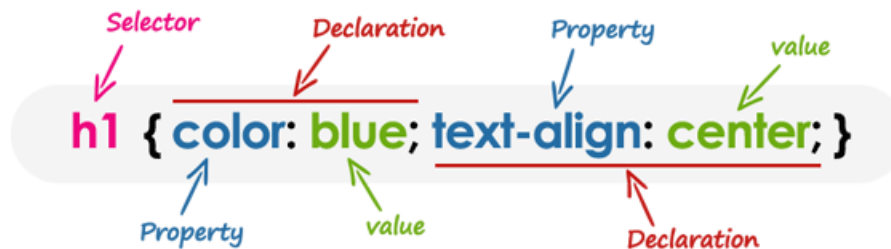
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EXTERNAL STYLE SHEETS

- An external style sheet is ideal when the style is applied to many pages of the website.

- An external style sheet holds all the style rules in a separate document that you can link from any HTML file on your site.

- External style sheets are the most flexible because with an external style sheet, you can change the look of an entire website by changing just one file.

- An external style sheet can be linked to an HTML document using the <link> tag. The <link> tag goes inside the <head> section.

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

CSS SYNTAX

- A CSS rule have two main parts, a selector and one or more declarations:

- The selector specifies which element or elements in the HTML page the CSS rule applies to.

- The declarations within the block determines how the elements are formatted on a webpage.

- Each declaration consists of a property and a value separated by a colon (:) and ending with a semicolon (;), and the declaration groups are surrounded by curly braces {}.

CSS SYNTAX

- The property is the style attribute you want to change; they could be font, color, background, etc.

- Each property has a value, for example color property can have value either blue or #0000FF etc.

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

- h1 is a selector, color and text-align are the CSS properties, and the given blue and center are the corresponding values of these properties.

- A CSS declaration always ends with a semicolon ";", and the declaration groups are always surrounded by the curly brackets "{}".

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COMMENTS IN CSS

- A CSS comment begins with /*, and ends with */

- Comments are usually added with the purpose of making the source code easier to understand. It may help other developer (or you in the future when you edit the source code) to understand what you were trying to do with the CSS.

- Comments are significant to programmers but ignored by browsers.

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CASE SENSITIVITY IN CSS

- **CSS property names** and many values are **not case-sensitive**.

- Whereas, **CSS selectors** are usually **case-sensitive**

- Therefore, to be on safer side, you should assume that all components of CSS rules are case-sensitive.

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CSS SELECTORS

- Selectors are one of the most important aspects of CSS as they allow you to target specific elements on your web page in various ways so that they can be styled.

- Several types of selectors are available in CSS:

  1. **Universal Selector**

     - The universal selector, denoted by an asterisk (*), matches every single element on the page.

       ```
       *{ margin: 0; padding: 0; }
       ```

     - The style rules inside the * selector will be applied to every element in a document.

     - It is recommended ***not to use*** the universal selector (*) too often, Use element type or class selector instead.

CSS SELECTORS

2.   **Element Type Selectors**

```
p { color: blue; }
```

- The style rules inside the p selector will be applied on every <p> element (or paragraph) in the document and color it blue, regardless of their position in the document tree.

3. Id Selectors

- The id selector is used to define style rules for a *single* or *unique* **element**.

- The id selector is defined with a hash sign (**#**) immediately followed by the id value.

```
#error { color: red; }
```

- This style rule renders the text of an element in red, whose id attribute is set to error.

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CSS SELECTORS

4. **Class Selectors**
   - The class selectors can be used to select any HTML element that has a class attribute. **All the elements** having that class will be formatted according to the defined rule.
   - The class selector is defined with a period sign (**.**) immediately followed by the class value.

```
.blue { color: blue; }
```

   - The above style rules renders the text in blue of every element in the document that has class attribute set to blue.

```
p.blue { color: blue; }
```

   - The style rule inside the selector p.blue renders the text in blue of only those <p> elements that has class attribute set to blue, and has no effect on other paragraphs.

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CSS SELECTORS

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5.   **Grouping Selectors**

- Often several selectors in a style sheet share the same style rules declarations. You can group them into a comma-separated list to minimize the code in your style sheet. It also prevents you from repeating the same style rules over and over again.

```
h1, h2, h3 { font-weight: normal; }
```

- The same style rule font-weight: normal; is shared by the selectors h1, h2 and h3, so it can be grouped in a comma-separated list.

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SPECIFICITY HIERARCHY

- There are four categories which define the specificity level of a selector:

  - **Inline styles** - Example: <h1 style="color: pink;">

  - **IDs** - Example: #navbar

  - **Classes, pseudo-classes, attribute selectors** - Example: .test, :hover, [href]

  - **Elements and pseudo-elements** - Example: h1, :before

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HOW TO CALCULATE SPECIFICITY?

- **Calculation steps:**
  - Start at 0
  - Add 100 for each ID value
  - Add 10 for each class value (or pseudo-class or attribute selector)
  - Add 1 for each element selector or pseudo-element.
  - Inline style gets a specificity value of 1000, and is always given the highest priority!
- **The selector with the highest specificity value will win and take effect!**
- **Note:**
  - the universal selector * is ignored with the specificity value 0.
  - Equal specificity: the latest rule wins - If the same rule is written twice into the external style sheet, then the latest rule wins

CSS COLOR

- The color property defines the text color of an element.
- Colors in CSS most often specified in the following formats:
  - **a color keyword** - like "red", "green", "blue", "transparent", etc.
    ```
    h1 { color: red; }
    ```
  - **a HEX value** - like "#ff0000", "#00ff00", etc.
    ```
    p { color: #00ff00; }
    ```
  - **an RGB value** - like "rgb(255, 0, 0) "
    ```
    h1 { color: rgb(255, 165, 0); }
    ```
- The color names are case-insensitive.
- The color property normally inherits the color value from their parent element,
- rgb(255, 255, 255) ------ the color would be white.
- rgb(0, 0, 0) ------ the color would be black.

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CSS VALIDATION SERVICE

- https://jigsaw.w3.org/css-validator/

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THE END