

Cascading Style Sheets (CSS)

Software Languages Team
University of Koblenz-Landau
Ralf Lämmel and Andrei Varanovich

What is CSS?

- Cascading Style Sheets (CSS) is a language for specifying how **documents** are presented to users.
- A **document** is a collection of information that is structured using a markup language.

Why do we need CSS?

- Provides a powerful and flexible way to control the ***details of displaying web documents.***
- HTML is more concerned about the ***content***; CSS is used to impose a particular ***style*** on the document.
- Named ‘cascading style sheets’ because they can be defined at three different levels to specify the style of a document:
Inline (per element), document level, external.

Without CSS

```
<head>  
<title>CSS Example</title>  
</head>  
<body>  
<H1>Very important</H1>  
42  
<H2>Less important</H2>  
88  
</body>
```

Very important
42
Less important
88

With CSS

```
<head>
<title>CSS Example</title>
<style type="text/css">
  H1 { font-size: x-large; color: red }
  H2 { font-size: large; color: blue }
</style>
</head>
<body>
<H1>Very important</H1>
42
<H2>Less important</H2>
88
</body>
```

Very important

42

Less important

88

DEMO

The screenshot shows a web development tool interface with four panels:

- HTML:** Contains the following code:

```
<head>
<title>CSS Example</title>
<style type="text/css">
  H1 { font-size: x-large; color: red }
  H2 { font-size: large; color: blue }
</style>
</head>
<body>
<H1>Very important</H1>
42
<H2>Less important</H2>
88
</body>
```
- CSS:** Currently empty.
- JavaScript:** Currently empty.
- Result:** Displays the rendered output:

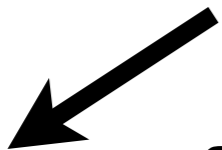
Very important
42
Less important
88

Vary CSS for the shown HTML markup.

<http://jsfiddle.net/rlaemmel/eVbY7/>

Format of style rules

Remember HTML DOM?



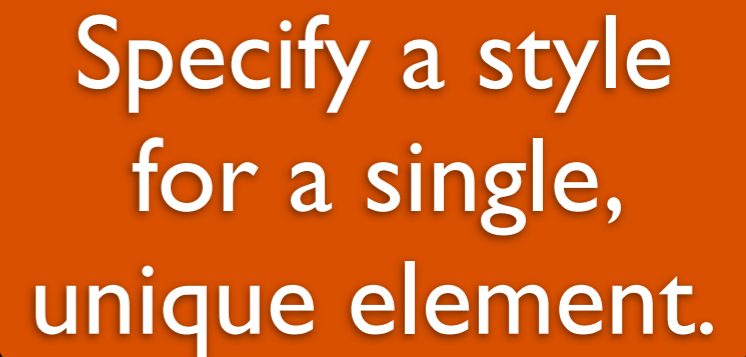
selector { **property1**: **value1**; **property2**: **value2** }

H1 { ***font-size: x-large***; ***color: red*** }

Rules with an *id* selector

CSS

```
name { text-indent: 3em }
```



Specify a style
for a single,
unique element.

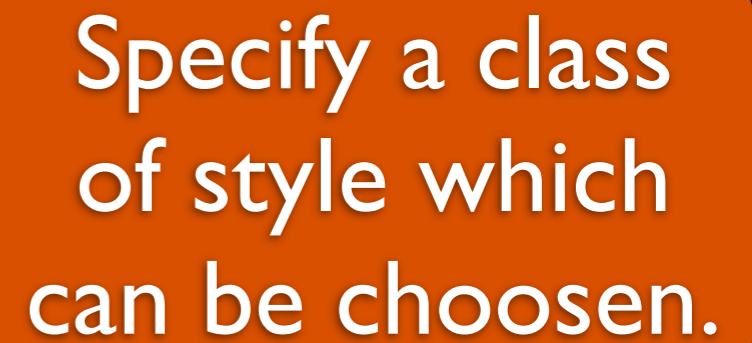
HTML

```
<p id="name">Andrei</p>
```


Rules with an *class* selector

CSS

```
.center {text-align:center;}
```



Specify a class of style which can be chosen.

HTML

```
<p class="center">Some text</p>
```

DEMO

The screenshot shows a web development tool interface with four panels:

- HTML:** Contains the following code:

```
<head>
<title>CSS Example</title>
<style type="text/css">
  .center {text-align:center;}
</style>
</head>
<body>
  <P>Some normal text.</P>
  <P class=center>Some centered
text.</P>
</body>
```
- CSS:** Is currently empty.
- JavaScript:** Is currently empty.
- Result:** Displays the rendered output:

Some normal text.
Some centered text.

Rules with 'class' in HTML5

<http://jsfiddle.net/rlaemmel/MgPxj/3/>

CSS demo:

Frequency of languages across implementations of 101 companies

Java XML JavaScript CSharp Haskell SQL CSS XSD
HTML HTML5 JSON XHTML PHP Scala Ecore Groovy CPLUSPLUS
HQL Smalltalk XPath FSharp ATL xjc POJOs Erlang AspectJ GReTL
EBNF TGraphs Python Scala HSQLDialect XQuery Ruby GReQL
JavaServer Pages Python XSLTClojure Prolog WSDL JAXB annotations
JoCaml Cobol 85

BTW, languages link
to 101wiki.

Underlying style

```
a.size-0 { font-size: 5px; color: red; }  
a.size-1 { font-size: 10px; color: orange; }  
a.size-2 { font-size: 16px; color: magenta; }  
a.size-3 { font-size: 23px; color: blue; }  
a.size-4 { font-size: 31px; color: green; }  
a.size-5 { font-size: 40px; color: brown; }  
a.size-6 { font-size: 50px; color: black; }
```

Language *links* (...)
gets assigned different classes depending
on popularity.

HTML of tagcloud

```
<body>
```

```
<a href="http://101companies.org/index.php/Language:Java"  
class="size-6">Java</a>
```

```
<a href="http://101companies.org/index.php/Language:XML"  
class="size-3">XML</a>
```

```
<a href="http://101companies.org/index.php/Language:JavaScript"  
class="size-1">JavaScript</a>
```

...

See here for the complete demo:

<https://github.com/rlaemmel/json101demo>

DEMO

The screenshot shows a web development tool interface with three main panels: HTML, CSS, and JavaScript. The HTML panel contains the following code:

```
<header>
  <h1>This is our Header</h1>
</header>
<nav id="main">
  <ul><li>Navigator</li></ul>
</nav>
<aside>this is an aside</aside>
<article>
  <h1>This is the article</h1>
</article>
<footer>
  <p>footer</p>
</footer>
```

The CSS panel contains the following code:

```
header, footer, aside, nav, article {
  display: block;
}

header, footer {
  width: 100%;
  border: 1px solid red;
}
```

The JavaScript panel is currently empty.

The rendered preview shows the following layout:

- A red-bordered header box containing the text "This is our Header".
- Below the header, three blue-bordered boxes are arranged horizontally: "Navigator", "This is the article", and "this is an aside".
- A footer box is located below the main content, containing the text "footer".

Layout in HTML5

<http://jsfiddle.net/DrGigabit/ZbV3F/2/>

Latest version: CSS3

- Main goal:
advanced interaction
(e.g., games and animation in the Web browser)
- Demo:
<http://css3please.com/>

Summary

You learned ...

- basic principles of CSS,
- how to use CSS for layouts.