**Cascading Style Sheets (CSS)**

1. **CSS Introduction**

CSS is a language that describes the style of an HTML document.CSS describes how HTML elements should be displayed. World Wide Web Consortium (W3C) has created CSS.This tutorial will teach you CSS from basic to advanced.

**What is CSS?**

* CSS stands for Cascading Style Sheets
* CSS describes how HTML elements are to be displayed on screen, paper, or in other media
* CSS saves a lot of work. It can control the layout of multiple web pages all at once
* External stylesheets are stored in CSS files

## Why Use CSS?

CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.

***CSS Sample example***

<!DOCTYPE html>

<html>

<head>

<style>

body {

background-color: lightblue;

}

h1 {

color: white;

text-align: center;

}

p {

font-family: verdana;

font-size: 20px;

}

</style>

</head>

<body>

<h1>My First CSS Example</h1>

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

</body>

</html>

1. **CSS Syntax**

A CSS rule-set consists of a selector and a declaration block:



The selector points to the HTML element you want to style.

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.

A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces.

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

***Example :***

<!DOCTYPE html>

<html>

<head>

<style>

p {

color: red;

text-align: center;

} </style>

</head>

<body>

<p>Hello World!</p>

<p>These paragraphs are styled with CSS.</p>

</body>

</html>

## CSS Selectors

CSS selectors are used to "find" (or select) HTML elements based on their element name, id, class, attribute, and more.

## The element Selector

The element selector selects elements based on the element name.

You can select all <p> elements on a page like this (in this case, all <p> elements will be center-aligned, with a red text color):

**Example:**

<!DOCTYPE html>

<html>

<head>

<style>

p {

text-align: center;

color: red;

}

</style>

</head>

<body>

<p>Every paragraph will be affected by the style.</p>

<p id="para1">Me too!</p>

<p>And me!</p>

</body>

</html>

## The id Selector

The id selector uses the id attribute of an HTML element to select a specific element.

The id of an element should be unique within a page, so the id selector is used to select one unique element!

To select an element with a specific id, write a hash (#) character, followed by the id of the element.

The style rule below will be applied to the HTML element with id="para1":

<!DOCTYPE html>

<html>

<head>

<style>

#para1 {

text-align: center;

color: red;

}

</style>

</head>

<body>

<p id="para1">Hello World!</p>

<p>This paragraph is not affected by the style.</p>

</body>

</html>

## The class Selector

The class selector selects elements with a specific class attribute.

To select elements with a specific class, write a period (.) character, followed by the name of the class.

In the example below, all HTML elements with class="center" will be red and center-aligned:

<!DOCTYPE html>

<html>

<head>

<style>

.center {

text-align: center;

color: red;

}

</style>

</head>

<body>

<h1 class="center">Red and center-aligned heading</h1>

<p class="center">Red and center-aligned paragraph.</p>

</body>

</html>

You can also specify that only specific HTML elements should be affected by a class.

In the example below, only <p> elements with class="center" will be center-aligned:

<!DOCTYPE html>

<html>

<head>

<style>

p.center {

text-align: center;

color: red;

}

</style>

</head>

<body>

<h1 class="center">This heading will not be affected</h1>

<p class="center">This paragraph will be red and center-aligned.</p>

</body>

</html>

HTML elements can also refer to more than one class.

In the example below, the <p> element will be styled according to class="center" and to class="large":

<!DOCTYPE html>

<html>

<head>

<style>

p.center {

text-align: center;

color: red;

}

p.large {

font-size: 300%;

}

</style>

</head>

<body>

<h1 class="center">This heading will not be affected</h1>

<p class="center">This paragraph will be red and center-aligned.</p>

<p class="center large">This paragraph will be red, center-aligned, and in a large font-size.</p>

</body>

</html>

## Grouping Selectors

If you have elements with the same style definitions, like this:

<!DOCTYPE html>

<html>

<head>

<style>

h1, h2, p {

text-align: center;

color: red;

}

</style>

</head>

<body>

<h1>Hello World!</h1>

<h2>Smaller heading!</h2>

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

</body>

</html>

## CSS Comments

Comments are used to explain the code, and may help when you edit the source code at a later date.

Comments are ignored by browsers.

A CSS comment starts with /\* and ends with \*/. Comments can also span multiple lines:

<!DOCTYPE html>

<html>

<head>

<style>

p {

color: red;

/\* This is a single-line comment \*/

text-align: center;

}

/\* This is

a multi-line

comment \*/

</style>

</head>

<body>

<p>Hello World!</p>

<p>This paragraph is styled with CSS.</p>

<p>CSS comments are not shown in the output.</p>

</body>

</html>

# **CSS How To...**

## Three Ways to Insert CSS

There are three ways of inserting a style sheet:

* External style sheet
* Internal style sheet
* Inline style

## External Style Sheet

With an external style sheet, you can change the look of an entire website by changing just one file!

Each page must include a reference to the external style sheet file inside the <link> element. The <link> element goes inside the <head> section:

<!DOCTYPE html>

<html>

<head>

/\* rel – Relation, \*/

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

</head>

<body>

<h1>This is a heading</h1>

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

</body>

</html>

## Internal Style Sheet

An internal style sheet may be used if one single page has a unique style.

Internal styles are defined within the <style> element, inside the <head> section of an HTML page:

<!DOCTYPE html>

<html>

<head>

<style>

body {

background-color: linen;

}

h1 {

color: maroon;

margin-left: 40px;

}

</style>

</head>

<body>

<h1>This is a heading</h1>

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

</body>

</html>

## Inline Styles

An inline style may be used to apply a unique style for a single element.

To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

The example below shows how to change the color and the left margin of a <h1> element:

<!DOCTYPE html>

<html>

<body>

<h1 style="color:blue;margin-left:30px;">This is a heading</h1>

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

<h1>This is for testing</h1>

</body>

</html>

Cascading Order

What style will be used when there is more than one style specified for an HTML element?

Generally speaking we can say that all the styles will "cascade" into a new "virtual" style sheet by the following rules, where number one has the highest priority:

1. Inline style (inside an HTML element)
2. External and internal style sheets (in the head section)
3. Browser default

So, an inline style (inside a specific HTML element) has the highest priority, which means that it will override a style defined inside the <head> tag, or in an external style sheet, or a browser default value.

<!DOCTYPE html>

<html>

<head>

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

<style>

body {background-color: linen;}

</style>

</head>

<body style="background-color: lightcyan">

<h1>Multiple Styles Will Cascade into One</h1>

<p>In this example, the background color is set inline, in an internal stylesheet, and in an external stylesheet.</p>

<p>Try experimenting by removing styles to see how the cascading stylesheets work. (try removing the inline first, then the internal, then the external)</p>

</body>

</html>

# **CSS Colors**

Colors in CSS are most often specified by:

* a valid color name - like "red"
* an RGB value - like "rgb(255, 0, 0)"
* a HEX value - like "#ff0000"

## Color Names

Colors set by using color names:

<!DOCTYPE html>

<html>

<body>

<h2>Color Names Examples</h2>

<p>Note: You will learn more about the background-color and the color property later in our tutorial.</p>

<h2 style="background-color:red">

Red background-color

</h2>

<h2 style="background-color:green">

Green background-color

</h2>

<h2 style="background-color:blue;color:white">

Blue background-color and white text color

</h2>

<h2 style="background-color:orange">

Orange background-color

</h2>

<h2 style="background-color:yellow">

Yellow background-color

</h2>

<h2 style="background-color:cyan">

Cyan background-color

</h2>

<h2 style="background-color:black;color:white">

Black background-color and white text color

</h2>

</body>

</html>

## RGB (Red, Green, Blue)

<!DOCTYPE html>

<html>

<body>

<h2>RGB Color Examples</h2>

<h2 style="background-color:rgb(255, 0, 0)">

Background-color set by using rgb(255, 0, 0)

</h2>

<h2 style="background-color:rgb(0, 255, 0)">

Background-color set by using rgb(0, 255, 0)

</h2>

<h2 style="background-color:rgb(0, 0, 255)">

Background-color set by using rgb(0, 0, 255)

</h2>

<h2 style="background-color:rgb(255, 165, 0)">

Background-color set by using rgb(255, 165, 0)

</h2>

<h2 style="background-color:rgb(255, 255, 0)">

Background-color set by using rgb(255, 255, 0)

</h2>

<h2 style="background-color:rgb(0, 255, 255)">

Background-color set by using rgb(0, 255, 255)

</h2>

</body>

</html>

## Hexadecimal Colors

<!DOCTYPE html>

<html>

<body>

<h2>HEX Color Examples</h2>

<h2 style="background-color:#FF0000">

Background-color set by using #FF0000

</h2>

<h2 style="background-color:#00FF00">

Background-color set by using #00FF00

</h2>

<h2 style="background-color:#0000FF">

Background-color set by using #0000FF

</h2>

<h2 style="background-color:#FFA500">

Background-color set by using #FFA500

</h2>

<h2 style="background-color:#FFFF00">

Background-color set by using #FFFF00

</h2>

<h2 style="background-color:#00FFFF">

Background-color set by using #00FFFF

</h2>

</body>

</html>

# **CSS Backgrounds**

The CSS background properties are used to define the background effects for elements.

CSS background properties:

* background-color
* background-image
* background-repeat
* background-attachment
* background-position

## Background Color

The background-color property specifies the background color of an element.

The background color of a page is set like this:

<!DOCTYPE html>

<html>

<head>

<style>

body {

background-color: lightblue;

}

</style>

</head>

<body>

<h1>Hello World!</h1>

<p>This page has a light blue background color!</p>

</body>

</html>

## Background Image

The background-image property specifies an image to use as the background of an element.

By default, the image is repeated so it covers the entire element.

The background image for a page can be set like this:

<!DOCTYPE html>k

<html>

<head>

<style>

body {

background-image: url("paper.gif");

}

</style>

</head>

<body>

<h1>Hello World!</h1>

<p>This page has an image as the background!</p>

</body>

</html>

## Background Image - Repeat Horizontally or Vertically

By default, the background-image property repeats an image both horizontally and vertically.

Some images should be repeated only horizontally or vertically, or they will look strange, like this:

If the image above is repeated only horizontally (background-repeat: repeat-x;), the background will look better:

<!DOCTYPE html>

<html>

<head>

<style>

body {

background-image: url("gradient\_bg.png");

background-repeat: repeat-x;

}

</style>

</head>

<body>

<h1>Hello World!</h1>

<p>Here, a backgound image is repeated only horizontally!</p>

</body>

</html>

To repeat an image vertically, set background-repeat: repeat-y;

## Background Image - Set position and no-repeat

<!DOCTYPE html>

<html>

<head>

<style>

body {

background-image: url("img\_tree.png");

background-repeat: no-repeat;

}

</style>

</head>

<body>

<h1>Hello World!</h1>

<p>W3Schools background image example.</p>

<p>The background image is only showing once, but it is disturbing the reader!</p>

</body>

</html>

In the example above, the background image is shown in the same place as the text. We want to change the position of the image, so that it does not disturb the text too much.

The position of the image is specified by the background-position property:

<!DOCTYPE html>

<html>

<head>

<style>

body {

background-image: url("img\_tree.png");

background-repeat: no-repeat;

background-position: right top;

margin-right: 200px;

}

</style>

</head>

<body>

<h1>Hello World!</h1>

<p>W3Schools background no-repeat, set position example.</p>

<p>Now the background image is only shown once, and positioned away from the text.</p>

<p>In this example we have also added a margin on the right side, so the background image will never disturb the text.</p>

</body>

</html>

## Background Image - Fixed position

To specify that the background image should be fixed (will not scroll with the rest of the page), use the background-attachment property:

<!DOCTYPE html>

<html>

<head>

<style>

body {

background-image: url("img\_tree.png");

background-repeat: no-repeat;

background-position: right top;

margin-right: 200px;

background-attachment: fixed;

}

</style>

</head>

<body>

<h1>Hello World!</h1>

<p>The background-image is fixed. Try to scroll down the page.</p>

<p>The background-image is fixed. Try to scroll down the page.</p>

<p>The background-image is fixed. Try to scroll down the page.</p>

<p>The background-image is fixed. Try to scroll down the page.</p>

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<p>The background-image is fixed. Try to scroll down the page.</p>

<p>The background-image is fixed. Try to scroll down the page.</p>

<p>If you do not see any scrollbars, try to resize the browser window.</p>

</body>

</html>

## Background - Shorthand property

To shorten the code, it is also possible to specify all the background properties in one single property. This is called a shorthand property.

The shorthand property for background is background:

<!DOCTYPE html>

<html>

<head>

<style>

body {

background: #ffffff url("img\_tree.png") no-repeat right top;

margin-right: 200px;

}

</style>

</head>

<body>

<h1>Hello World!</h1>

<p>Now the background image is only shown once, and it is also positioned away from the text.</p>

<p>In this example we have also added a margin on the right side, so that the background image will not disturb the text.</p>

</body>

</html>