**CSS (Cascading Style Sheet)**

CSS is the language we use to style (Formatting) an HTML document.

CSS describes how HTML elements (Tags) should be displayed.

**What is CSS?**

* **CSS** stands for **C**ascading **S**tyle **S**heets
* 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.**

## 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.

Multiple CSS declarations are separated with semicolons, and declaration blocks are surrounded by curly braces.

**Three Ways to Insert CSS**

There are three ways of inserting a style sheet:

* External CSS
* Internal CSS
* Inline CSS

## External CSS (Separate .CSS File)

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

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

SYNTAX:

<link href="Style1.css" rel="stylesheet" type="text/css">

## Internal CSS (In .html File)

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

The internal style is defined inside the <style> element, inside the head section.

## Inline CSS (Within html tag/element)

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.

Syntax:

<element style=”CSS PROPERTIES;“>

## Multiple Style Sheets

If some properties have been defined for the same selector (element) in different style sheets, the value from the last read style sheet will be used.

**Cascading Order**

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

All the styles in a page 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 has the highest priority, and will override external and internal styles and browser defaults.

**CSS Selectors**

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 (starts with element name like table)

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

EXAMPLE:

<style>

body {color:slateblue;}

p {color:red;}

div

{

color:darkgreen;

}

span

{

color:orange;

}

a

{

color:brown;

}

td

{

color:gold;

}

tr

{

color:firebrick;

}

table

{

color:darkmagenta;

}

</style>

## The CSS id Selector (Starts with #idname like #info)

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.

EXAMPLE:

#info

{

color:indigo;

}

#heading

{

color:maroon;

}

#p2

{

color:mediumblue;

}

## 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.

.box{

border:3px solid red;

background-color:pink;

color:blue;

text-align:center;}

**Note: .box class can be applied on any element but the below p.box class can only be applied on p elements.**

p.box

{

border:3px solid red;

background-color:pink;

color:blue;

text-align:center;

}

## The CSS Universal Selector

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

## The CSS Grouping Selector

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

## All CSS Simple Selectors

|  |  |  |
| --- | --- | --- |
| **Selector** | **Example** | **Example description** |
| [.*class*](https://www.w3schools.com/cssref/sel_class.asp) | .intro | Selects all elements with class="intro" |
| [#*id*](https://www.w3schools.com/cssref/sel_id.asp) | #firstname | Selects the element with id="firstname" |
| [\*](https://www.w3schools.com/cssref/sel_all.asp) | \* | Selects all elements |
| [*element*](https://www.w3schools.com/cssref/sel_element.asp) | p | Selects all <p> elements |
| [*element,element,..*](https://www.w3schools.com/cssref/sel_element_comma.asp) | div, p | Selects all <div> elements and all <p> elements |

# **CSS Colors**

Colors are specified using predefined color names, or RGB, HEX, HSL, RGBA, HSLA values

## CSS background-color

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

SYNTAX:

background-color:red;

## CSS 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.

SYNTAX:

background-image: url("paper.gif");

## CSS background-repeat

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:

background-repeat: repeat-x;

background-repeat: no-repeat;

background-repeat: repeat-y;

## CSS background-position

The background-position property is used to specify the position of the background image.

background-position: right;

value:right,left,top,bottom,center,middle

## CSS background-attachment

The background-attachment property specifies whether the background image should scroll or be fixed (will not scroll with the rest of the page):

background-attachment: scroll;

background-attachment: fixed;

## CSS 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.

Instead of writing:

body {  
  background-color: #ffffff;  
  background-image: url("img\_tree.png");  
  background-repeat: no-repeat;  
  background-position: right top;  
}

You can use the shorthand property background:  
background: #ffffff url("img\_tree.png") no-repeat right top;

When using the shorthand property the order of the property values is:

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

## CSS Border Properties

The CSS border properties allow you to specify the style, width, and color of an element's border.

CSS Border Style

The border-style property specifies what kind of border to display.

The following values are allowed:

* dotted - Defines a dotted border
* dashed - Defines a dashed border
* solid - Defines a solid border
* double - Defines a double border
* groove - Defines a 3D grooved border. The effect depends on the border-color value
* ridge - Defines a 3D ridged border. The effect depends on the border-color value
* inset - Defines a 3D inset border. The effect depends on the border-color value
* outset - Defines a 3D outset border. The effect depends on the border-color value
* none - Defines no border
* hidden - Defines a hidden border

The border-style property can have from one to four values (for the top border, right border, bottom border, and the left border).

border-style: dotted;

border-style: dotted solid;

border-style: dotted solid double dashed;

If the border-style property has four values:

* **border-style: dotted solid double dashed;**
  + top border is dotted
  + right border is solid
  + bottom border is double
  + left border is dashed

If the border-style property has three values:

* **border-style: dotted solid double;**
  + top border is dotted
  + right and left borders are solid
  + bottom border is double

If the border-style property has two values:

* **border-style: dotted solid;**
  + top and bottom borders are dotted
  + right and left borders are solid

If the border-style property has one value:

* **border-style: dotted;**
  + all four borders are dotted

## CSS Border - Individual Sides

From the examples on the previous pages, you have seen that it is possible to specify a different border for each side.

In CSS, there are also properties for specifying each of the borders (top, right, bottom, and left):

border-top-style: dotted;  
  border-right-style: solid;  
  border-bottom-style: dotted;  
  border-left-style: solid;

## CSS Border Width

The border-width property specifies the width of the four borders.

The width can be set as a specific size (in px, pt, cm, em, etc) or by using one of the three pre-defined values: thin, medium, or thick:

SYNTAX:

border-width: 5px; (this width will be applied to all sides of border)

border-width: 5px 20px; /\* 5px top and bottom, 20px on the sides \*/

border-width: 25px 10px 4px 35px; /\* 25px top, 10px right, 4px bottom and 35px left \*/

CSS Border Color

The border-color property is used to set the color of the four borders.

The color can be set by:

* name - specify a color name, like "red"
* HEX - specify a HEX value, like "#ff0000"
* RGB - specify a RGB value, like "rgb(255,0,0)"
* HSL - specify a HSL value, like "hsl(0, 100%, 50%)"
* transparent

**Note:** If border-color is not set, it inherits the color of the element.

border-color: red; (all border color)

border-color: red green blue yellow; /\* red top, green right, blue bottom and yellow left \*/

CSS Border - Shorthand Property

Like you saw in the previous page, there are many properties to consider when dealing with borders.

To shorten the code, it is also possible to specify all the individual border properties in one property.

The border property is a shorthand property for the following individual border properties:

* border-width
* border-style (required)
* border-color

border: 5px solid red;

border-left: 6px solid red;

border-bottom: 6px solid red;

border-top: 6px solid red;

border-right: 6px solid red;

## CSS Rounded Borders

The border-radius property is used to add rounded borders to an element:

border-radius: 5px;

## All CSS Border Properties

|  |  |
| --- | --- |
| **Property** | **Description** |
| [border](https://www.w3schools.com/cssref/pr_border.asp) | Sets all the border properties in one declaration |
| [border-bottom](https://www.w3schools.com/cssref/pr_border-bottom.asp) | Sets all the bottom border properties in one declaration |
| [border-bottom-color](https://www.w3schools.com/cssref/pr_border-bottom_color.asp) | Sets the color of the bottom border |
| [border-bottom-style](https://www.w3schools.com/cssref/pr_border-bottom_style.asp) | Sets the style of the bottom border |
| [border-bottom-width](https://www.w3schools.com/cssref/pr_border-bottom_width.asp) | Sets the width of the bottom border |
| [border-color](https://www.w3schools.com/cssref/pr_border-color.asp) | Sets the color of the four borders |
| [border-left](https://www.w3schools.com/cssref/pr_border-left.asp) | Sets all the left border properties in one declaration |
| [border-left-color](https://www.w3schools.com/cssref/pr_border-left_color.asp) | Sets the color of the left border |
| [border-left-style](https://www.w3schools.com/cssref/pr_border-left_style.asp) | Sets the style of the left border |
| [border-left-width](https://www.w3schools.com/cssref/pr_border-left_width.asp) | Sets the width of the left border |
| [border-radius](https://www.w3schools.com/cssref/css3_pr_border-radius.asp) | Sets all the four border-\*-radius properties for rounded corners |
| [border-right](https://www.w3schools.com/cssref/pr_border-right.asp) | Sets all the right border properties in one declaration |
| [border-right-color](https://www.w3schools.com/cssref/pr_border-right_color.asp) | Sets the color of the right border |
| [border-right-style](https://www.w3schools.com/cssref/pr_border-right_style.asp) | Sets the style of the right border |
| [border-right-width](https://www.w3schools.com/cssref/pr_border-right_width.asp) | Sets the width of the right border |
| [border-style](https://www.w3schools.com/cssref/pr_border-style.asp) | Sets the style of the four borders |
| [border-top](https://www.w3schools.com/cssref/pr_border-top.asp) | Sets all the top border properties in one declaration |
| [border-top-color](https://www.w3schools.com/cssref/pr_border-top_color.asp) | Sets the color of the top border |
| [border-top-style](https://www.w3schools.com/cssref/pr_border-top_style.asp) | Sets the style of the top border |
| [border-top-width](https://www.w3schools.com/cssref/pr_border-top_width.asp) | Sets the width of the top border |
| [border-width](https://www.w3schools.com/cssref/pr_border-width.asp) | Sets the width of the four borders |

## 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 is placed inside the <style> element, and starts with /\* and ends with \*/

## CSS Margins

The CSS margin properties are used to create space around elements, outside of any defined borders.

With CSS, you have full control over the margins. There are properties for setting the margin for each side of an element (top, right, bottom, and left).

Margin - Individual Sides

CSS has properties for specifying the margin for each side of an element:

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

All the margin properties can have the following values:

* auto - the browser calculates the margin
* *length* - specifies a margin in px, pt, cm, etc.
* *%* - specifies a margin in % of the width of the containing element
* inherit - specifies that the margin should be inherited from the parent element

margin-top: 100px;  
  margin-bottom: 100px;  
  margin-right: 150px;  
  margin-left: 80px;

Margin - Shorthand Property

To shorten the code, it is possible to specify all the margin properties in one property.

The margin property is a shorthand property for the following individual margin properties:

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

So, here is how it works:

If the margin property has four values:

* **margin: 25px 50px 75px 100px;**
  + top margin is 25px
  + right margin is 50px
  + bottom margin is 75px
  + left margin is 100px

If the margin property has three values:

* **margin: 25px 50px 75px;**
  + top margin is 25px
  + right and left margins are 50px
  + bottom margin is 75px

If the margin property has two values:

* **margin: 25px 50px;**
  + top and bottom margins are 25px
  + right and left margins are 50px

If the margin property has one value:

* **margin: 25px;**
  + all four margins are 25px

CSS Padding

The CSS padding properties are used to generate space around an element's content, inside of any defined borders.

With CSS, you have full control over the padding. There are properties for setting the padding for each side of an element (top, right, bottom, and left).

Padding - Individual Sides

CSS has properties for specifying the padding for each side of an element:

* padding-top
* padding-right
* padding-bottom
* padding-left

All the padding properties can have the following values:

* *length* - specifies a padding in px, pt, cm, etc.
* *%* - specifies a padding in % of the width of the containing element
* inherit - specifies that the padding should be inherited from the parent element

**Note:** Negative values are not allowed.

padding-top: 50px;  
  padding-right: 30px;  
  padding-bottom: 50px;  
  padding-left: 80px;

Padding - Shorthand Property

To shorten the code, it is possible to specify all the padding properties in one property.

The padding property is a shorthand property for the following individual padding properties:

* padding-top
* padding-right
* padding-bottom
* padding-left

So, here is how it works:

If the padding property has four values:

* **padding: 25px 50px 75px 100px;**
  + top padding is 25px
  + right padding is 50px
  + bottom padding is 75px
  + left padding is 100px

If the padding property has three values:

* **padding: 25px 50px 75px;**
  + top padding is 25px
  + right and left paddings are 50px
  + bottom padding is 75px

If the padding property has two values:

* **padding: 25px 50px;**
  + top and bottom paddings are 25px
  + right and left paddings are 50px

If the padding property has one value:

* **padding: 25px;**
  + all four paddings are 25px

## CSS Setting height and width

The height and width properties are used to set the height and width of an element.

The height and width properties do not include padding, borders, or margins. It sets the height/width of the area inside the padding, border, and margin of the element.

height: 200px;  
width: 50%;

## CSS Outline

An outline is a line that is drawn around elements, OUTSIDE the borders, to make the element "stand out".

CSS has the following outline properties:

* outline-style
* outline-color
* outline-width
* outline-offset
* outline

CSS Outline Style

The outline-style property specifies the style of the outline, and can have one of the following values:

* dotted - Defines a dotted outline
* dashed - Defines a dashed outline
* solid - Defines a solid outline
* double - Defines a double outline
* groove - Defines a 3D grooved outline
* ridge - Defines a 3D ridged outline
* inset - Defines a 3D inset outline
* outset - Defines a 3D outset outline
* none - Defines no outline
* hidden - Defines a hidden outline

## Text Alignment

The text-align property is used to set the horizontal alignment of a text.

A text can be left or right aligned, centered, or justified.

text-align: center;

## Text Direction

The direction and unicode-bidi properties can be used to change the text direction of an element:

direction: rtl;  
ltr

## Vertical Alignment

The vertical-align property sets the vertical alignment of an element.

vertical-align: top;

vertical-align: middle;

vertical-align: bottom;

## Text Decoration

The text-decoration property is used to set or remove decorations from text.

The value text-decoration: none; is often used to remove underlines from links:

text-decoration: overline;

text-decoration: line-through;

text-decoration: underline;

text-decoration: none;

## Text Transformation

The text-transform property is used to specify uppercase and lowercase letters in a text.

It can be used to turn everything into uppercase or lowercase letters, or capitalize the first letter of each word:

text-transform: uppercase;

text-transform: lowercase;

text-transform: capitalize;

## Text Indentation

The text-indent property is used to specify the indentation of the first line of a text:

## Letter Spacing

The letter-spacing property is used to specify the space between the characters in a text.

letter-spacing: 3px;

letter-spacing: -3px;

## Line Height

The line-height property is used to specify the space between lines:

line-height: 0.8;

## Word Spacing

The word-spacing property is used to specify the space between the words in a text.

word-spacing: 10px;

word-spacing: -10px;

## White Space

The white-space property specifies how white-space inside an element is handled.

white-space: nowrap;

## Text Shadow

The text-shadow property adds shadow to text.

In its simplest use, you only specify the horizontal shadow (2px) and the vertical shadow (2px):

text-shadow: 2px 2px;

text-shadow: 2px 2px red;

add a blur effect (5px) to the shadow

text-shadow: 2px 2px 5px red;

## Font Family

The font family of a text is set with the font-family property.

The font-family property should hold several font names as a "fallback" system. If the browser does not support the first font, it tries the next font, and so on.

Start with the font you want, and end with a generic family, to let the browser pick a similar font in the generic family, if no other fonts are available

**Note**: If the name of a font family is more than one word, it must be in quotation marks, like: "Times New Roman".

font-family: "Times New Roman", Times, serif;

## Google Fonts

<link href='https://fonts.googleapis.com/css?family=ABeeZee' rel='stylesheet'>

Font Style

The font-style property is mostly used to specify italic text.

This property has three values:

* normal - The text is shown normally
* italic - The text is shown in italics
* oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

font-style: normal;

## Font Weight

The font-weight property specifies the weight of a font:

font-weight: normal;

font-weight: bold;

## Font Variant

The font-variant property specifies whether or not a text should be displayed in a small-caps font.

In a small-caps font, all lowercase letters are converted to uppercase letters. However, the converted uppercase letters appears in a smaller font size than the original uppercase letters in the text.

font-variant: normal;

font-variant: small-caps;

Font Size

The font-size property sets the size of the text.

Being able to manage the text size is important in web design. However, you should not use font size adjustments to make paragraphs look like headings, or headings look like paragraphs.

Always use the proper HTML tags, like <h1> - <h6> for headings and <p> for paragraphs.

The font-size value can be an absolute, or relative size.

Absolute size:

* Sets the text to a specified size
* Does not allow a user to change the text size in all browsers (bad for accessibility reasons)
* Absolute size is useful when the physical size of the output is known

Relative size:

* Sets the size relative to surrounding elements
* Allows a user to change the text size in browsers

**Note:** If you do not specify a font size, the default size for normal text, like paragraphs, is 16px (16px=1em).

font-size: 40px;

font-size: 2.5em; /\* 40px/16=2.5em \*/

**font-size:10vw**

Viewport is the browser window size. 1vw = 1% of viewport width. If the viewport is 50cm wide, 1vw is 0.5cm.

Font Property

To shorten the code, it is also possible to specify all the individual font properties in one property.

The font property is a shorthand property for:

* font-style
* font-variant
* font-weight
* font-size/line-height
* font-family

font: 20px Arial, sans-serif; /\*20px=font-size , font-family\*/

font: italic small-caps bold 12px/30px Georgia, serif; /\*style, variant, weight, font-size/line-height, font-family \*/

**Note:** The font-size and font-family values are required. If one of the other values is missing, their default value are used.

## Styling Links

## Links can be styled with any CSS property (e.g. color, font-family, background, etc.).

In addition, links can be styled differently depending on what **state** they are in.

The four links states are:

* a:link - a normal, unvisited link
* a:visited - a link the user has visited
* a:hover - a link when the user mouses over it
* a:active - a link the moment it is clicked

Display:none;

display: inline;

display: block;

visibility:hidden; also hides an element.

However, the element will still take up the same space as before. The element will be hidden, but still affect the layout:

The position Property

The position property specifies the type of positioning method used for an element.

There are five different position values:

* static
* relative
* fixed
* absolute
* sticky

Elements are then positioned using the top, bottom, left, and right properties. However, these properties will not work unless the position property is set first. They also work differently depending on the position value.

CSS Overflow

The overflow property specifies whether to clip the content or to add scrollbars when the content of an element is too big to fit in the specified area.

The overflow property has the following values:

* visible - Default. The overflow is not clipped. The content renders outside the element's box
* hidden - The overflow is clipped, and the rest of the content will be invisible
* scroll - The overflow is clipped, and a scrollbar is added to see the rest of the content
* auto - Similar to scroll, but it adds scrollbars only when necessary