CSS

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General Concepts

CSS

- **Cascading Style Sheets (CSS)** is used to format the layout of a webpage.

- With CSS, you can control the color, font, the size of text, the spacing between elements, how elements are positioned and laid out, what background images or background colors are to be used, different displays for different devices and screen sizes, and much more!

- The word cascading means that a style applied to a parent element will also apply to all children elements within the parent. So, if you set the color of the body text to "blue", all headings, paragraphs, and other text elements within the body will also get the same color (unless you specify something else)!

General Concepts

Using CSS

- CSS can be added to HTML documents in 3 ways:

  - **Inline** - by using the style attribute inside HTML elements

  - **Internal** - by using a <style> element in the <head> section

  - **External** - by using a <link> element to link to an external CSS file

- The most common way to add CSS, is to keep the styles in external CSS files. However, in this tutorial we will use inline and internal styles, because this is easier to demonstrate, and easier for you to try it yourself.

General Concepts

Inline CSS

- An inline CSS is used to apply a unique style to a single HTML element.

- An inline CSS uses the style attribute of an HTML element.

- The following example sets the text color of the <h1> element to blue, and the text color of the <p> element to red:

```
<h1 style="color:blue;">A Blue Heading</h1>

<p style="color:red;">A red paragraph.</p>
```

General Concepts

Internal CSS

- An internal CSS is used to define a style for a single HTML page.

- An internal CSS is defined in the <head> section of an HTML page, within a <style> element.

- The following example sets the text color of ALL the <h1> elements (on that page) to blue, and the text color of ALL the <p> elements to red. In addition, the page will be displayed with a "powderblue" background color:

General Concepts

Internal CSS

```
<!DOCTYPE html>

<html>

    <head>

     <style>

        body {background-color: powderblue;}

        h1    {color: blue;}

        p     {color: red;}

     </style>

    </head>

<body>

<h1>This is a heading</h1>

<p>This is a paragraph.</p>

</body>

</html>
```

General Concepts

External CSS

- An external style sheet is used to define the style for many HTML pages.

- To use an external style sheet, add a link to it in the **<head> section** of each HTML page.

- The external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with a **.css extension**.

- With an external style sheet, you can change the look of an entire web site, by changing one file.

General Concepts

External CSS

```
<!DOCTYPE html>

<html>

<head>

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

</head>

<body>


<h1>This is a heading</h1>

<p>This is a paragraph.</p>


</body>

</html>
```

General Concepts

External CSS

- style.css file

```css
body {

  background-color: powderblue;

}

h1 {

  color: blue;

}

p {

  color: red;

}
```

CSS Syntax

- A CSS rule consists of a selector and a declaration block.

  - The selector points to the HTML element where the CSS style is to be applied.

  - The declaration block contains one or more declarations separated by semicolons.

  - Each declaration includes a CSS property name and a value, separated by a colon.

  - Multiple CSS declarations are separated with semicolons, and declaration blocks are surrounded by curly braces.
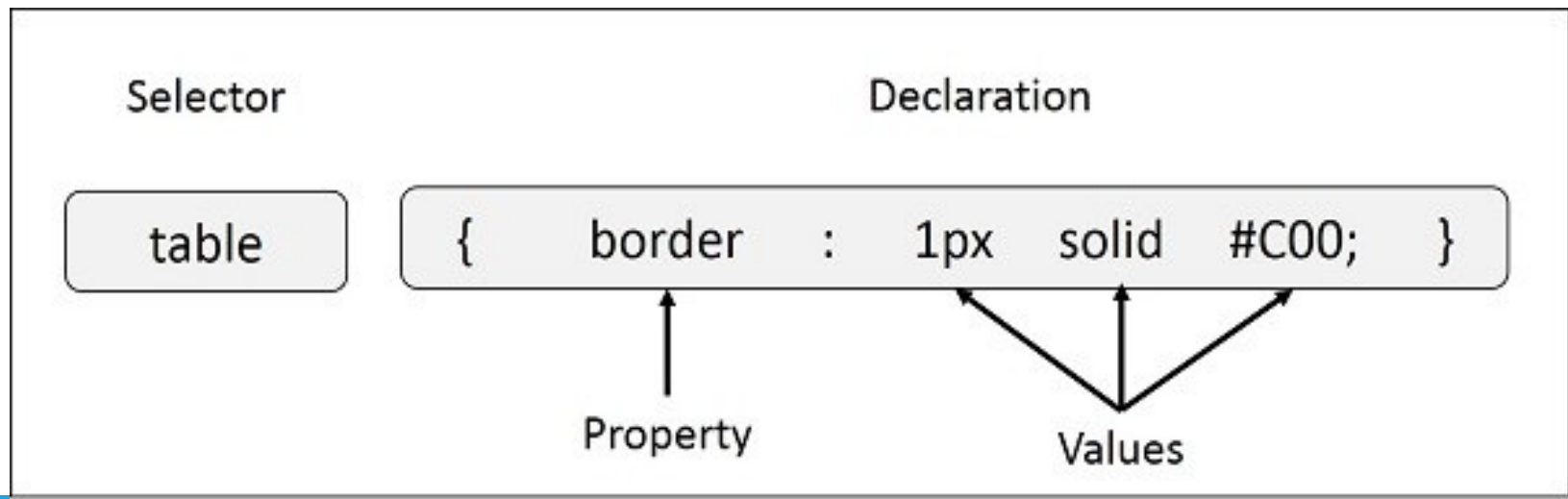
CSS Syntax

- The general syntax:

  selector { property: value };

- Example:

table { border: 1px solid #C00 };

CSS Syntax

- In this example all <p> elements will be **center-aligned,** with a **red text color**:

- **p** is a selector in CSS (it points to the HTML element you want to style: <p>).

- **color** is a property, and **red** is the property value

- **text-align** is a property, and **center** is the property value

```
p {

    color: red;

    text-align: center;

}
```

CSS Selectors

- CSS selectors are patterns used to select and style HTML elements on a web page.

- The element or elements that are selected by the selector are referred to as **subject of the selector**.

- The following are different CSS selector:

  - Type Selector

  - Class Selector

  - ID Selector

  - Attribute Selector

  - Pseudo-class Selector

  - Pseudo-element Selector

  - Universal Selector

  - & nesting selector

Type Selector

- A type selector targets an HTML element, such as <h1>, <p>, etc.

Type Selector

CSS Example

```html
<!DOCTYPE html>
<html>
<head>
<style>
    div {
        border: 5px inset gold;
        width: 300px;
        text-align: center;
    }
    p {
        color: green;
    }
    h1 {
        text-decoration-line: underline;
    }
</style>
</head>
<body>
    <div>
        <h1>Type selector</h1>
        <p>div with border and text-aligned to center</p>
        <p>paragraph with green color</p>
        <p>h1 with an underline</p>
    </div>
</body>
</html>
```

Class Selector

- A class selector targets an element with a specific value for its class attribute.

- For example: **.style-p, .style-h1 and .style-div** are class selectors

Class Selector

CSS Example

```
<!DOCTYPE html>
<html>
<head>
<style>
    .style-div {
        border: 5px inset gold;
        width: 300px;
        text-align: center;
    }
    .style-p {
        color: green;
        font-size: 25px;
    }
    .style-h1 {
        text-decoration-line: underline;
    }
</style>
</head>
<body>
    <div class="style-div">
        <h1 class="style-h1">class selector</h1>
        <p class="style-p">class .style-p applied</p>
        <p>No class applied on this p element</p>
    </div>
</body>
</html>
```

ID Selector

- An ID selector targets an element with a specific value for its id attribute.

- For example: **#style-p, #style-h1 and #style-div** are the id selectors applied on the elements

ID Selector

CSS Example

```
<!DOCTYPE html>
<html>
<head>
<style>
    .style-div {
        border: 5px inset gold;
        width: 300px;
        text-align: center;
    }
    .style-p {
        color: green;
        font-size: 25px;
    }
    .style-h1 {
        text-decoration-line: underline;
    }
</style>
</head>
<body>
    <div class="style-div">
        <h1 class="style-h1">class selector</h1>
        <p class="style-p">class .style-p applied</p>
        <p>No class applied on this p element</p>
    </div>
</body>
</html>
```

Attribute Selector

- A pseudo-class is used to define a special state of an element.

- For example, it can be used to:
    - Style an element when a user mouses over it
    - Style visited and unvisited links differently
    - Style an element when it gets focus

Attribute Selector

CSS Example

```
<!DOCTYPE html>
<html>
<head>
<style>
    a[target] {
        background-color: peachpuff;
        color: blueviolet;
        font-size: 2em;
    }
</style>
</head>
<body>
    <h2>Attribute selector</h2>
    <p>Styling applied to anchor element with target attribute:</p>
    <a href="#">Tutorialspoint</a>
    <a href="#" target="_blank">google</a>
    <a href="#" target="_self">wikipedia</a>
</body>
</html>
```

Universal Selector

- Universal selector, denoted by an asterisk mark (*), is a special selector that matches any and all elements in an HTML document.

Universal Selector

CSS Example

```
<!DOCTYPE html>
<html>
<head>
<style>
    * {
        background-color: peachpuff;
        color: darkgreen;
        font-size: 25px;
    }
</style>
</head>
<body>
    <h1>Universal selector (*)</h1>

    <div>Parent element
    <p>Child paragraph 1</p>
    <p>Child paragraph 2</p>
    </div>

    <p>Paragraph 3</p>
</body>
</html>
```

Pseudo-class Selector

- A pseudo-class is used to define a special state of an element.

- For example, it can be used to:
  - Style an element when a user mouses over it
  - Style visited and unvisited links differently
  - Style an element when it gets focus

Pseudo-class Selector

CSS Example

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  display: none;
  background-color: yellow;
  padding: 20px;
}
div:hover p {
  display: block;
}
</style>
</head>
<body>

<div>Hover over this div element to show the p element
  <p>Tada! Here I am!</p>
</div>

</body>
</html>
```

Pseudo-element Selector

- A CSS pseudo-element is used to style specified parts of an element.

- For example, it can be used to:
    - Style the first letter, or line, of an element
    - Insert content before, or after, the content of an element

Pseudo-element Selector

CSS Example

```
<!DOCTYPE html>

<html>

<head>

<style>

p::first-line {

    color: #ff0000;

    font-variant: small-caps;

}

</style>

</head>

<body>

<p>You can use the ::first-line pseudo-element to add a special
effect to the first line of a text. Some more text. </p>

</body>

</html>
```

& nesting Selector

- A CSS nesting allows to nest one style rule inside another rule, with the selector of the child rule relative to the selector of the parent rule.

- The nesting selector shows the relationship between the parent and child rules.

& nesting Selector

CSS Example

```html
<!DOCTYPE html>
<html>
<head>
<style>
    #sample {
        font-family: Verdana, Geneva, Tahoma, sans-serif;
        font-size: 1.5rem;
        & a {
            color: crimson;
            &:hover,
            &:focus {
                color: green;
                background-color: yellow;
            }
        }
    }
</style>
</head>
<body>
    <h1>& nesting selector</h1>
    <p id="sample">
        Hover <a href="#">over the link</a>.
    </p>
</body>
</html>
```