

Introduction to CSS



CSS is the acronym for 'Cascading Style Sheets'

CSS is an extension to basic HTML that allows to style the web pages

CSS can control many elements of the web pages like colors, fonts, alignment, borders, backgrounds, spacing, margins, and much more

You may create a custom style, set all its properties, give it a unique name and then 'tag' HTML to apply these stylistic properties

CSS3 is backward compatible with its earlier versions

CSS Syntax



The styles for each element, ID, or class used on the HTML page are defined in a CSS document.

Styles are wrapped with curly brackets.

Elements are declared with the element (HTML) tag

`h1{}`

IDs are declared with a pound sign and the ID name

`#title{ }`

Classes are declared with a period and the class name

`.text{ }`

Styles are written under `<style>` tag which is the child tag of `<head>`

CSS Syntax



What is inside the curly brackets?

The style `font-size` applies to all `<p>` tag inside the HTML page. The text inside the tag appears with size `12px`.

Example



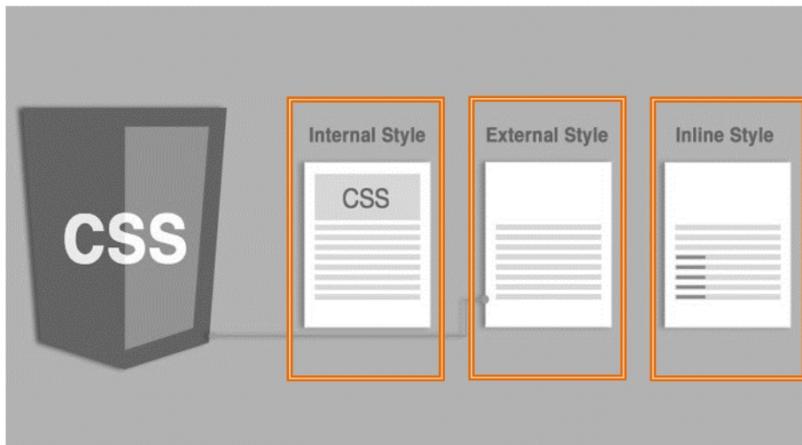
```
<!DOCTYPE HTML>
<html>
<head>
<style type="text/css">
    h1{
        color: #60A216;
    }
</style>
</head>
<body>
    <h1>Welcome to CSS</h1>
    This web page gives an introduction to CSS
</body>
</html>
```



Welcome to CSS

This web page gives an introduction to CSS

CSS Styling



Inline Style



The Style is declared inline in the html tag.

```
<!DOCTYPE HTML>
<html>
<head>
<style type="text/css">
    h1{
        color: #60A216;
    }
</style>
</head>
<h1 style="color: red;">Red Heading </h1>
<body style="background-color: lightblue;"> A Paragraph </body>
</html>
```



Red Heading

A Paragraph

Internal Style



The styles are defined within the `<style>` tag present inside the `<head>` tag of the HTML page

```
<head>
<style>
body {
    background-color: linen;
}
h1 {
    color: maroon;
    margin-left: 40px;
}
</style>
</head>
<body>
    <h1>HTML Page</h1>
        This is a paragraph
</body>
```

External Style

Inline Style

HTML Page

This is a paragraph

External Style



The CSS Styles are written in a separate file with a .css extension

The file can be written in any text editor

It cannot have any html tags

The CSS file is linked to the html page using the `<link>` tag under the `<head>` tag

Advantage of having external style is : A single file can be used to change the look of all the web pages of the application

MyCss.css

```
body {
    background-color: linen;
}
h1 {
    color: maroon;
    margin-left: 40px;
}
Index.html
<head>
<link rel="stylesheet" type="text/css"
      href="MyCss.css">
</head>
```

Text Formatting



```
<head>
<style type="text/css">
    #heading{
        color: #D62B00;
        text-align: center;
        text-decoration: underline;
        text-shadow: 5px 0px 3px #808080;
        word-spacing: 20px;
    }
    #content{
        text-indent: 20px;
        text-transform: capitalize;
        direction: ltr;
    }
</style>
</head>
```

CSS3 Text Effects



CSS3 Text Effects

- text-overflow
- word-wrap
- word-break

CSS3 is an extension to CSS. It contains additional features.

Text Overflow

- It shows how overflowed content that's not displayed in the page can be signaled to the user
- It can be clipped or rendered as an ellipsis

`p {word-wrap: break-word;}`

Word-wrap

- It allows long words to be broken and to be taken to next line

Word Breaking

- It specifies the rules for breaking lines

`p.x1 {word-break: keep-all;}`
`p.x2 {word-break: break-all;}`

Fonts



Sets fonts to the contents of the web page

Properties

- **font-family** : Used to change the face of a font
- **font-style** : Used to make a font italic or oblique
- **font-variant** : Used to create a small-caps effect
- **font-weight** : Used to increase or decrease how bold or light a font appears
- **font-size** : Used to increase or decrease the size of a font
- **font** : Used as shorthand to specify a number of other font properties

CSS Selectors



It selects any element in a page that matches the selector regardless of their position in the document tree.

`Element { property : value }`

Syntax

`h2 { color : green }`

Example to apply green color to all `<h2>` elements on the page

ID Selector

Selects the id attribute of the HTML element based on its value. ID value will be preceded by '#'

`#id_value{ style properties }`

Syntax

`# rollno { background-color: red }`

Example

Universal and Class Selector



- **Universal selector** is denoted by (*)
- It applies styles to each element in a page
- Specific css selectors matching elements will override the styles applied by '*'.

```
*{ font-family : Arial; }  
body { font-family : Corbel; }
```

Example

Class selector – It selects HTML elements having a specific class attribute. It is denoted by '.' followed by the class name.

```
.magenta  
{  
    color : magenta  
}
```

Example for applying style for all class attributes named *magenta*

Id Versus Class in CSS



IDs and classes function the same way – they both provide the same styling functionality to an HTML element, however

- **IDs are unique.** Each element can only have one ID, and that ID can only be on the page once.
- IDs can be used to style elements that are different from anything else on the page.
- **Classes are not unique;** an element can have multiple classes, and multiple elements can have the same class.
- Classes can be used to style multiple elements on a single page that need have things in common, like font size, color, or style

Adding Id And Class To HTML TAG



The id and class attributes are used along with the html tag

```
<html> <head>  
<style>  
#intro{  
    color: green;  
    margin-left: 40px;  
}  
.bordered{  
    width: 300px;  
    border: 1px solid #000;  
}  
</style> </head>  
<body>  
    <h1 id="intro">HTML Page</h1>  
    <p class="bordered"> Example to explain usage of id and class in CSS</p>  
</body>  
</html>
```

HTML Page

Example to explain usage of id and class in CSS

```
<html>  
<head>  
<style type="text/css">  
    .id{  
        color:#CC0000 ;  
    }  
</style>  
    <title>Untitled</title>  
</head>  
<body>  
    <h1 class="id">Welcome to CSS</h1>  
    <p>This web page gives an introduction to CSS</p>  
    <p class="id">CSS provides styles to the HTML page</p>  
</body>  
</html>
```

Welcome to CSS

This web page gives an introduction to CSS
CSS provides styles to the HTML page

Apply Styles



Styles mapped to a specific element.

```
<html>
<head>
<style type="text/css">
p.id{
    color:#CC0000 ;
}
</style>
<title>Untitled</title>
</head>
<body>
    <h1 class="id">Welcome to CSS</h1>
    <p>This web page gives an introduction to CSS</p>
    <p class="id">CSS provides styles to the HTML page</p>
</body>
</html>
```

Welcome to CSS

This web page gives an introduction to CSS
CSS provides styles to the HTML page

Applying same styles to many elements

```
<html>
<head>
<style type="text/css">
h1,p {
    color: #FF3300;
}
</style>
</head>
<body>
    <h1>Welcome to CSS</h1>
    <p>This web page gives an introduction to CSS</p>
    <p>CSS provides styles to the HTML page<br>The second line font will not change</p>
</body>
</html>
```

Welcome to CSS

This web page gives an introduction to CSS
CSS provides styles to the HTML page
The second line font will not change

CSS Background



Gives the HTML page a change in the background

CSS Properties for background

- **background-color** - Sets the background color of the HTML element
- **background-image** - Sets the background of an element with an image
- **background-repeat** -Repeats the background image
- **background-attachment**- Sets whether background image should be scrolled or fixed.
- **background-position**-Sets the starting position of the background image.
- **Background-size** - Specifies the size of background images

Example



```
<html>
<head>
<style type="text/css">
body{
    background-image: url ("css3logo.jpg");
    background-repeat: repeat-x;
    background-position: right top;
    background-attachment: fixed;
    background-size: 200px 100px;
}
h1 { background-color:#c0c0c0; }

</style>
</head>
<body>
    <br><br>
    <br><h1>CSS Background</h1>
</body>
</html>
```

Background properties



CSS3 Background



There are new additions to the Background Category in CSS3

- background-size
 - It is used for creating scalable graphics
- background-origin
 - It offers three locations to position background images
- background-clip
 - It allows background colors to be clipped to the contents of the box

Multiple Backgrounds in CSS3



Multiple Background images can be applied to elements

They are layered on top of each other

The background color must be included as the last background, since it will appear only as the last layer.

Multiple backgrounds can be specified using background-image property or using background shorthand property

Multiple Background Using Individual Background Properties



Multiple background images can be specified using **comma** separated list.

Example

Background-image: url(flower.jpg), url(marble.jpg)

A comma separated list can be used for other background properties like background-position, background-clip and so on.

Multiple backgrounds can be specified using the background shorthand property

Example

Background: url(bird.jpg) top left no-repeat,
url(cat.jpg) center bottom no-repeat

Example



```
<body>
  <div id="image2">
    content here
  </div>
</body>
<style>
  body{
    background-image: url(images/flower.png);
  }
  #image2{
    background-image:
    url(images/Dove.png);
    background-repeat: repeat-x;
  }
</style>
```

CSS Color Themes



CSS colors can
be specified
using the
types

- HSL colors
- RGB colors
- RGBA colors
- HSLA colors

RGB Color



It is specified with `rgb(red,green,blue)`

Each color defines the intensity of the color

Each color can contain integer values from 0 to 255 or percentage
from 0% to 100%

RGB color is supported by all modern browsers

To get blue color, red and green can be set to 0% and blue to 100%

Example for setting blue color using RGB - `rgb(0%,0%,100%)`

RGBA Color



The color transparency can also be set using RGBA

RGBA color values are supported in IE9+, Firefox 3+, Chrome, Safari, and in Opera 10+

Syntax:

`rgba(red, green, blue, alpha);`

Example:
`background-color: rgba(255, 0, 0, 1);`

- Red, Green and Blue color values can be specified between 0 to 255 or between 0% and 100% so that the desired color can be set
- Alpha value can be specified between 0.0 and 1.0 so that the color's opacity/transparency can be set. Here, 0.0 represents 'fully transparent' and 1.0 represents 'fully opaque'

RGBA Color



Converting Percentage to Integers

- To get the Integer equivalent, multiply the percentage value by 255 and then divide by 100%
- For example, `rgba(100%, 64.7%, 0, 1)` can also be written as `rgba(255, 165, 0, 1)`, which ultimately displays yellow color

Converting Integers to Percentages

- To get the Percentage equivalent, divide the integer by 255 and then multiply by 100%
- For example, `rgba(255, 0, 0, 1)` can also be written as `rgba(100%, 0%, 0%, 1)`, which ultimately displays red color

HSL Model



Colors can be defined in HSL(Hue-Saturation-Lightness) model using `hsl()` notation

Syntax : `background-color: hsl (hue, saturation, lightness)`

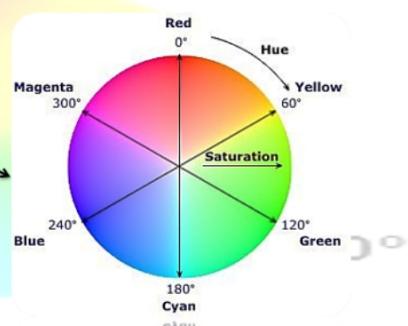
There are six major colors in the HSV color model

- Yellow, Cyan, Blue, Magenta, Red and Green

These colors are spaced by 60 degrees

Example : `background-color: hsl (120, 100%, 50%)`

`background-color: hsl (285, 100%, 50%)`



HSLA Model



Colors can be defined in HSLA (Hue-Saturation-Lightness-Alpha) Model

HSLA model can be represented using hsla() notation

It is an extension of HSL model with an alpha channel

Example :

```
h1 {  
    color: hsla(360,80%,50%,0.5);  
}  
p {  
    background-color: hsla(480,60%,30%,0.3);  
}
```

CSS Borders



Defines the style for the borders

Properties

- border-color
- border-style
- border-width
- border-image
- border-radius

Every property of the border can be separately defined for

- top
- left
- right
- bottom
- positions of the border

Example

```
<html>  
<head>  
<style type="text/css">  
#r1 {  
    border-radius: 25px;  
    background: #8AC007;  
    padding: 20px;  
    width: 200px;  
    height: 150px;  
}  
#r2 {  
    border-bottom-style: solid;  
    border-left-style: dotted;  
    border-right-style: dashed;  
    border-top-style: double;  
    border-bottom-color: #660066;  
    border-left-color: #FF0066;  
    border-right-color: #003300;  
    border-top-color: #FF0000;  
    border-bottom-width: medium;  
    border-left-width: thin;  
    border-right-width: medium;  
    border-top-width: thick;  
}  
</style>  
</head>  
<body>  
<p id="r1"> Rounded Corners </p>  
<p id="r2"> Example for CSS Borders </p>  
</body>  
</html>
```

Output:

Rounded Corners

Example for CSS Borders

Applying Shadows In Border



The box-shadow property can have comma separated list of values

Horizontal offset, vertical offset, optional blur distance, optional spread distance of the shadow

Example

```
box-shadow: 10px 10px;  
box-shadow: 10px 10px 5px  
#888;
```

CSS Margins



CSS margin properties are used to generate space around elements.

Margin properties

- margin-top
- margin-right
- margin-bottom
- margin-left

To set different margins for all four sides of a <div> tag:

```
div {  
    margin-top: 150px;  
    margin-bottom: 150px;  
    margin-right: 200px;  
    margin-left: 100px;  
}
```

Multi-column Layout



CSS3 has introduced the multi-column layout module for creating multiple column layouts in an easy and efficient way.

Create layouts like we see in magazines and newspapers without using the floating boxes.

Multi-
column
Layouts

Multi-column Properties:

- column-count
- column-gap
- column-rule-style
- column-rule-width
- column-rule-color
- column-rule
- column-span
- column-width

Multi-column Properties:



The **column-count** property specifies the number of columns that an element should be divided into.

The below example will divide the text in the `<p>` element into 3 columns:

```
p {  
    -webkit-column-count: 3; /* Chrome, Safari, Opera */  
    -moz-column-count: 3; /* Firefox */  
    column-count: 3;  
}
```

The **column-gap** property specifies the gap between the columns.

```
p {  
    -webkit-column-gap: 40px; /* Chrome, Safari, Opera */  
    -moz-column-gap: 40px; /* Firefox */  
    column-gap: 40px;  
}
```

The column-rule Property



column-rule-style property specifies the style of the rule between columns.

column-rule-width property specifies the width of the rule between columns.

column-rule-color property specifies the color of the rule between columns.

To set the width, style, and color of the rule all-together between columns:

```
p {  
    -webkit-column-rule: 1px solid lightblue;  
    -moz-column-rule: 1px solid lightblue;  
    column-rule: 1px solid lightblue;  
}
```

Example :



Output

```
<html> <head> <style type="text/css">  
p {  
    -webkit-column-count: 3;  
    -moz-column-count: 3;  
    column-count: 3;  
  
    -webkit-column-gap: 40px;  
    -moz-column-gap: 40px;  
    column-gap: 40px;  
  
    -webkit-column-rule: 1px solid lightblue;  
    -moz-column-rule: 1px solid lightblue;  
    column-rule: 1px solid lightblue;  
  
    -webkit-column-span: all;  
    column-span: all;  
}  
</style> </head> <body> <p>  
C-37 was a largely commercial flight as all but three passenger satellites, small nanosats, belonged to six other countries. The 29-minute launch went off precisely as planned; it took just 11 minutes from the release of the primary Cartosat-2 series spacecraft to the last launch of a client satellite, ISRO said after the mega-payload launch.  
The PSLV, in the category of launch vehicles that can lift relatively light loads to space, now marks 38 successful missions in a row out of a total of 39 flights. This time, it took to space a total of 1,378 kg, of which the primary satellite was 714 kg. The latest Cartosat is the fifth in the series of six Cartosat-2 spacecraft, starting from Cartosat-2 in 2007 and followed by what were earlier marked A, B, C, D and E. The last one is due.  
</p> </body> </html>
```