

# Table of Contents

---

About the Tutorial.....	
Audience .....	i
Prerequisites .....	i
Copyright & Disclaimer.....	i
Table of Contents .....	ii
<b>1. CSS – OVERVIEW .....</b>	<b>1</b>
<b>What is CSS?.....</b>	<b>1</b>
<b>Advantages of CSS.....</b>	<b>1</b>
<b>Who Creates and Maintains CSS?.....</b>	<b>1</b>
<b>CSS Versions.....</b>	<b>2</b>
<b>2. CSS – SYNTAX .....</b>	<b>3</b>
<b>The Type Selectors .....</b>	<b>3</b>
<b>The Universal Selectors .....</b>	<b>3</b>
<b>The Descendant Selectors .....</b>	<b>4</b>
<b>The Class Selectors .....</b>	<b>4</b>
<b>The ID Selectors .....</b>	<b>4</b>
<b>The Child Selectors.....</b>	<b>5</b>
<b>The Attribute Selectors .....</b>	<b>5</b>
<b>Multiple Style Rules .....</b>	<b>6</b>
<b>Grouping Selectors.....</b>	<b>6</b>
<b>3. CSS – INCLUSION .....</b>	<b>8</b>
<b>Embedded CSS - The &lt;style&gt; Element.....</b>	<b>8</b>
<b>Attributes.....</b>	<b>8</b>
<b>Inline CSS - The <i>style</i> Attribute .....</b>	<b>9</b>
<b>Attributes.....</b>	<b>9</b>

External CSS - The <link> Element .....	9
Attributes.....	10
Imported CSS - @import Rule.....	11
CSS Rules Overriding .....	11
Handling Old Browsers.....	12
CSS Comments .....	12
4. CSS – MEASUREMENT UNITS.....	13
5. CSS – COLORS.....	14
CSS Colors - Hex Codes .....	14
CSS Colors - Short Hex Codes.....	15
CSS Colors - RGB Values.....	16
Building Color Codes .....	16
Browser Safe Colors .....	16
6. CSS – BACKGROUND.....	20
7. CSS – FONTS.....	23
Set the Font Family .....	23
Set the Font Style .....	23
Set the Font Variant .....	24
Set the Font Weight .....	24
Set the Font Size.....	24
Set the Font Size Adjust.....	25
Set the Font Stretch .....	25
Shorthand Property.....	26
8. CSS – TEXT .....	27
Set the Text Color.....	27

	Set the Text Direction.....	28
	Set the Space between Characters .....	28
	Set the Space between Words.....	28
	Set the Text Indent.....	29
	Set the Text Alignment.....	29
	Decorating the Text.....	30
	Set the Text Cases .....	30
	Set the White Space between Text.....	31
	Set the Text Shadow .....	31
9.	CSS – IMAGES.....	32
	The Image Border Property .....	32
	The Image Height Property .....	32
	The Image Width Property .....	33
	The -moz-opacity Property.....	34
10.	CSS – LINKS.....	36
	Set the Color of Links.....	36
	Set the Color of Visited Links.....	37
	Change the Color of Links when Mouse is Over .....	37
	Change the Color of Active Links .....	37
11.	CSS – TABLES .....	38
	The order-collapse Property.....	38
	The border-spacing Property.....	39
	The caption-side Property .....	41
	The empty-cells Property .....	43
	The table-layout Property .....	44

12. CSS – BORDERS.....	46
The border-color Property.....	46
The border-style Property .....	47
The border-width Property .....	49
Border Properties Using Shorthand.....	50
13. CSS – MARGINS .....	52
The Margin Property .....	52
The margin-bottom Property .....	53
The margin-top Property.....	54
The margin-left Property .....	54
The margin-right Property.....	55
14. CSS – LISTS.....	56
The list-style-type Property.....	56
The list-style-position Property .....	59
The list-style-image Property .....	60
The list-style Property .....	61
The marker-offset Property.....	62
15. CSS – PADDINGS .....	63
The padding-bottom Property.....	63
The padding-top Property .....	64
The padding-left Property .....	64
The padding-right Property .....	65
The Padding Property.....	65
16. CSS – CURSORS.....	67

17. CSS – OUTLINES.....	70
The outline-width Property.....	70
The outline-style Property.....	71
The outline-color Property.....	72
The Outline Property.....	73
18. CSS – DIMENSION.....	74
The Height and Width Properties.....	74
The line-height Property.....	75
The max-height Property.....	75
The min-height Property.....	76
The max-width Property.....	77
The min-width Property.....	77
19. CSS – SCROLLBARS.....	79
20. CSS – VISIBILITY.....	81
21. CSS – POSITIONING.....	82
Relative Positioning.....	82
Absolute Positioning.....	82
Fixed Positioning.....	83
22. CSS – LAYERS.....	84
23. CSS – PSEUDO CLASSES.....	86
The :link pseudo-class.....	87
The :visited pseudo-class.....	87
The :hover pseudo-class.....	87
The :active pseudo-class.....	88
The :focus pseudo-class.....	88

The :first-child pseudo-class .....	88
The :lang pseudo-class .....	89
24. CSS – PSEUDO ELEMENTS.....	91
The :first-line pseudo-element .....	91
The :first-letter pseudo-element .....	92
The :before pseudo-element .....	92
The :after pseudo-element.....	93
25. CSS – @ RULES .....	95
The @import Rule .....	95
The @charset Rule .....	95
The @font-face Rule .....	96
The !important Rule .....	97
26. CSS – FILTERS.....	98
Alpha Channel.....	98
Motion Blur.....	99
Chroma Filter .....	101
Drop Shadow Effect.....	102
Flip Effect .....	103
Glow Effect.....	104
Grayscale Effect.....	105
Invert Effect .....	106
Mask Effect .....	107
Shadow Filter .....	108
Wave Effect.....	110
X-Ray Effect.....	111

27. CSS – MEDIA TYPES .....	112
The @media rule.....	112
The Document Language .....	112
Recognized Media Types .....	113
28. CSS – PAGED MEDIA.....	115
Defining Pages: The @page Rule .....	115
Setting Page Size .....	116
Left, Right, and First Pages .....	117
Controlling Pagination.....	118
Controlling Widows and Orphans.....	119
29. CSS – AURAL MEDIA .....	120
The azimuth Property.....	121
The elevation Property.....	122
The cue-after Property .....	123
The cue-before Property .....	123
The cue Property .....	124
The pause-after Property .....	124
The pause-before Property .....	124
The pause Property .....	124
The pitch Property .....	125
The pitch-range Property .....	125
The play-during Property .....	125
The richness Property.....	126
The speak Property .....	126
The speak-numeral Property.....	127
The speak-punctuation Property.....	127

	<b>The speech-rate Property</b> .....	<b>127</b>
	<b>The stress Property</b> .....	<b>127</b>
	<b>The voice-family Property</b> .....	<b>128</b>
	<b>The volume Property</b> .....	<b>128</b>
30.	<b>CSS – PRINTING</b> .....	<b>129</b>
31.	<b>CSS – LAYOUTS</b> .....	<b>130</b>
	<b>Sample Column Layout</b> .....	<b>131</b>
32.	<b>CSS – VALIDATIONS</b> .....	<b>134</b>
	<b>Why Validate Your HTML Code?</b> .....	<b>134</b>
33.	<b>CSS2 REFERENCE GUIDE</b> .....	<b>135</b>
	<b>Pseudo-classes &amp; Pseudo-elements</b> .....	<b>142</b>
34.	<b>COLOR REFERENCES</b> .....	<b>143</b>



# 1. CSS – OVERVIEW

## What is CSS?

---

**Cascading Style Sheets**, fondly referred to as **CSS**, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, as well as a variety of other effects.

CSS is easy to learn and understand but it provides a powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.

## Advantages of CSS

---

- **CSS saves time** - You can write CSS once and then reuse the same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many web pages as you want.
- **Pages load faster** - If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So, less code means faster download times.
- **Easy maintenance** - To make a global change, simply change the style, and all the elements in all the web pages will be updated automatically.
- **Superior styles to HTML** - CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
- **Multiple Device Compatibility** - Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cellphones or for printing.
- **Global web standards** – Now HTML attributes are being deprecated and it is being recommended to use CSS. So it's a good idea to start using CSS in all the HTML pages to make them compatible with future browsers.

## Who Creates and Maintains CSS?

---

CSS is created and maintained through a group of people within the W3C called the CSS Working Group. The CSS Working Group creates documents called **specifications**. When a specification has been discussed and officially ratified by the W3C members, it becomes a recommendation.

These ratified specifications are called recommendations because the W3C has no control over the actual implementation of the language. Independent companies and organizations create that software.

**NOTE:** The World Wide Web Consortium or W3C is a group that makes recommendations about how the Internet works and how it should evolve.

## CSS Versions

---

Cascading Style Sheets level 1 (CSS1) came out of W3C as a recommendation in December 1996. This version describes the CSS language as well as a simple visual formatting model for all the HTML tags.

CSS2 became a W3C recommendation in May 1998 and builds on CSS1. This version adds support for media-specific style sheets e.g. printers and aural devices, downloadable fonts, element positioning and tables.

## 2. CSS – SYNTAX

A CSS comprises of style rules that are interpreted by the browser and then applied to the corresponding elements in your document. A style rule is made of three parts:

- **Selector:** A selector is an HTML tag at which a style will be applied. This could be any tag like `<h1>` or `<table>` etc.
- **Property:** A property is a type of attribute of HTML tag. Put simply, all the HTML attributes are converted into CSS properties. They could be *color*, *border*, etc.
- **Value:** Values are assigned to properties. For example, *color* property can have the value either *red* or *#F1F1F1* etc.

You can put CSS Style Rule Syntax as follows:

```
selector { property: value }
```

**Example:** You can define a table border as follows:

```
table{ border :1px solid #C00; }
```

Here table is a selector and border is a property and the given value *1px solid #C00* is the value of that property.

You can define selectors in various simple ways based on your comfort. Let me put these selectors one by one.

### The Type Selectors

---

This is the same selector we have seen above. Again, one more example to give a color to all level 1 headings:

```
h1 {  
    color: #36CFFF;  
}
```

### The Universal Selectors

---

Rather than selecting elements of a specific type, the universal selector quite simply matches the name of any element type:

```
* {
  color: #000000;
}
```

This rule renders the content of every element in our document in black.

## The Descendant Selectors

---

Suppose you want to apply a style rule to a particular element only when it lies inside a particular element. As given in the following example, the style rule will apply to `<em>` element only when it lies inside the `<ul>` tag.

```
ul em {
  color: #000000;
}
```

## The Class Selectors

---

You can define style rules based on the class attribute of the elements. All the elements having that class will be formatted according to the defined rule.

```
.black {
  color: #000000;
}
```

This rule renders the content in black for every element with class attribute set to *black* in our document. You can make it a bit more particular. For example:

```
h1.black {
  color: #000000;
}
```

This rule renders the content in black for only `<h1>` elements with class attribute set to *black*.

You can apply more than one class selectors to a given element. Consider the following example:

```
<p class="center bold">
This para will be styled by the classes center and bold.
```

```
</p>
```

## The ID Selectors

---

You can define style rules based on the *id* attribute of the elements. All the elements having that *id* will be formatted according to the defined rule.

```
#black {  
  color: #000000;  
}
```

This rule renders the content in black for every element with *id* attribute set to *black* in our document. You can make it a bit more particular. For example:

```
h1#black {  
  color: #000000;  
}
```

This rule renders the content in black for only `<h1>` elements with *id* attribute set to *black*.

The true power of *id* selectors is when they are used as the foundation for descendant selectors. For example:

```
#black h2 {  
  color: #000000;  
}
```

In this example, all level 2 headings will be displayed in black color when those headings will lie within tags having *id* attribute set to *black*.

## The Child Selectors

---

You have seen the descendant selectors. There is one more type of selector, which is very similar to descendants but have different functionality. Consider the following example:

```
body > p {  
  color: #000000;  
}
```

This rule will render all the paragraphs in black if they are a direct child of the <body> element. Other paragraphs put inside other elements like <div> or <td> would not have any effect of this rule.

## The Attribute Selectors

---

You can also apply styles to HTML elements with particular attributes. The style rule below will match all the input elements having a type attribute with a value of *text*:

```
input[type="text"]{
  color: #000000;
}
```

The advantage to this method is that the <input type="submit" /> element is unaffected, and the color applied only to the desired text fields.

There are following rules applied to attribute selector.

- **p[lang]** - Selects all paragraph elements with a *lang* attribute.
- **p[lang="fr"]** - Selects all paragraph elements whose *lang* attribute has a value of exactly "fr".
- **p[lang~="fr"]** - Selects all paragraph elements whose *lang* attribute contains the word "fr".
- **p[lang|= "en"]** - Selects all paragraph elements whose *lang* attribute contains values that are exactly "en", or begin with "en-".

## Multiple Style Rules

---

You may need to define multiple style rules for a single element. You can define these rules to combine multiple properties and corresponding values into a single block as defined in the following example:

```
h1 {
  color: #36C;
  font-weight: normal;
  letter-spacing: .4em;
  margin-bottom: 1em;
  text-transform: lowercase;
}
```

Here all the property and value pairs are separated by a **semicolon (;)**. You can keep them in a single line or multiple lines. For better readability, we keep them in separate lines.

For a while, don't bother about the properties mentioned in the above block. These properties will be explained in the coming chapters and you can find the complete detail about properties in CSS References.

## Grouping Selectors

---

You can apply a style to many selectors if you like. Just separate the selectors with a comma, as given in the following example:

```
h1, h2, h3 {  
  color: #36C;  
  font-weight: normal;  
  letter-spacing: .4em;  
  margin-bottom: 1em;  
  text-transform: lowercase;  
}
```

This define style rule will be applicable to h1, h2 and h3 element as well. The order of the list is irrelevant. All the elements in the selector will have the corresponding declarations applied to them.

You can combine the various *class* selectors together as shown below:

```
#content, #footer, #supplement {  
  position: absolute;  
  left: 510px;  
  width: 200px;  
}
```

## 3. CSS – INCLUSION

There are four ways to associate styles with your HTML document. Most commonly used methods are inline CSS and External CSS.

### Embedded CSS - The <style> Element

---

You can put your CSS rules into an HTML document using the <style> element. This tag is placed inside the <head>...</head> tags. Rules defined using this syntax will be applied to all the elements available in the document. Here is the generic syntax:

```
<head>
<style type="text/css" media="...">
Style Rules
.....
</style>
</head>
```

### Attributes

---

Attributes associated with <style> elements are:

Attribute	Value	Description
type	text/css	Specifies the style sheet language as a content-type (MIME type). This is a required attribute.
media	screen tty tv projection handheld print braille	Specifies the device, the document will be displayed on. Default value is <i>all</i> . This is an optional attribute.



	aural all	
--	--------------	--

### Example

Following is an example of embed CSS based on the above syntax:

```
<head>
<style type="text/css" media="all">
h1{
color: #36C;
}
</style>
</head>
```

### Inline CSS - The *style* Attribute

You can use *style* attribute of any HTML element to define style rules. These rules will be applied to that element only. Here is the generic syntax:

```
<element style="...style rules...">
```

### Attributes

Attribute	Value	Description
style	style rules	The value of <i>style</i> attribute is a combination of style declarations separated by semicolon (;).

### Example

Following is the example of inline CSS based on the above syntax:

```
<h1 style ="color:#36C;"> This is inline CSS </h1>
```

It will produce the following result:

**This is inline CSS**

## External CSS - The <link> Element

The <link> element can be used to include an external stylesheet file in your HTML document.

An external style sheet is a separate text file with **.css** extension. You define all the Style rules within this text file and then you can include this file in any HTML document using <link> element.

Here is the generic syntax of including external CSS file:

```
<head>
<link type="text/css" href="..." media="..." />
</head>
```

## Attributes

Attributes associated with <style> elements are:

Attribute	Value	Description
type	text/css	Specifies the style sheet language as a content-type (MIME type). This attribute is required.
href	URL	Specifies the style sheet file having Style rules. This attribute is a required.
media	screen tty tv projection handheld print braille	Specifies the device the document will be displayed on. Default value is <i>all</i> . This is an optional attribute.

	aural all	
--	--------------	--

## Example

Consider a simple style sheet file with a name *mystyle.css* having the following rules:

```
h1, h2, h3 {  
  color: #36C;  
  font-weight: normal;  
  letter-spacing: .4em;  
  margin-bottom: 1em;  
  text-transform: lowercase;  
}
```

Now you can include this file *mystyle.css* in any HTML document as follows:

```
<head>  
<link type="text/css" href="mystyle.css" media="all" />  
</head>
```

## Imported CSS - @import Rule

@import is used to import an external stylesheet in a manner similar to the <link> element. Here is the generic syntax of @import rule.

```
<head>  
<@import "URL";  
</head>
```

Here URL is the URL of the style sheet file having style rules. You can use another syntax as well:

```
<head>
```

```
<@import url("URL");  
</head>
```

## Example

Following is the example showing you how to import a style sheet file into an HTML document:

```
<head>  
@import "mystyle.css";  
</head>
```

## CSS Rules Overriding

---

We have discussed four ways to include style sheet rules in an HTML document. Here is the rule to override any Style Sheet Rule.

- Any inline style sheet takes the highest priority. So, it will override any rule defined in `<style>...</style>` tags or the rules defined in any external style sheet file.
- Any rule defined in `<style>...</style>` tags will override the rules defined in any external style sheet file.
- Any rule defined in the external style sheet file takes the lowest priority, and the rules defined in this file will be applied only when the above two rules are not applicable.

## Handling Old Browsers

---

There are still many old browsers who do not support CSS. So, we should take care while writing our Embedded CSS in an HTML document. The following snippet shows how to use comment tags to hide CSS from older browsers:

```
<style type="text/css">  
<!--  
body, td {  
    color: blue;  
}  
-->  
</style>
```