

# LESS (stylesheet language)

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## LESS

	
<b>Appeared in</b>	2009
<b>Designed by</b>	Alexis Sellier
<b>Developer</b>	Alexis Sellier, Dmitry Fadeyev
<b>Stable release</b>	1.3.3 (December 30, 2012)
<b>Typing discipline</b>	dynamic
<b>Influenced by</b>	CSS, Sass
<b>Influenced</b>	Sass, Less Framework
<b>OS</b>	Cross-platform
<b>License</b>	Apache License 2
<b>Usual filename extensions</b>	.less
• <a href="http://lesscss.org">lesscss.org</a> <sup>[1]</sup>	

**LESS** is a dynamic stylesheet language designed by Alexis Sellier. It is influenced by Sass and has influenced the newer "SCSS" syntax of Sass, which adapted its CSS-like block formatting syntax.<sup>[2]</sup> LESS is open-source. Its first version was written in Ruby, however in the later versions, use of Ruby has been deprecated and replaced by JavaScript. The indented syntax of LESS is a nested metalanguage, as valid CSS is valid LESS code with the same semantics. LESS provides the following mechanisms: variables, nesting, mixins, operators and functions; the main difference between other CSS precompilers being that it allows real-time compilation via LESS.js by the browser.<sup>[3][4]</sup> LESS can run on the client-side and server-side,<sup>[4]</sup> or can be compiled into plain CSS.

## Variables

LESS allows variables to be defined. LESS variables are defined with an at sign(@). Variable assignment is done with a colon (:).

During translation, the values of the variables are inserted into the output CSS document.<sup>[4]</sup>

```
@color: #4D926F;

#header {
  color: @color;
}
h2 {
  color: @color;
}
```

The above code in LESS would compile to following CSS code.

```
#header {  
  color: #4D926F;  
}  
h2 {  
  color: #4D926F;  
}
```

## Mixins

Mixins allow embedding all the properties of a class into another class by including the class name as one of its properties, thus behaving as a sort of constant or variable. They can also behave like functions, and take arguments. CSS does not support Mixins. Any repeated code must be repeated in each location. Mixins allow for more efficient and clean code repetitions, as well as easier alteration of code.<sup>[4]</sup>

```
.rounded-corners (@radius: 5px) {  
  border-radius: @radius;  
  -webkit-border-radius: @radius;  
  -moz-border-radius: @radius;  
}  
  
#header {  
  .rounded-corners;  
}  
#footer {  
  .rounded-corners(10px);  
}
```

The above code in LESS would compile to the following CSS code:

```
#header {  
  border-radius: 5px;  
  -webkit-border-radius: 5px;  
  -moz-border-radius: 5px;  
}  
#footer {  
  border-radius: 10px;  
  -webkit-border-radius: 10px;  
  -moz-border-radius: 10px;  
}
```

LESS has a special type of ruleset called parametric mixins which can be mixed in like classes, but accepts parameters.

## Nesting

CSS supports logical nesting, but the code blocks themselves are not nested. LESS allows nesting of selectors inside other selectors. This makes inheritance clear and style sheets shorter.<sup>[4]</sup>

```
#header {
  h1 {
    font-size: 26px;
    font-weight: bold;
  }
  p {
    font-size: 12px;
    a {
      text-decoration: none;
      &:hover {
        border-width: 1px;
      }
    }
  }
}
```

The above code in LESS would compile to the following CSS code:

```
#header h1 {
  font-size: 26px;
  font-weight: bold;
}
#header p {
  font-size: 12px;
}
#header p a {
  text-decoration: none;
}
#header p a:hover {
  border-width: 1px;
}
```

## Functions and operations

LESS allows operations and functions. Operations allow addition, subtraction, division and multiplication of property values and colors, which can be used to create complex relationships between properties. Functions map one-to-one with JavaScript code, allowing manipulation of values.

```
@the-border: 1px;
@base-color: #111;
@red:       #842210;

#header {
  color: @base-color * 3;
  border-left: @the-border;
```

```
border-right: @the-border * 2;
}
#footer {
  color: @base-color + #003300;
  border-color: desaturate(@red, 10%);
}
```

The above code in LESS would compile to the following CSS code:

```
#header {
  color: #333;
  border-left: 1px;
  border-right: 2px;
}
#footer {
  color: #114411;
  border-color: #7d2717;
}
```

## Comparison

### SASS

Both Sass and LESS are CSS preprocessors, which allow writing clean CSS in a programming construct instead of static rules.<sup>[5]</sup>

As of LESS 1.4, LESS supports nested, inherited rules via the `&:extends` and `@extends` pseudo-selector. Prior to this, a main difference between LESS and other preprocessors like SASS was the lack of an `@extends` directive, which would extend an already-existing class to include more rules, leading to clean CSS without duplicated rules.

LESS is inspired by Sass.<sup>[6]</sup> Sass was designed to both simplify and extend CSS, so things like curly braces were removed from the syntax. LESS was designed to be as close to CSS as possible, so the syntax is identical to existing CSS code. As a result, existing CSS can be used as valid LESS code.

The newer versions of Sass also introduced a CSS-like syntax called SCSS (Sassy CSS).<sup>[2]</sup>

For more syntax comparisons, see <https://gist.github.com/674726>.

### ZUSS

ZUSS<sup>[7]</sup> is inspired by LESS. The syntax is similar, except it is tailored for the Java programming language. Unlike LESS, it doesn't require the JavaScript interpreter (Rhino), and it allows ZUSS to invoke Java methods directly.

### Use on sites

LESS can be applied to sites in a number of ways. One option is to include the `less.js` JavaScript file to convert the code on-the-fly. The browser then renders the output CSS. Another option is to render the LESS code into pure CSS and upload the CSS to a site. With this option no `.less` files are uploaded and the site does not need the `less.js` JavaScript converter.

## LESS Software

Name	Description	Software License	Platform	Functionality
WinLess <sup>[8]</sup>	GUI LESS Compiler	Apache 2.0 <sup>[9]</sup>	Windows	Compiler
Crunch <sup>[10]</sup>	LESS editor and compiler (requires Adobe AIR)	GPL <sup>[11]</sup>	Windows, MacOSX	Compiler Editor
less.js-windows <sup>[12]</sup>	Simple command-line utility for Windows that will compile *.less files to CSS using less.js.	?	Windows	Compiler
less.app <sup>[13]</sup>	LESS Compiler	Proprietary	MacOSX	Compiler
CodeKit <sup>[14]</sup>	LESS Compiler	Proprietary	MacOSX	Compiler
SimpLESS <sup>[15]</sup>	LESS Compiler	?	Windows MacOSX Linux	Compiler
Chirpy <sup>[16]</sup>	Compiles various JavaScript and CSS extension languages, including LESS	Ms-PL <sup>[17]</sup>	Visual Studio Plugin	Compiler
Mindscape Web Workbench <sup>[18]</sup>	Syntax highlighting and Intellisense for LESS (also Sass and CoffeeScript)	Proprietary	Visual Studio Plugin	Compiler Syntax Highliting
Eclipse Plugin for LESS <sup>[19]</sup>	Eclipse Plugin	EPL 1.0 <sup>[20]</sup>	Eclipse Plugin	Syntax highlighting Content assist

## References

- [1] <http://lesscss.org/>
- [2] Sass and Less (<http://nex-3.com/posts/83-sass-and-less>) Sass and Less
- [3] <http://stackoverflow.com/questions/4436643/is-there-a-sass-js-something-like-less-js>
- [4] Official LESS website (<http://lesscss.org/>) Official LESS website
- [5] What's Wrong With CSS (<http://www.codinghorror.com/blog/2010/04/whats-wrong-with-css.html>) What's Wrong With CSS
- [6] About LESS (<http://lesscss.org/about>) About
- [7] <http://github.com/tomyeh/ZUSS>
- [8] <http://winless.org/>
- [9] (<http://github.com/marklagendijk/WinLess/issues/55#issuecomment-12863789>) WinLess github Issue "License Information"
- [10] <http://crunchapp.net/>
- [11] Crunch's LICENSE.txt at github (<https://github.com/matthewdl/Crunch/blob/master/LICENSE.txt>) Crunch's LICENSE.txt at github
- [12] <http://github.com/duncansmart/less.js-windows>
- [13] <http://incident57.com/less/>
- [14] <http://incident57.com/codekit/>
- [15] <http://wearekiss.com/simpless>
- [16] <http://chirpy.codeplex.com>
- [17] (<http://chirpy.codeplex.com/license>) Chirpy License Information at CodePlex
- [18] <http://www.mindscapehq.com/products/web-workbench>
- [19] <http://www.normalesup.org/~simonet/soft/ow/eclipse-less.fr.html>
- [20] Eclipse Plugin for LESS homepage (<http://www.normalesup.org/~simonet/soft/ow/eclipse-less.fr.html>) Eclipse Plugin for LESS homepage

## External links

- Official LESS website (<http://lesscss.org/>)
  - LESS source code repository (Git) (<https://github.com/cloudhead/less.js>)
  - SimpLESS: a small program which converts .less files to .css (<http://wearekiss.com/simpless>)
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