Introduction to CSS

CSS INTRODUCTION

As you are done with the HTML part, now it's time to learn CSS. Adding CSS to your websites will make them presentable and somewhat like the sites you see on the internet.

- **CSS is a shorthand for Cascading Style Sheets.**
- **CSS describes how the HTML elements are to be displayed.**
- **CSS is used to control the layout of multiple web pages at once.**
- **Includes the addition of visuals such as colour, fonts, layouts, etc.**

The syntax for CSS is:

```
selector {
    property: values;
}
```

Each property ends with a semicolon.
Each property includes a name for the css property and a value separated by a colon.

Below is an example, to see how CSS modifies the HTML code:

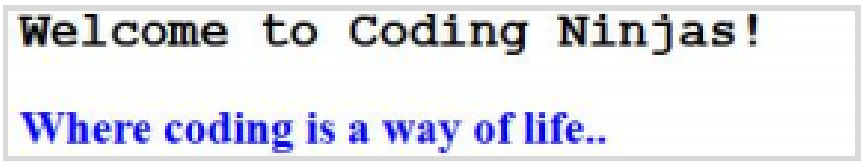
```
<h1>Welcome to Coding Ninjas!</h1>
<h2>Where coding is a way of life..</h2>
```

Now, adding CSS to the above HTML code:

```
h1 {
    font-family: monospace;
}

h2 {
    color: blue;
}
```

The code snippet would now look like this:



CSS COMMENTS

CSS also has comments, just as HTML. These comments can help in changes at a later stage, easily by defining the various sections of HTML element styles. You can also specify where certain generic style(s) can be used.

A CSS comment initiates with /* and ends with */. Comments can also span multiple lines.

ADDING CSS TO HTML PAGE

The browser formats the HTML document based upon the information in the stylesheet. The browser will access the stylesheets in the HTML document itself. There are 3 ways to add CSS styles to your document:

- Inline Styles
- External Styles
- Internal Styles

Which style will be applied to elements when multiple styles are used is defined by the Cascading order. Cascading order priority is given as: ***Inline > (internal≅ external) > browser default.***

The browser treats both internal and external CSS equally, but the order in which they are defined, determines which property gets priority.

If the link to internal CSS is defined *before the external CSS*, then properties of external CSS will get preference over internal CSS, i.e. **external CSS > internal CSS.**
If the link to internal CSS is *defined after the external CSS*, then properties of internal CSS will get the preference, i.e **internal CSS > external CSS.**

Inline Styles

The **style attribute** is used to apply an inline stylesheet directly to our HTML code.The inline stylesheet syntax will have the properties specified inside the style attribute. Multiple properties can be specified at a time.
To **apply a unique style to a single element**, use inline styling.

You can use inline styles like this:

```
<p style="color:blue;font-size:40px">Inline CSS</p>
```

Internal Styles

An **internal** or **in-page** stylesheet contains the CSS style code for the web page. The internal stylesheet provides the styles for that particular HTML document only. The internal stylesheet cannot be reused.
Internal CSS can be specified with the help of the **<style>** tag inside the **<head>** tag.

You can use internal styles like this:

```
<style>
    h1 {
        color: blue;
    }
    h2 {
        color: red;
    }
    p {
        color: green;
    }
</style>
```

External styles

To transform the look of an entire website by changing just **one file**, if you use an external **stylesheet**. Although the **syntax is similar to internal stylesheets**, it is implemented using a **separate CSS file.** The '**.css' extension** is used to save it. Eg. 'styles.css'.

To use external stylesheet, a reference is provided to file inside the **<link>** element:

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

The **rel** defines the linked document relationship (here, favicon).
The **href** specifies where the linked document is located (here, favicon).
The **type** defines the type of media of the linked document (here, favicon).

NOTE: *The link is placed within the head. Only the CSS syntax code is contained in the'styles.css' file only.*

SELECTORS

Selectors are used to point to the HTML element that needs to be styled.
Selectors are used in both internal and external stylesheets.

Styles are applied using three different types of selectors:

- **Element selector**
- **Class Selector**
- **Id selector**

When multiple styles are applied to an element, specificity determines which style will be used.

The latest rule is applied, if the specificity is the same.
*Specificity order**: inline > id selector > class selector > tag selector > browser default***

***NOTE:** If the same property is defined inside the same type of selector, then the property which is defined at the last, will be used by the browser.*

Element Selector

The element selector will help us to select all elements with the same mentioned element name. This will select all the elements in the HTML document with the given name, but most of the time this is not our requirement. So, to apply styles to only some specific elements we need to have some restrictions. We will take a look on this later in this section only.

Syntax: `element { css declarations; }`

Eg., applying style to h2 tag like this:

```
<h1>Blue Color</h1>
```

and applying CSS like this:

```
h1 {
    color: blue;
}
```

will show on the browser like this:

Class Selector

Multiple elements with a specific class attribute are selected using the class selector. To select elements with a specific class, type a period (.) followed by the class name.

Syntax: `.class-name {css declarations; }`

To use the class selector, the **class attribute** is used in the element's opening tag. The value of the class attribute contains the name of the class. There can be **multiple classes** added to the tag by giving space in between.

Eg., defining the classes in the HTML file like this:

```
<p class="red">I am red1</p>
<p class="blue right">I am blue1</p>
<p class="red">I am red2</p>
<p class="blue right">I am blue2</p>
```

will show on the browser like this:

Id selector

The id selector will help us to select only one element with that specific id. We need to write a hash(#) character and then id name to select an element with a specific id.

Syntax: `#class-name{css declarations;}`

To make use of the id selector, the **id attribute** is defined in the element's opening tag. The value of the id attribute will have the name of the id. The id is **unique** on an HTML page. There can only be **one id** in the tag. If another element is having the same id, the styles would not be applied by the browser.

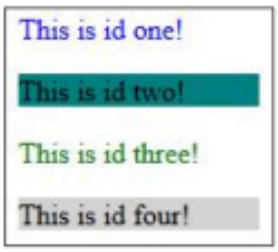
Eg., defining the ids in the HTML file like this:

```
<p id="one">This is id one!</p>
<p id="two">This is id two!</p>
<p id="three">This is id three!</p>
<p id="four">This is id four!</p>
```

and applying css like this:

```
#one {
    color: blue;
}
#two {
    background-color: teal;
}
#three {
    color: green;
}
```

```
#four {
    background-color: lightgrey;
}
```
will show on the browser like this:



Grouping Selectors

We usually use the same CSS for multiple elements, and we can't have too many classes. And too many classes would become difficult to manage.
So, CSS helps us with a grouping feature where you can define the CSS rules to multiple elements with the use of a combination of either class, tag, or id.
We **need to use a comma separator for the different selectors** for grouping.

Here are a few examples of how grouping can be used:

- `p, .class-name { CSS properties }` **-** apply styles to 'para' and element with class as 'class-name'
- `#id1, #id2, span { CSS properties }` **-** apply styles to 'span' and elements with ids as 'id1'and 'id2'
- `.class-name, #id1, div { CSS properties }` - apply styles to 'div' and elements with class 'class-name' and id as 'id1'

Nesting Selectors

Whenever we require to target elements inside a particular section of our HTML page. Instead of using the classes there, we can use nesting that works like a hierarchy and is easier to understand.

To use nesting, you need to **add space between the selectors**. Hence the sequence formed, represents a **hierarchy starting from the top**.

These are just a few examples:

- `.class-name span { CSS declarations }` - this will apply styles to only those 'span', which are present inside the element with class 'class-name'

- `#id1 .class-name span { CSS declarations }` - this will apply styles to only those 'span', which are present inside the element with class 'class-name' and 'class-name' is inside the element with id 'id1'

Chaining Selectors

There are times when we want to have the same class for multiple elements and we want to apply styles to them. In this scenario, we can use chaining selectors.

To use chaining we take help of the combination of selectors without putting any space in between them.
Eg., we have a class 'header-style' applied to every heading. We can apply different styles to them like this:

```
<html>
    <head>
        <style>
            .header-style{
                background-color: aqua;
                display: inline-block;
            }
        </style>
    </head>
    <body>
        <h1 class="header-style">Hi</h1>
        <h1 class="header-style">Hello</h1>
    </body>
</html>
```

Now, as the class **header-style** is given to both **<h1> tags**, we can apply styles to both of them together as done in the above example.