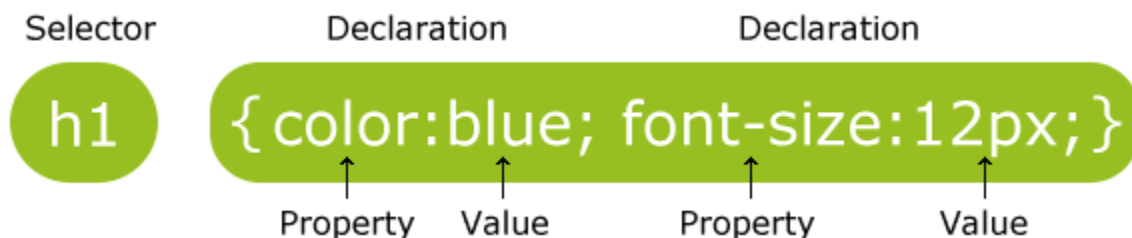# CSS (Chapter 1)

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 and Selectors

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:

The id Selector

```
<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>
```

<div style="text-align: center; color: red;">Hello World!</div>

This paragraph is not affected by the style.

The class Selector

```
<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>
```

Red and center-aligned heading

Red and center-aligned paragraph.

```
<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>
```

This heading will not be affected

This paragraph will be red and center-aligned.

Grouping Selectors

```
<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>

Hello World!

Smaller heading!

This is a paragraph.

CSS Comments

```
<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>
```

Hello World!

This paragraph is styled with CSS.

CSS comments are not shown in the output.

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

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

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
```

```css
body {

background-color: lig
htblue;
}

h1 {
    color: navy;

margin-left: 20px;
}
```

This is a heading

This is a paragraph.

Internal Style Sheet

```
<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>
```


Inline Styles

```
<body>

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

</body>
```


Multiple Style Sheets

```
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
<style>
h1 {
    color: orange;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
```

<p>The style of this document is a combination of an external stylesheet, and internal style</p>

</body>

This is a heading

The style of this document is a combination of an external stylesheet, and internal style

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.

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

<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>
```

Color Names Examples

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

Red background-color

Green background-color

Blue background-color and white text color

Orange background-color

Yellow background-color

Cyan background-color

Black background-color and white text color

RGB (Red, Green, Blue)

<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>

RGB Color Examples

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

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

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

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

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

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

Hexadecimal Colors

<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>

HEX Color Examples

Background-color set by using #FF0000

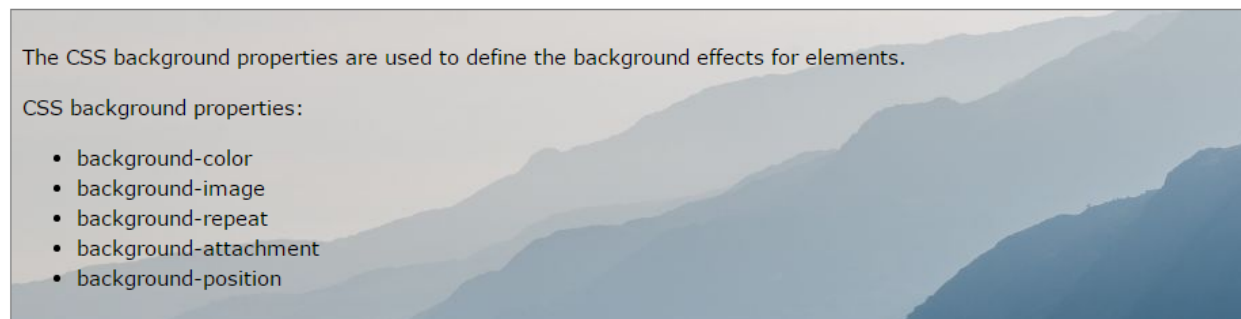Background-color set by using #00FF00

Background-color set by using #0000FF

Background-color set by using #FFA500

Background-color set by using #FFFF00

Background-color set by using #00FFFF

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

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

```
<head>
<style>
body {
    background-color: lightblue;
}
</style>
</head>
<body>

<h1>Hello World!</h1>

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

</body>
```



```
<head>
<style>
h1 {
    background-color: green;
}

div {
    background-color: lightblue;
}
```

```
p {
    background-color: yellow;
}
</style>
</head>
<body>

<h1>CSS background-color example!</h1>
<div>
This is a text inside a div element.
<p>This paragraph has its own background color.</p>
We are still in the div element.
</div>

</body>
```


Background Image

```
<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>
```

Background Image – Repeat Horizontally or Vertically

```
<head>
<style>
body {
    background-image: url("gradient_bg.png");
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<p>Strange background image...</p>

</body>
```



```
<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>
```


Background Image – Set position and no–repeat

```
<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>
```

Hello World!

W3Schools background image example.

The background image is only showing once, but it is disturbing the reader!

```
<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>
```

Hello World!

W3Schools background no-repeat, set position example.

Now the background image is only shown once, and positioned away from the text.

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

Background Image – Fixed position

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

Hello World!

The background-image is fixed. Try to scroll down the page.

The background-image is fixed. Try to scroll down the page.

The background-image is fixed. Try to scroll down the page.

The background-image is fixed. Try to scroll down the page.

The background-image is fixed. Try to scroll down the page.

The background-image is fixed. Try to scroll down the page.

The background-image is fixed. Try to scroll down the page.

The background-image is fixed. Try to scroll down the page.

The background-image is fixed. Try to scroll down the page.

All CSS Background Properties

Property	Description
background	Sets all the background properties in one declaration
background-attachment	Sets whether a background image is fixed or scrolls with the rest of the page
background-color	Sets the background color of an element
background-image	Sets the background image for an element
background-position	Sets the starting position of a background image
background-repeat	Sets how a background image will be repeated

CSS Border Properties

I have borders on all sides.

I have a red bottom border

I have rounded borders.

I have a blue left border.

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).

```
<head>
<style>
p.dotted {border-style: dotted;}
p.dashed {border-style: dashed;}
p.solid {border-style: solid;}
p.double {border-style: double;}
```

```
p.groove {border-style: groove;}
p.ridge {border-style: ridge;}
p.inset {border-style: inset;}
p.outset {border-style: outset;}
p.none {border-style: none;}
p.hidden {border-style: hidden;}
p.mix {border-style: dotted dashed solid double;}
</style>
</head>
<body>

<h2>The border-style Property</h2>
<p>This property specifies what kind of border to display:</p>

<p class="dotted">A dotted border.</p>
<p class="dashed">A dashed border.</p>
<p class="solid">A solid border.</p>
<p class="double">A double border.</p>
<p class="groove">A groove border.</p>
<p class="ridge">A ridge border.</p>
<p class="inset">An inset border.</p>
<p class="outset">An outset border.</p>
<p class="none">No border.</p>
<p class="hidden">A hidden border.</p>
<p class="mix">A mixed border.</p>

</body>
```

The border-style Property

This property specifies what kind of border to display:

A dotted border.

A dashed border.

A solid border.

A double border.

A groove border.

A ridge border.

An inset border.

An outset border.

No border.

A hidden border.

A mixed border.

Border Width

```
<head>
<style>
p.one {
    border-style: solid;
    border-width: 5px;
}

p.two {
    border-style: solid;
    border-width: medium;
}

p.three {
    border-style: dotted;
    border-width: 2px;
}
```

```
p.four {
    border-style: dotted;
    border-width: thick;
}

p.five {
    border-style: double;
    border-width: 15px;
}

p.six {
    border-style: double;
    border-width: thick;
}

p.seven {
    border-style: solid;
    border-width: 2px 10px 4px 20px;
}
</style>
</head>
<body>

<h2>The border-width Property</h2>
<p>This property specifies the width of the four borders:</p>

<p class="one">Some text.</p>
<p class="two">Some text.</p>
<p class="three">Some text.</p>
<p class="four">Some text.</p>
<p class="five">Some text.</p>
<p class="six">Some text.</p>
<p class="seven">Some text.</p>

<p><b>Note:</b> The "border-width" property does not work if it is used alone.
Always specify the "border-style" property to set the borders first.</p>

</body>
```
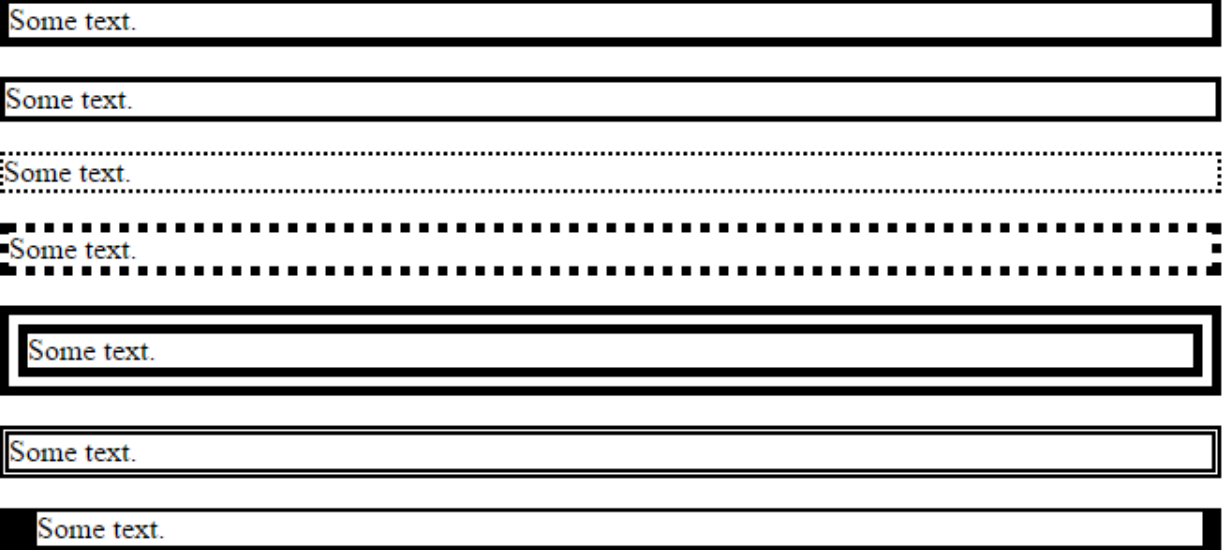
The border-width Property

This property specifies the width of the four borders:

Some text.

Some text.

Some text.

Some text.

Some text.

Some text.

Some text.

Note: The "border-width" property does not work if it is used alone. Always specify the "border-style" property to set the borders first.

Border Color

```
<head>
<style>
p.one {
    border-style: solid;
    border-color: red;
}

p.two {
    border-style: solid;
    border-color: green;
}

p.three {
    border-style: solid;
    border-color: red green blue yellow;
}
</style>
</head>
<body>

<h2>The border-color Property</h2>
```

```
<p>This property specifies the color of the four borders:</p>

<p class="one">A solid red border</p>
<p class="two">A solid green border</p>
<p class="three">A solid multicolor border</p>
<p><b>Note:</b> The "border-color" property does not work if it is used alone. Use the "border-style"
property to set the borders first.</p>

</body>
```

The border-color Property

This property specifies the color of the four borders:

A solid red border

A solid green border

A solid multicolor border

Note: The "border-color" property does not work if it is used alone. Use the "border-style" property to set the borders first.

Border – Individual Sides

```
<head>
<style>
p {
    border-top-style: dotted;
    border-right-style: solid;
    border-bottom-style: dotted;
    border-left-style: solid;
}
</style>
</head>
<body>

<p>2 different border styles.</p>

</body>
```

2 different border styles.

```
<head>
<style>
p {
```

```
        border: 5px solid red;
}
</style>
</head>
<body>

<h2>The border Property</h2>

<p>This property is a shorthand property for border-width, border-style, and border-color.</p>

</body>
```

The border Property

This property is a shorthand property for border-width, border-style, and border-color.

Left Border

```
<head>
<style>
p {
        border-left: 6px solid red;
        background-color: lightgrey;
}
</style>
</head>
<body>

<h2>The border-left Property</h2>
<p>This property is a shorthand property for border-left-width, border-left-style, and border-left-color.</p>

</body>
```

The border-left Property

This property is a shorthand property for border-left-width, border-left-style, and border-left-color.

```
<head>
<style>
p {
        border-bottom: 6px solid red;
        background-color: lightgrey;
}
</style>
```

```
</head>
<body>

<h2>The border-bottom Property</h2>
<p>This property is a shorthand property for border-bottom-width, border-bottom-style, and
border-bottom-color.</p>

</body>
```

The border-bottom Property

This property is a shorthand property for border-bottom-width, border-bottom-style, and border-bottom-color.

Rounded Borders

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

Normal border

Round border

Rounder border

Roundest border

```
<head>
<style>
p.normal {
    border: 2px solid red;
}

p.round1 {
    border: 2px solid red;
    border-radius: 5px;
}

p.round2 {
    border: 2px solid red;
    border-radius: 8px;
}

p.round3 {
    border: 2px solid red;
    border-radius: 12px;
}
</style>
</head>
```

```
<body>

<h2>The border-radius Property</h2>
<p>This property is used to add rounded borders to an element:</p>

<p class="normal">Normal border</p>
<p class="round1">Round border</p>
<p class="round2">Rounder border</p>
<p class="round3">Roundest border</p>

<p><b>Note:</b> The "border-radius" property is not supported in IE8 and earlier versions.</p>

</body>
```

The border-radius Property

This property is used to add rounded borders to an element:

Normal border

Round border

Rounder border

Roundest border

Note: The "border-radius" property is not supported in IE8 and earlier versions.

CSS Margins

The CSS `margin` properties are used to generate space around elements.

The `margin` properties set the size of the white space outside the border.

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

This element has a margin of 70px.

Margin – Individual Sides

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

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

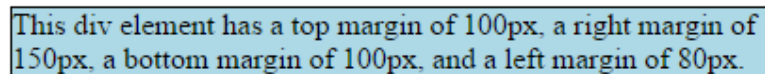```
<head>
<style>
div {
    border: 1px solid black;
    margin-top: 100px;
    margin-bottom: 100px;
    margin-right: 150px;
    margin-left: 80px;
    background-color: lightblue;
}
</style>
</head>
<body>

<h2>Using individual margin properties</h2>

<div>This div element has a top margin of 100px, a right margin of 150px, a bottom margin of 100px, and a left margin of 80px.</div>

</body>
```

## Using individual margin properties

This div element has a top margin of 100px, a right margin of 150px, a bottom margin of 100px, and a left margin of 80px.

# The auto Value

```
<head>
<style>
div {
```

```
        width:300px;
        margin: auto;
        border: 1px solid red;
    }
</style>
</head>
<body>

<h2>Use of the auto Value</h2>
<p>You can set the margin property to auto to horizontally center the element within its container.
The element will then take up the specified width, and the remaining space will be split equally between
the left and right margins:</p>

<div>
This div will be centered because it has margin: auto;
</div>

</body>
```

Use of the auto Value

You can set the margin property to auto to horizontally center the element within its container. The element will then take up the specified width, and the remaining space will be split equally between the left and right margins:

This div will be centered because it has margin: auto;

The inherit Value

This example lets the left margin be inherited from the parent element:

```
<head>
<style>
div.container {
    border: 1px solid red;
    margin-left: 100px;
}

p.one {
    margin-left: inherit;
}
</style>
</head>
```

```
<body>

<h2>Use of the inherit value</h2>
<p>Let the left margin be inherited from the parent element:</p>

<div class="container">
<p class="one">This is a paragraph with an inherited left margin (from the div element).</p>
</div>

</body>
```

Use of the inherit value

Let the left margin be inherited from the parent element:

> This is a paragraph with an inherited left margin (from the div element).

CSS Padding

The CSS `padding` properties are used to generate space around content.

The padding clears an area around the content (inside the border) of an element.

With CSS, you have full control over the padding. There are CSS 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`

```
<head>
<style>
```

```
div {
    border: 1px solid black;
    background-color: lightblue;
    padding-top: 50px;
    padding-right: 30px;
    padding-bottom: 50px;
    padding-left: 80px;
}
</style>
</head>
<body>

<h2>Using individual padding properties</h2>

<div>This div element has a top padding of 50px, a right padding of 50px, a bottom padding of 50px, and
a left padding of 80px.</div>

</body>
```

Using individual padding properties

This div element has a top padding of 50px, a right padding of 50px, a bottom padding of 50px, and a left padding of 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`

CSS Height and Width

Setting height and width

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

The `height` and `width` can be set to auto (this is default. Means that the browser calculates the height and width), or be specified in *length values*, like px, cm, etc., or in percent (%) of the containing block.

```
<head>
<style>
div {
    height: 200px;
    width: 50%;
    background-color: powderblue;
}
</style>
</head>
<body>

<h2>Set the height and width of an element</h2>

<p>This div element has a height of 200px and a width of 50%:</p>

<div></div>

</body>
```
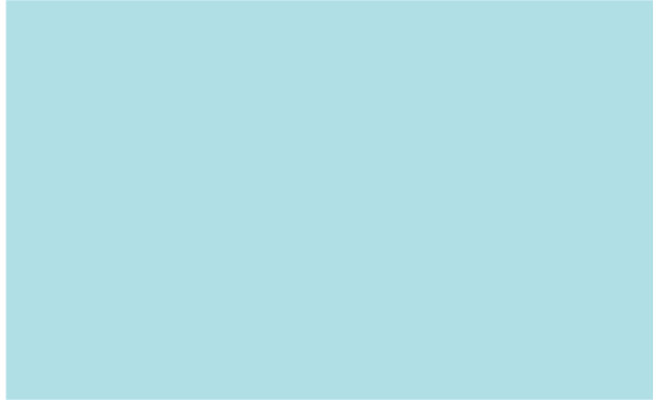
Set the height and width of an element

This div element has a height of 200px and a width of 50%:


```
<head>
<style>
div {
    height: 100px;
    width: 500px;
    background-color: powderblue;
}
</style>
</head>
<body>

<h2>Set the height and width of an element</h2>

<p>This div element has a height of 100px and a width of 500px:</p>

<div></div>

</body>
```

Set the height and width of an element

This div element has a height of 100px and a width of 500px:

Setting max–width

```
<head>
<style>
div {
    max-width: 500px;
    height: 100px;
    background-color: powderblue;
}
</style>
</head>
<body>

<h2>Set the max-width of an element</h2>
<p>This div element has a height of 100px and a max-width of 500px:</p>

<div></div>

<p>Resize the browser window to see the effect.</p>

</body>
```

Set the max-width of an element

This div element has a height of 100px and a max-width of 500px:

Resize the browser window to see the effect.