



CSS.1

▼ What is CSS?

CSS (Cascading Style Sheets) is a language used to style and lay out web pages — for example, to alter the font, color, size, and spacing of your content, split it into multiple columns, or add animations and other decorative features.

▼ How does CSS work?

1. The browser loads the HTML (e.g. receives it from the network).
2. It converts the HTML into a DOM (*Document Object Model*). The DOM represents the document in the computer's memory.
3. The browser then fetches most of the resources that are linked to by the HTML document, such as linked CSS.
4. The browser parses the fetched CSS, and sorts the different rules by their selector types.
5. Based on the selectors it finds, it works out which rules should be applied to which nodes in the DOM, and attaches style to them as required. This creates a render tree.
6. The render tree is laid out in the structure it should appear in after the rules have been applied to it.
7. The visual display of the page is shown on the screen. This is the painting stage.

▼ What structure is the DOM?

a tree-like structure

▼ Each element, attribute, and piece of text in the markup language becomes what?

a DOM node in the tree structure

▼ What is a document?

a text file structured using a markup language — HTML

▼ What can CSS be used for?

document text styling, creating layout, and animations

▼ Why is CSS a rule-based language?

you define rules specifying groups of styles that should be applied to particular elements or groups of elements on your web page

▼ What is an example of a CSS rule?

```
h1 {  
  color: red;  
  font-size: 5em;  
}
```

▼ What is a selector?

it selects the HTML element that we are going to style

```
h1 {  
  color: red;  
  font-size: 5em;  
}
```

The rule opens with a selector. In this case we are styling level one headings (<h1>).

▼ What is a declaration?

inside a set of curly braces {}, it is a property-value pair (element property)

e.g. color: red;

▼ What is the W3C?

The World Wide Web Consortium (W3C) is an international body that maintains Web-related rules and frameworks.

▼ CSS Specs

<https://www.w3.org/Style/CSS/>

▼ How to apply CSS to an HTML document by linking CSS from the head of a document?

```
<link rel="stylesheet" href="styles.css">
```

▼ How can you target multiple selectors at once?

by separating the selectors with a comma

```
p, li {  
  color: green;  
}
```

▼ The most common (and recommended) way of selecting a subset of elements?

using a class attribute

▼ What is the descendant combinator selector?

it will select all elements that are inside of (a descendant of) the first selector

```
li em {  
  color: green;  
}
```

▼ What is an adjacent sibling combinator selector?

it will style an element when it comes directly after the first element at the same hierarchy level in the HTML

```
h1 + p {  
  font-size: 200%;  
}
```

▼ How can you style elements based on their state? (example)

styling links with different states depending on whether it is unvisited, visited, being hovered over, focused via the keyboard, or in the process of being clicked (activated)

```
a:link {  
  color: pink;  
}  
  
a:visited {  
  color: green;  
}
```

▼ What is mobile first?

Often when creating responsive application layouts, it makes sense to create the mobile layout as the default, and build wider layouts on top.

▼ What are the 3 methods of applying CSS to a document?

with an external stylesheet, with an internal stylesheet, and with inline styles

▼ What is an external stylesheet?

An external stylesheet contains CSS in a separate file with a .css extension.

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Intro</title>
    <link rel="stylesheet" href="styles.css">
  </head>
  <body>
    <h1>Hello World!</h1>
  </body>
</html>
```

▼ What is an internal stylesheet?

An internal stylesheet resides within an HTML document in a style element.

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Intro</title>
    <style>
      h1 {
        color: blue;
        background-color: yellow;
        border: 1px solid black;
      }

      p {
        color: red;
      }
    </style>
  </head>
  <body>
    <h1>Hello World!</h1>
    <p>This is an introduction</p>
  </body>
</html>
```

▼ What are inline styles?

Inline styles are CSS declarations that affect a single HTML element, contained within a style attribute.

Avoid using CSS in this way, when possible. It is the opposite of a best practice

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Intro</title>
  </head>
  <body>
    <h1 style="color: blue;background-color: yellow;border: 1px solid black;">Hello World!</h1>
    <p style="color:red;">This is an introduction</p>
  </body>
</html>
```

▼ What are the CSS rules to control which selector is stronger in the event of a conflict?

cascade and specificity

▼ What is the cascade rule?

Later styles replace conflicting styles that appear earlier in the stylesheet.

```
p {
  color: red;
}

p {
  color: blue;
}
```

the paragraph will be blue

▼ What is specificity?

Specificity is how the browser decides which rule applies if multiple rules on an element

a CSS rule with higher specificity is more specific, and therefore will be chosen by the browser as the one that should style an element

▼ CSS consists of what two components?

properties and values

▼ Some CSS values take the form of a function (example)

```
.box {  
  width: calc(90% - 30px);  
  transform: rotate(0.8turn);  
}
```

▼ What are CSS @rules (pronounced "at-rules")?

they provide instruction for what CSS should perform or how it should behave

▼ What does the @ import CSS rule do?

it imports a stylesheet into another CSS stylesheet

```
@import 'styles2.css';
```

▼ What is the @ media rule?

its for media queries

a media query follows that defines a blue background if the browser viewport is wider than 30em

```
@media (min-width: 30em) {  
  body {  
    background-color: blue;  
  }  
}
```

▼ What are media queries?

Media queries use conditional logic for applying CSS styling.

▼ What are shorthand properties?

shorthand properties set several values in a single line

```
padding: 10px 15px 15px 5px;
```

▼ What do browsers ignore in files?

white space. but it can be used for readability for developers

▼ What happens if a browser encounters CSS it doesn't understand?

it does nothing, and just moves on to the next bit of CSS

▼ What is CSS inheritance?

some CSS properties by default inherit values set on the current element's parent element, and some don't

▼ What is more specific: element or class selector?

A class selector is more specific so it will get a higher specificity score

▼ In CSS what is inherited?

some CSS property values set on parent elements are inherited by their child elements, and some aren't

▼ What does inherit property do?

Sets the property value applied to a selected element to be the same as that of its parent element. Effectively, this "turns on inheritance".

▼ What does initial property do?

Sets the property value applied to a selected element to the initial value of that property.

▼ What does unset property do?

Resets the property to its natural value, which means that if the property is naturally inherited it acts like inherit, otherwise it acts like initial.

▼ Specificity values highest to lowest

1. **Thousands:** Score one in this column if the declaration is inside a `style` attribute, aka inline styles. Such declarations don't have selectors, so their specificity is always 1000.
2. **Hundreds:** Score one in this column for each ID selector contained inside the overall selector.
3. **Tens:** Score one in this column for each class selector, attribute selector, or pseudo-class contained inside the overall selector.
4. **Ones:** Score one in this column for each element selector or pseudo-element contained inside the overall selector.

▼ What is !important ?

this overrides the normal rules of the cascade

▼ Attribute selectors (example)

```
a[title] { }  
  
a[href="https://example.com"] { }
```

▼ What are psuedo-classes?

This group of selectors style certain **states** of an element.

```
a:hover { }
```

▼ What are pseudo-elements?

they select a certain part of an element rather than the element itself

For example, ::first-line always selects the first line of text inside an element

```
p::first-line { }
```

▼ What are combinators?

The final group of selectors combine other selectors in order to target elements within our documents.

▼ Descendant combinator (example)

```
article p
```

▼ Child combinator (example)

```
article > p
```

▼ Adjacent sibling combinator (example)

```
h1 + p
```

▼ General sibling combinator (example)

```
h1 ~ p
```


▼ Everything in CSS has what around it?

a box

▼ How will a block box behave?

- The box will break onto a new line.
- The box will extend in the inline direction to fill the space available in its container, filling up 100% of the space available.
- The `width` and `height` properties are respected.
- Padding, margin and border will cause other elements to be pushed away from the box

▼ How will an inline box behave?

- The box will not break onto a new line.
- The `width` and `height` properties will not apply.
- Horizontal padding, margins, and borders will apply and will cause other **inline** boxes to move away from the box.

▼ What types of display types do CSS boxes have?

outer and inner

▼ What is an outer display type?

it details whether the box is block or inline

▼ What is an inner display type?

it dictates how elements inside that box are laid out

▼ By default, the elements inside a box are laid out how?

in normal flow

▼ What is the CSS box model?

The model defines how the different parts of a box — margin, border, padding, and content — work together to create a box that you can see on the page.

▼ What is the content box?

The area where your content is displayed, which can be sized using properties like **width and height**.

▼ What is the padding box?

The padding sits around the content as white space.

▼ What is the border box?

The border box wraps the content and any padding.

▼ What is the margin box?

The margin is the outermost layer, wrapping the content, padding and border as whitespace between this box and other elements.

▼ What is the alternative CSS box model?

Using this model, any width is the width of the visible box on the page aka border box

▼ How to set your elements to use the alternative box model?

```
html {  
  box-sizing: border-box;  
}  
*, *::before, *::after {  
  box-sizing: inherit;  
}
```

▼ What is the margin?

The margin is an invisible space around your box.

It pushes other elements away from the box. Margins can have positive or negative values.

▼ What is the border?

The border is drawn between the margin and the padding of a box.

If you are using the standard box model, the size of the border is added to the width and height of the box.

If you are using the alternative box model then the size of the border makes the content box smaller as it takes up some of that available width and height.

▼ What is the padding?

The padding sits between the border and the content area.

Unlike margins you cannot have negative amounts of padding, so the value must be 0 or a positive value.

▼ What is display: inline-block?

- The `width` and `height` properties are respected.
- `padding`, `margin`, and `border` will cause other elements to be pushed away from the box.
- It does not, however, break onto a new line,

▼ What does the background-repeat property do?

it is used to control the tiling behavior of images

The available values are:

- `no-repeat` — stop the background from repeating altogether.
- `repeat-x` — repeat horizontally.
- `repeat-y` — repeat vertically.
- `repeat` — the default; repeat in both directions.

▼ What would adding the cover keyword to background: url(tree.png) do?

the browser will make the image just large enough so that it completely covers the box area while still retaining its aspect ratio

▼ What would adding the contain keyword to background-image: url(tree.png) do?

the browser will make the image the right size to fit inside the box

▼ What is the default value of the background-position property for a background image?

(0, 0), and the box is positioned along the horizontal (x) and vertical (y) axes.

▼ Position of background image (example)

positioning the background 20px from the top and 10px from the right:

```
background-position: top 20px right 10px;
```

▼ What is the background-attachment property?

it specifies how a background image scrolls when the content scrolls

- `scroll`: It causes the element's background to scroll when the page is scrolled. If the element content is scrolled, the background does not move. In effect, the background is fixed to the same position on the page, so it scrolls as the page scrolls.

- `fixed`: It causes an element's background to be fixed to the viewport so that it doesn't scroll when the page or element content is scrolled. It will always remain in the same position on the screen.

▼ How can you round corners on a box?

the border-radius property

```
.box {  
  border-radius: 10px;  
}
```

▼ What is overflow in CSS?

Overflow happens when there is too much content to fit in a box.

▼ What is the overflow property?

how you take control of an element's overflow

▼ What is a Block Formatting Context?

When you use a value of overflow such as scroll or auto, you create a Block Formatting Context (BFC).

The content of the box that you have changed the value of overflow for acquires a self-contained layout.

Content outside the container cannot poke into the container, and nothing can poke out of that container into the surrounding layout.

▼ What are points (length units)?

1pt = 1/72th of 1in

▼ What are pixels (length units)?

1px = 1/96th of 1in

▼ What is em (relative length unit)?

my parent element's font-size

▼ What is rem aka "root em" (relative length unit)?

The root element's font-size

▼ What is lh (relative length unit)?

relative to the line height of the element

- ▼ What is vw (relative length unit)?
relative to 1% of the viewport's width
- ▼ What is vh (relative length unit)?
relative to 1% of the viewport's height
- ▼ What is vmin (relative length unit)?
relative to 1% of the viewport's smaller dimension
- ▼ What is vmax (relative length unit)?
relative to 1% of the viewport's larger dimension
- ▼ How to set a font-size as a percentage?
it will be a percentage of the font-size of the element's parent
- ▼ How to set a width as a percentage?
it will be a percentage of the width of the parent
- ▼ What is the opacity property?
for a box this property accepts a number between 0 (fully transparent) and 1 (fully opaque)
- ▼ Ways to set color values?
 - name e.g. 'red'
 - six hexadecimal numbers e.g. #02798b
 - RGB: a function — `rgb()` — which is given three parameters that represent the red, green, and blue channel values of the colors e.g. `rgb(18, 138, 125)`
 - HSL: `hsl(174, 77%, 31%)`
- ▼ What is HSL?
the HSL color model
 - Hue: The base shade of the color
 - Saturation
 - Lightness
- ▼ What are identifiers in CSS?
where keywords are used as a value (for example <color> keywords like red, etc.)
e.g. `background-color: red;`

▼ What is the calc() CSS function?

This function gives you the ability to do simple calculations inside your CSS.

For example, using calc() to make the box 20% + 100px wide.

▼ What is the viewport?

the visible area of your page in the browser you are using to view a site

▼ What are replaced elements?

CSS cannot affect the internal layout of these elements — only their position on the page amongst other elements.

e.g. image and video

▼ How to end an image overflow (image in a container where image larger than container)?

make the max-width of an image 100%

or

use the **object-fit** property: object-fit: contain

▼ What is the object-fit property?

When using object-fit the replaced element can be sized to fit a box in a variety of ways.

e.g. object-fit: contain;

▼ What does object-fit: contain do?

The replaced content (e.g. image) is scaled to maintain its aspect ratio while fitting within the element's content box.

▼ What does a CSS comment look like?

```
/* This is a CSS comment  
It can be broken onto multiple lines. */
```

▼ How should you organize a CSS stylesheet?

A good tip is to add a block of comments between logical sections in your stylesheet

```
/* || General styles */  
  
...
```

```
/* || Typography */  
  
...  
  
/* || Header and Main Navigation */
```

▼ What is Object Oriented CSS?

The basic idea is to separate your CSS into reusable objects, which can be used anywhere you need on your site.

▼ Object Oriented CSS (example) - note you should do this

The Media Object pattern

In OOCSS, you would create one pattern called media that would have all of the common CSS for both elements— a base class for things that are generally the shape of the media object.

Then we'd add an additional class to deal with those tiny differences, thus extending that styling in specific ways.

```
.media {  
  display: grid;  
  grid-template-columns: 1fr 3fr;  
}  
  
.media .content {  
  font-size: .8rem;  
}  
  
.comment img {  
  border: 1px solid grey;  
}  
  
.list-item {  
  border-bottom: 1px solid grey;  
}
```

▼ What is Block Element Modifier (BEM) for styling naming convention?

In BEM a block is a stand-alone entity such as a button, menu, or logo.

An element is something like a list item or a title that is tied to the block it is in.

A modifier is a flag on a block or element that changes the styling or behavior.

You will be able to recognize code that uses BEM due to the extensive use of dashes and underscores in the CSS classes.

```
<form class="form form--theme-xmas form--simple">
  <input class="form__input" type="text" />
  <input
    class="form__submit form__submit--disabled"
    type="submit" />
</form>
```

▼ What is a CSS pre-processor?

A pre-processor runs over your raw files and turns them into a stylesheet

▼ What is a CSS post-processor?

A post-processor takes your finished stylesheet and does something to it

▼ What is the most popular pre-processor?

Sass

▼ What is list-style-type?

Sets the type of bullets to use for the list, for example, square or circle bullets

▼ What is list-style-position?

Sets whether the bullets appear inside the list items, or outside them before the start of each item.

▼ What is list-style-image?

Allows you to use a custom image for the bullet, rather than a simple square or circle.

▼ What is the visited link state?

A link when it has already been visited (exists in the browser's history), styled using the `:visited` pseudo class.

▼ What is the hover link state?

A link when it is being hovered over by a user's mouse pointer, styled using the `:hover` pseudo class.

▼ What is the focus link state?

A link when it has been focused (for example moved to by a keyboard user using the Tab key or similar, or programmatically focused using `HTMLElement.focus()`) — this is styled using the `:focus` pseudo class.

▼ What is the active link state?

A link when it is being activated (e.g. clicked on), styled using the `:active` pseudo class.

▼ What are text layout styles?

Properties that affect the spacing and other layout features of the text, allowing manipulation of, for example, the space between lines and letters, and how the text is aligned within the content box.

▼ What is a serif?

A serif is a decorative stroke that finishes off the end of a letters stem (sometimes also called the “feet” of the letters).

▼ What are some sans-serif fonts? (without serifs)

Arial, Verdana

▼ What are some serif fonts?

Times New Roman, Georgia, Courier New

▼ What is monospace?

Fonts where every character has the same width, typically used in code listings.

▼ What is a font stack?

Since you can't guarantee the availability of the fonts you want to use on your webpages (even a web font could fail for some reason), you can supply a font stack so that the browser has multiple fonts it can choose from.

`font-family: "Trebuchet MS", Verdana, sans-serif;`

▼ What is font-style?

Used to turn italic text on and off

▼ What is font-weight?

Sets how bold the text is.

▼ What is text-transform?

Allows you to set your font to be transformed.

Values include:

- `none`: Prevents any transformation.
- `uppercase`: Transforms ALL TEXT TO CAPITALS.
- `lowercase`: Transforms all text to lower case.

- `capitalize` : Transforms all words to Have The First Letter Capitalized.

▼ What is text-decoration?

Sets/unsets text decorations on fonts.

Available values are:

- `none` : Unsets any text decorations already present.
- `underline` : .

Underlines the text

- `overline` : Gives the text an overline.
- `line-through` : Puts a ~~strike through over the text~~.

▼ What is text-shadow?

You can apply drop shadows to your text using the text-shadow property.

▼ What is text-align property?

is used to control how text is aligned within its containing content box

- `left` : Left-justifies the text.
- `right` : Right-justifies the text.
- `center` : Centers the text.
- `justify` : Makes the text spread out, varying the gaps in between the words so that all lines of text are the same width.

▼ What is line-height?

The line-height property sets the height of each line of text

▼ What are the letter-spacing and word-spacing properties?

allow you to set the spacing between letters and words in your text

▼ What is overflow-wrap?

Specifies whether or not the browser may break lines within words in order to prevent overflow.