CSS **Selectors**

A CSS selector selects the HTML element(s) you want to style.

CSS selectors are used to "find" (or select) the HTML elements you want to style.

We can divide CSS selectors into five categories:

Simple selectors (select elements based on name, id, class)

[Combinator selectors](https://www.w3schools.com/css/css_combinators.asp) (select elements based on a specific relationship between them)

[Pseudo-class selectors](https://www.w3schools.com/css/css_pseudo_classes.asp) (select elements based on a certain state)

[Pseudo-elements selectors](https://www.w3schools.com/css/css_pseudo_elements.asp) (select and style a part of an element)

[Attribute selectors](https://www.w3schools.com/css/css_attribute_selectors.asp) (select elements based on an attribute or attribute value)

The CSS element Selector

The element selector selects HTML elements based on the element name.

<!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 CSS id Selector

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

The id of an element is 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.

<!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>

**Note:** An id name cannot start with a number!

The CSS class Selector

The class selector selects HTML elements with a specific class attribute.

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

<!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.

Example

In this example only <p> elements with class="center" will be red and 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.

Example

In this example 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>

**Note:** A class name cannot start with a number!

The CSS Universal Selector

The universal selector (\*) selects all HTML elements on the page.

<!DOCTYPE html>

<html>

<head>

<style>

\* {

text-align: center;

color: blue;

}

</style>

</head>

<body>

<h1>Hello world!</h1>

<p>Every element on the page will be affected by the style.</p>

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

<p>And me!</p>

</body>

</html>

The CSS Grouping Selector

The grouping selector selects all the HTML elements with the same style definitions.

Look at the following CSS code (the h1, h2, and p elements have the same style definitions):

h1 {  
  text-align: center;  
  color: red;  
}  
  
h2 {  
  text-align: center;  
  color: red;  
}  
  
p {  
  text-align: center;  
  color: red;  
}

It will be better to group the selectors, to minimize the code.

To group selectors, separate each selector with a comma.

<!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 **Colors**

CSS Color Names

In CSS, a color can be specified by using a predefined color name:

<!DOCTYPE html>

<html>

<body>

<h1 style="background-color:Tomato;">Tomato</h1>

<h1 style="background-color:Orange;">Orange</h1>

<h1 style="background-color:DodgerBlue;">DodgerBlue</h1>

<h1 style="background-color:MediumSeaGreen;">MediumSeaGreen</h1>

<h1 style="background-color:Gray;">Gray</h1>

<h1 style="background-color:SlateBlue;">SlateBlue</h1>

<h1 style="background-color:Violet;">Violet</h1>

<h1 style="background-color:LightGray;">LightGray</h1>

</body>

</html>

CSS Background Color

You can set the background color for HTML elements:

<!DOCTYPE html>

<html>

<body>

<h1 style="background-color:DodgerBlue;">Hello World</h1>

<p style="background-color:Tomato;">

Lorem ipsum dolor sit amet, consectetueradipiscingelit, seddiamnonummynibheuismodtinciduntutlaoreet dolore magna aliquameratvolutpat.

Ut wisienim ad minim veniam, quisnostrudexercitationullamcorpersuscipitlobortisnislutaliquip ex eacommodoconsequat.

</p>

</body>

</html>

CSS Text Color

You can set the color of text:

<!DOCTYPE html>

<html>

<body>

<h3 style="color:Tomato;">Hello World</h3>

<p style="color:DodgerBlue;">Lorem ipsum dolor sit amet, consectetueradipiscingelit, seddiamnonummynibheuismodtinciduntutlaoreet dolore magna aliquameratvolutpat.</p>

<p style="color:MediumSeaGreen;">Ut wisienim ad minim veniam, quisnostrudexercitationullamcorpersuscipitlobortisnislutaliquip ex eacommodoconsequat.</p>

</body>

</html>

CSS Color Values

In CSS, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values:

<!DOCTYPE html>

<html>

<body>

<p>Same as color name "Tomato":</p>

<h1 style="background-color:rgb(255, 99, 71);">rgb(255, 99, 71)</h1>

<h1 style="background-color:#ff6347;">#ff6347</h1>

<h1 style="background-color:hsl(9, 100%, 64%);">hsl(9, 100%, 64%)</h1>

<p>Same as color name "Tomato", but 50% transparent:</p>

<h1 style="background-color:rgba(255, 99, 71, 0.5);">rgba(255, 99, 71, 0.5)</h1>

<h1 style="background-color:hsla(9, 100%, 64%, 0.5);">hsla(9, 100%, 64%, 0.5)</h1>

<p>In addition to the predefined color names, colors can be specified using RGB, HEX, HSL, or even transparent colors using RGBA or HSLA colorvalues.</p>

</body>

</html>

CSS **RGB Colors**

An RGB color value represents RED, GREEN, and BLUE light sources.

RGB Value

In CSS, a color can be specified as an RGB value, using this formula:

rgb(**red,** **green**, **blue**)

Each parameter (red, green, and blue) defines the intensity of the color between 0 and 255.

For example, rgb(255, 0, 0) is displayed as red, because red is set to its highest value (255) and the others are set to 0.

To display black, set all color parameters to 0, like this: rgb(0, 0, 0).

To display white, set all color parameters to 255, like this: rgb(255, 255, 255).

<!DOCTYPE html>

<html>

<body>

<h1>Specify colors using RGB values</h1>

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

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

<h2 style="background-color:rgb(60, 179, 113);">rgb(60, 179, 113)</h2>

<h2 style="background-color:rgb(238, 130, 238);">rgb(238, 130, 238)</h2>

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

<h2 style="background-color:rgb(106, 90, 205);">rgb(106, 90, 205)</h2>

</body>

</html>

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<!DOCTYPE html>

<html>

<body>

<h1>Shades of gray</h1>

<p>By using equal values for red, green, and blue, you will get different shades of gray:</p>

<h2 style="background-color:rgb(60, 60, 60);">rgb(60, 60, 60)</h2>

<h2 style="background-color:rgb(90, 90, 90);">rgb(90, 90, 90)</h2>

<h2 style="background-color:rgb(120, 120, 120);">rgb(120, 120, 120)</h2>

<h2 style="background-color:rgb(180, 180, 180);">rgb(180, 180, 180)</h2>

<h2 style="background-color:rgb(210, 210, 210);">rgb(210, 210, 210)</h2>

<h2 style="background-color:rgb(240, 240, 240);">rgb(240, 240, 240)</h2>

</body>

</html>

RGBA Value

RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity for a color.

An RGBA color value is specified with:

rgba(**red,** **green**, **blue, alpha**)

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

<!DOCTYPE html>

<html>

<body>

<h1>Make transparent colors with RGBA</h1>

<h2 style="background-color:rgba(255, 99, 71, 0);">rgba(255, 99, 71, 0)</h2>

<h2 style="background-color:rgba(255, 99, 71, 0.2);">rgba(255, 99, 71, 0.2)</h2>

<h2 style="background-color:rgba(255, 99, 71, 0.4);">rgba(255, 99, 71, 0.4)</h2>

<h2 style="background-color:rgba(255, 99, 71, 0.6);">rgba(255, 99, 71, 0.6)</h2>

<h2 style="background-color:rgba(255, 99, 71, 0.8);">rgba(255, 99, 71, 0.8)</h2>

<h2 style="background-color:rgba(255, 99, 71, 1);">rgba(255, 99, 71, 1)</h2>

</body>

</html>

CSS **HEX Colors**

A hexadecimal color is specified with: #RRGGBB, where the RR (red), GG (green) and BB (blue) hexadecimal integers specify the components of the color.

HEX Value

In CSS, a color can be specified using a hexadecimal value in the form:

#**rrggbb**

Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

For example, #ff0000 is displayed as red, because red is set to its highest value (ff) and the others are set to the lowest value (00).

To display black, set all values to 00, like this: #000000.

To display white, set all values to ff, like this: #ffffff.

<!DOCTYPE html>

<html>

<body>

<h1>Specify colors using HEX values</h1>

<h2 style="background-color:#ff0000;">#ff0000</h2>

<h2 style="background-color:#0000ff;">#0000ff</h2>

<h2 style="background-color:#3cb371;">#3cb371</h2>

<h2 style="background-color:#ee82ee;">#ee82ee</h2>

<h2 style="background-color:#ffa500;">#ffa500</h2>

<h2 style="background-color:#6a5acd;">#6a5acd</h2>

</body>

</html>

3 Digit HEX Value

Sometimes you will see a 3-digit hex code in the CSS source.

The 3-digit hex code is a shorthand for some 6-digit hex codes.

The 3-digit hex code has the following form:

#**rgb**

Where r, g, and b represents the red, green, and blue components with values between 0 and f.

The 3-digit hex code can only be used when both the values (RR, GG, and BB) are the same for each components. So, if we have #ff00cc, it can be written like this: #f0c.

<!DOCTYPE html>

<html>

<head>

<style>

body {

background-color: #fc9; /\* same as #ffcc99 \*/

}

h1 {

color: #f0f; /\* same as #ff00ff \*/

}

p {

color: #b58; /\* same as #bb5588 \*/

}

</style>

</head>

<body>

<h1>CSS 3-digit Hex Code</h1>

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

</body>

</html>

CSS **HSL Colors**

HSL stands for hue, saturation, and lightness.

HSL Value

In CSS, a color can be specified using hue, saturation, and lightness (HSL) in the form:

hsl(**hue**, **saturation**, **lightness**)

Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, and 240 is blue.

Saturation is a percentage value, 0% means a shade of gray, and 100% is the full color.

Lightness is also a percentage, 0% is black, 50% is neither light or dark, 100% is white

<!DOCTYPE html>

<html>

<body>

<h1>Specify colors using HSL values</h1>

<h2 style="background-color:hsl(0, 100%, 50%);">hsl(0, 100%, 50%)</h2>

<h2 style="background-color:hsl(240, 100%, 50%);">hsl(240, 100%, 50%)</h2>

<h2 style="background-color:hsl(147, 50%, 47%);">hsl(147, 50%, 47%)</h2>

<h2 style="background-color:hsl(300, 76%, 72%);">hsl(300, 76%, 72%)</h2>

<h2 style="background-color:hsl(39, 100%, 50%);">hsl(39, 100%, 50%)</h2>

<h2 style="background-color:hsl(248, 53%, 58%);">hsl(248, 53%, 58%)</h2>

</body>

</html>

Saturation

Saturation can be described as the intensity of a color.

100% is pure color, no shades of gray

50% is 50% gray, but you can still see the color.

0% is completely gray, you can no longer see the color.

<!DOCTYPE html>

<html>

<body>

<h1>HSL Saturation</h1>

<p>The second parameter of hsl() defines the saturation. Less saturation mean less color. 0% is completely gray:</p>

<h2 style="background-color:hsl(0, 100%, 50%);">hsl(0, 100%, 50%)</h2>

<h2 style="background-color:hsl(0, 80%, 50%);">hsl(0, 80%, 50%)</h2>

<h2 style="background-color:hsl(0, 60%, 50%);">hsl(0, 60%, 50%)</h2>

<h2 style="background-color:hsl(0, 40%, 50%);">hsl(0, 40%, 50%)</h2>

<h2 style="background-color:hsl(0, 20%, 50%);">hsl(0, 20%, 50%)</h2>

<h2 style="background-color:hsl(0, 0%, 50%);">hsl(0, 0%, 50%)</h2>

</body>

</html>

Lightness

The lightness of a color can be described as how much light you want to give the color, where 0% means no light (black), 50% means 50% light (neither dark nor light) 100% means full lightness (white).

<!DOCTYPE html>

<html>

<body>

<h1>HSL Lightness</h1>

<p>The third parameter of hsl() defines the lightness. 0% means black, and 100% means white:</p>

<h2 style="background-color:hsl(0, 100%, 0%);">hsl(0, 100%, 0%)</h2>

<h2 style="background-color:hsl(0, 100%, 25%);">hsl(0, 100%, 25%)</h2>

<h2 style="background-color:hsl(0, 100%, 50%);">hsl(0, 100%, 50%)</h2>

<h2 style="background-color:hsl(0, 100%, 75%);">hsl(0, 100%, 75%)</h2>

<h2 style="background-color:hsl(0, 100%, 90%);">hsl(0, 100%, 90%)</h2>

<h2 style="background-color:hsl(0, 100%, 100%);">hsl(0, 100%, 100%)</h2>

</body>

</html>

HSLA Value

HSLA color values are an extension of HSL color values with an alpha channel - which specifies the opacity for a color.

An HSLA color value is specified with:

hsla(**hue,** **saturation**, **lightness, alpha**)

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all)

<!DOCTYPE html>

<html>

<body>

<h1>Make transparent colors with HSLA</h1>

<h2 style="background-color:hsla(9, 100%, 64%, 0);">hsla(9, 100%, 64%, 0)</h2>

<h2 style="background-color:hsla(9, 100%, 64%, 0.2);">hsla(9, 100%, 64%, 0.2)</h2>

<h2 style="background-color:hsla(9, 100%, 64%, 0.4);">hsla(9, 100%, 64%, 0.4)</h2>

<h2 style="background-color:hsla(9, 100%, 64%, 0.6);">hsla(9, 100%, 64%, 0.6)</h2>

<h2 style="background-color:hsla(9, 100%, 64%, 0.8);">hsla(9, 100%, 64%, 0.8)</h2>

<h2 style="background-color:hsla(9, 100%, 64%, 1);">hsla(9, 100%, 64%, 1)</h2>

</body>

</html>

<DIV> tag

The <div> tag defines a division or a section in an HTML document.

The <div> tag is used as a container for HTML elements - which is then styled with CSS or manipulated with JavaScript.

The <div> tag is easily styled by using the class or id attribute.

Any sort of content can be put inside the <div> tag!

<!DOCTYPE html>

<html>

<head>

<style>

.myDiv {

border: 5px outset red;

background-color: lightblue;

text-align: center;

}

</style>

</head>

<body>

<h1>The div element</h1>

<div class="myDiv">

<h2>This is a heading in a div element</h2>

<p>This is some text in a div element.</p>

</div>

<p>This is some text outside the div element.</p>

</body>

</html>