# Getting started with CSS

What is CSS?

CSS -- Cascading Style Sheets

CSS is a language for specifying how **documents (HTML)** are **presented (HTML will be presented by browsers)** to users

CSS is used to style and lay out web pages — for example, to alter the font, colour, size and spacing of your content, split it into multiple columns, or add animations and other decorative features.

How does CSS actually work?

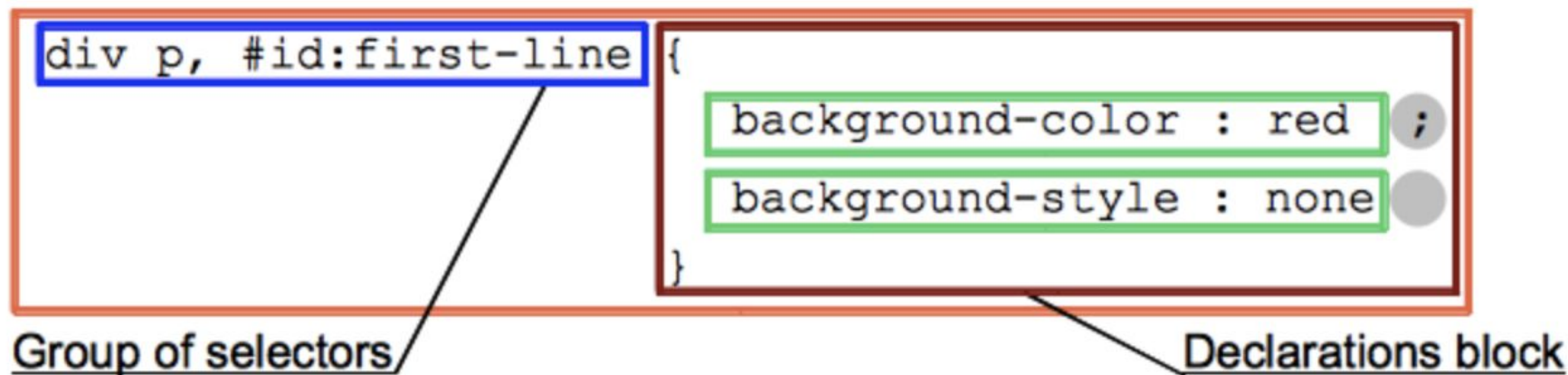In browser, behind the screen, it will:
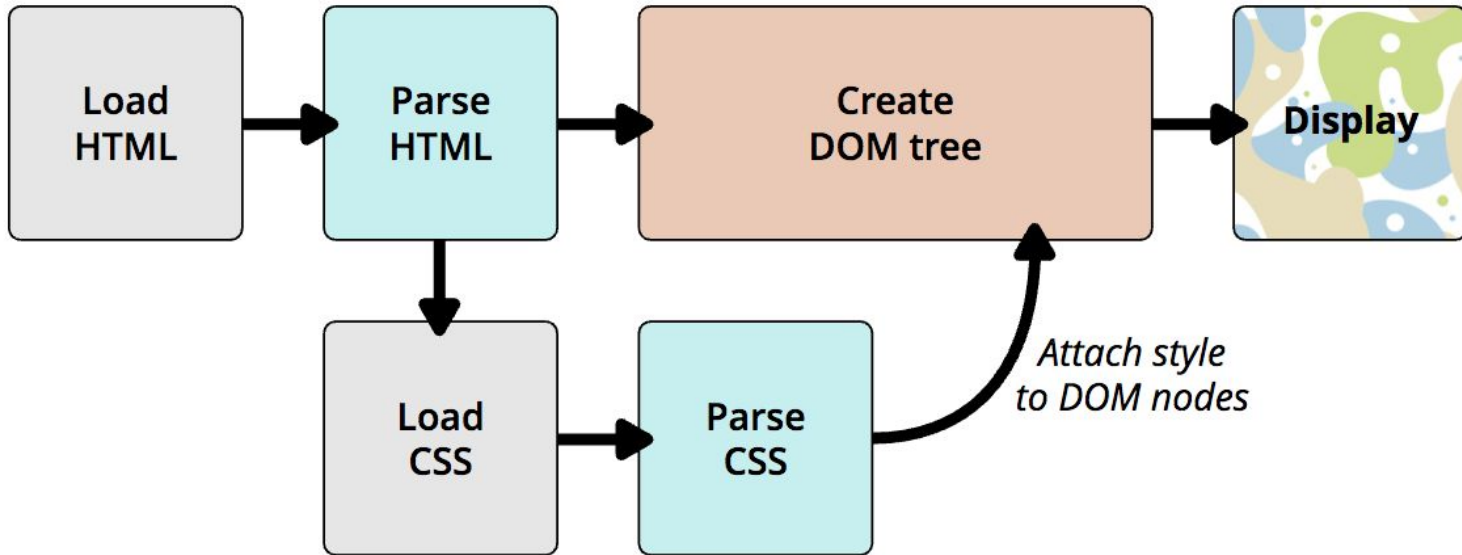
How to apply your CSS to your HTML

1. External stylesheet <link rel="stylesheet" href="style.css">
2. Internal stylesheet <style></style>
3. Inline stylesheet <p style="color:red;">This is my first CSS example</p>

CSS syntax

A CSS ruleset (or rule):

```
div p, #id:first-line {
                        background-color : red ;
                        background-style : none
                      }
```

Group of selectors

Declarations block

Selectors

1. Simple selectors: element type, class, id
2. Attribute selectors: [data-id='some-id']
3. Pseudo-classes: - :hover :focus
4. Pseudo-elements: :before :after
5. Combinators: +, >
6. Multiple selectors which will include all above rule

DEMO

[Element type, class, id - DEMO](#)

[Attribute - DEMO](#)

Pseudo-selectors

They come in two main types: pseudo-classes and pseudo-elements.

Selected element will only be styled when it is in a certain state.

https://developer.mozilla.org/en-US/docs/Learn/CSS/Introduction_to_CSS/Pseudo-classes_and_pseudo-elements

Combinators

1. h1, h2, h3 -- all h1, h2, h3 -- Group of selectors
2. h1 h2 -- h2 under h1 -- Descendant selector
3. X > Y -- direct children -- Child selector
4. X + Y -- Y that have an adjacent X sibling -- Adjacent sibling selector
5. X ~ Y-- Y that have a X sibling -- General sibling selector

DEMO

Values and units in CSS

Pixels(px): are referred to as absolute units because they will always be the same size regardless of any other related settings

There are also relative units like

em: 1 em = 16px by default; NOTE: ems are the most common relative unit you'll use in web development.

rem: 1 rem = 16px called root em

vw, vh: Respectively these are 1/100th of the width of the viewport, and 1/100th of the height of the viewport

Unitless values

Margin: 0;

line-height: 1.5; // the times of font-size

width: 50%; // ½ width of its container

For animation: (keyframe)

```
p:hover {
  animation-name: rotate;
  animation-duration: 0.6s;
  animation-timing-function: linear;
  animation-iteration-count: 5;
}
```

Colors Hexadecimal/RGB/HSL

Color: red or #ff0000 or rgb(255,0,0) or hsl(0,100%,50%) // for font

background-color: red or #ff0000 or rgb(255,0,0) or hsl(0,100%,50%);

Border-color: red or #ff0000 or rgb(255,0,0) or hsl(0,100%,50%);

RGBA and HSLA -- A is representing for opacity

rgba(255,0,0,0.5); / hsla(240,100%,50%,0.5);

Function in CSS

Background-color: rgba(255, 0, 0, 0.5);

Transform: rotate(90deg);

Transform: translate(90px, 90px);

Width: calc(50% - 90px);

Background-image: url('my-image.png')

Cascade

It indicates that the order of CSS rules matter.

What selectors win out in the cascade depends on three factors (these are listed in order of weight -- earlier ones will overrider later ones

1. Importance -- this will override everything -- color: red !important;
2. Specificity
3. Source order -- whichever comes later

Specificity

Specificity is basically a measure of how specific a selector is — how many elements it could match.

Inline style > Id > Class == Attribute == pseudo-class > simple element
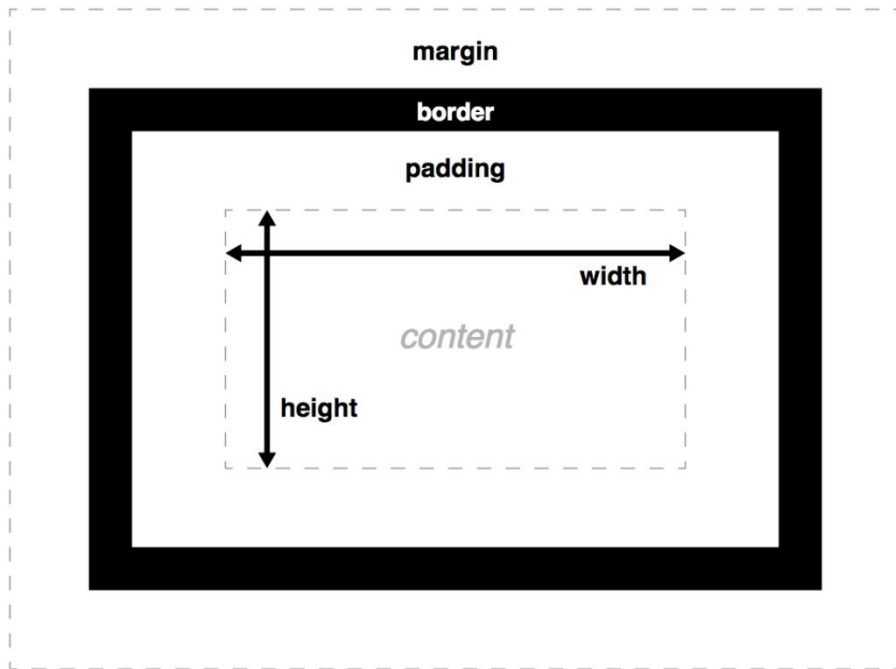
1000 => 100 => 10 => 1

DEMO

Inheritance

1. Some css could be inheritance from the element's parent like: font-size, color, family etc.
2. Styles like margin, padding, border, background-image, position, display are not able to be inherited

Box model

The css box model is the foundation of layout on the web. The Box in the middle is called **content box.**
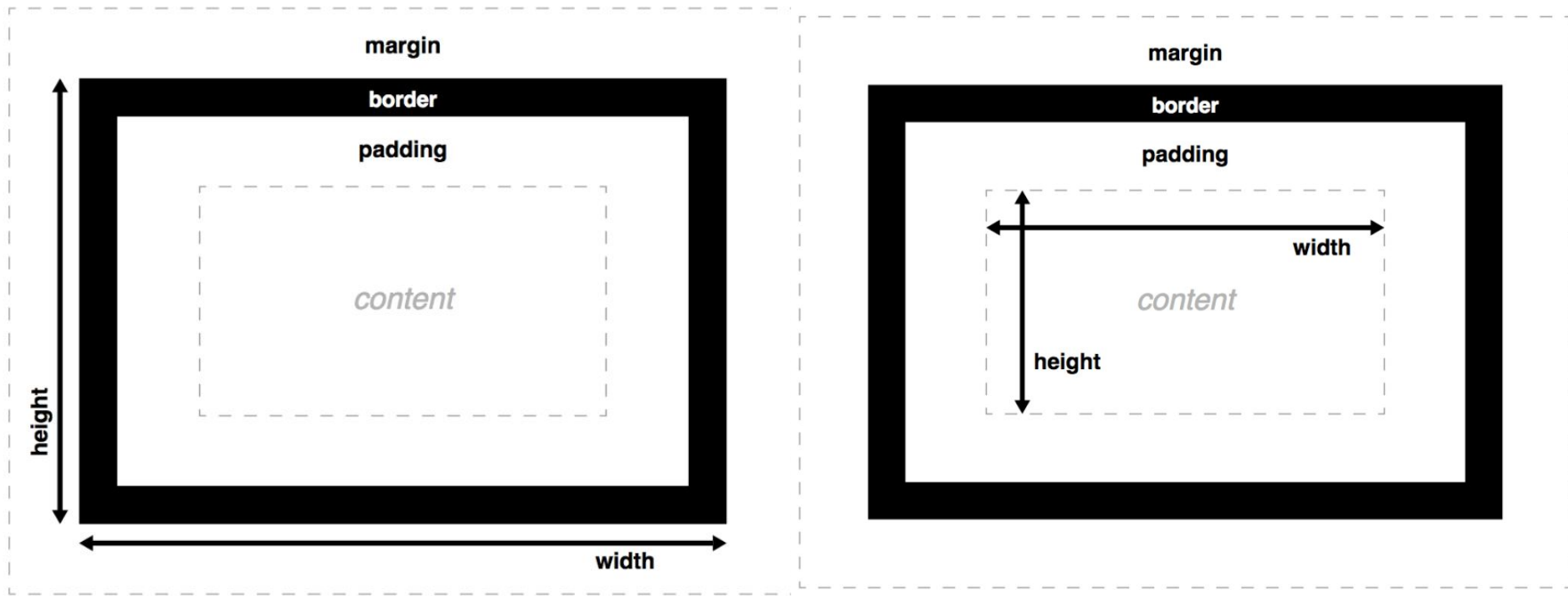
Margin collapsing

[DEMO Margin collapsing](#)

Margins have a specific behavior called **margin collapsing**: When two boxes touch against one another, the distance between them is the value of **the largest of the two touching margins, and not their sum.**

DEMO: box-sizing

Styles under box model

[Overflow Demo](#)

[Background Demo](#)

Type of the Box

DEMO : block/inline/inline-block

Very useful css styles

1. Demo: position / Demo: position sticky / vendor prefixes css
2. Demo: float
3. Shadow
4. Flex box
5. Transform and animation
6. Demo: a button
7. Demo: a modal
8. Example: https://jsfiddle.net/jinchi2013/3v5dsxjg/

Responsive Design -- media Queries

Responsive web design (RWD) is an approach to web design which makes web pages render well on a variety of devices and window or screen sizes. Recent work also considers the viewer proximity as part of the viewing context as an extension for RWD Content, design and performance are necessary across all devices to ensure usability and satisfaction

Mobile First

https://www.w3schools.com/css/css_rwd_mediaqueries.asp

https://www.w3schools.com/cssref/css3_pr_mediaquery.asp