

Chrome File Edit View History Bookmarks People Window Help

sass-lang.com

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Sass

Install Learn Sass Blog Documentation Get Involved

CSS with superpowers

Sass is the most mature, stable, and powerful professional grade CSS extension language in the world.



Current Releases: Dart Sass 1.22.12 LibSass 3.6.1 Ruby Sass Implementation Guide

CSS Compatible Sass is completely compatible with all versions of CSS. We take this compatibility seriously, so that you can seamlessly use any available CSS libraries.	Feature Rich Sass boasts more features and abilities than any other CSS extension language out there. The Sass Core Team has worked endlessly to not only keep up, but stay ahead.	Mature Sass has been actively supported for almost 13 years by its loving Core Team.
Industry Approved Over and over again, the industry is choosing Sass as the premier CSS extension language.	Large Community Sass is actively supported and developed by a consortium of several tech companies and hundreds of developers.	Frameworks There are an endless number of frameworks built with Sass. Compass , Bourbon , and Susy just to name a few.



A screenshot of a Mac OS X desktop showing a Chrome browser window. The browser is displaying the 'Install Sass' page from sass-lang.com. The page features a large 'Install Sass' button in the center. Below it are two sections: 'Applications' (with a mouse icon) and 'Command Line' (with a keyboard icon). Each section contains descriptive text and a list of tools or resources.

Chrome File Edit View History Bookmarks People Window Help

sass-lang.com/install

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Sass

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Install Sass

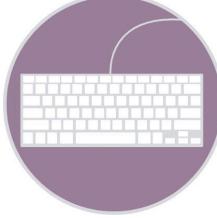
Applications



There are a good many applications that will get you up and running with Sass in a few minutes for Mac, Windows, and Linux. You can download most of the applications for free but a few of them are paid apps (and totally worth it).

- CodeKit (Paid) Mac
- Compass.app (Paid, Open Source) Mac Windows Linux
- Ghostlab (Paid) Mac Windows
- Hammer (Paid) Mac
- Koala (Open Source) Mac Windows Linux
- LiveReload (Paid, Open Source) Mac Windows
- Prepros (Paid) Mac Windows Linux
- Scout-App (Free, Open Source) Windows Linux Mac

Command Line



When you install Sass on the command line, you'll be able to run the `sass` executable to compile `.sass` and `.scss` files to `.css` files. For example:

```
sass source/stylesheets/index.scss build/stylesheets/index.css
```

First install Sass using one of the options below, then run `sass --version` to be sure it installed correctly. If it did, this will include `1.22.12`. You can also run `sass --help` for more information about the command-line interface.

Once it's all set up, go and play. If you're brand new to Sass we've set up some resources to help you learn pretty darn quick.

[Learn More About Sass](#)

Mac OS X Dock icons: Finder, Mail, Safari, Compass.app, Ghostlab, Hammer, Koala, LiveReload, Prepros, Scout-App, and others.

The screenshot shows a Mac OS X desktop with a Chrome browser window open to the Sass installation page (sass-lang.com/install). The browser's address bar shows the URL. The page content is as follows:

Sass source/stylesheets/index.scss build/stylesheets/index.css

First install Sass using one of the options below, then run `sass --version` to be sure it installed correctly. If it did, this will include 1.22.12. You can also run `sass --help` for more information about the command-line interface.

Once it's all set up, go and play. If you're brand new to Sass we've set up some resources to help you learn pretty darn quick.

[Learn More About Sass](#)

Install Anywhere (Standalone)
You can install Sass on Windows, Mac, or Linux by downloading the package for your operating system from GitHub and adding it to your PATH. That's all—there are no external dependencies and nothing else you need to install.

Install Anywhere (npm)
If you use Node.js, you can also install Sass using npm by running

```
npm install -g sass
```

However, please note that this will install the pure JavaScript implementation of Sass, which runs somewhat slower than the other options listed here. But it has the same interface, so it'll be easy to swap in another implementation later if you need a bit more speed!

Install on Windows (Chocolatey)
If you use the Chocolatey package manager for Windows, you can install Dart Sass by running

```
choco install sass
```

Install on Mac OS X (Homebrew)
If you use the Homebrew package manager for Mac OS X, you can install Dart Sass by running

```
brew install sass/sass/sass
```

Current Releases: [Dart Sass 1.22.12](#) | [LibSass 3.6.1](#) | [Ruby Sass](#) | [Implementation Guide](#)

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Sass on GitHub | Website Source Code | Style Guide | Community Guidelines

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A screenshot of a Mac OS X desktop environment. At the top, the Dock bar contains various application icons. Below it is the Dock, which holds many open application windows. A central feature is a full-screen Terminal window titled "Terminal" with the command "vue-cli-hello-world — bash — 203x57". The terminal output shows the user running "ruby -W0 --disable=gems,did_you_mean,rubyopt /usr/local/Homebrew/Library/Homebrew/brew.rb install sass/sa...". The process involves updating Homebrew, installing formulae from taps like "sass", "dart-lang/dart", and "sass-lang.com/install", and finally installing dependencies for sass/sass. The terminal also lists several formulae being updated. At the bottom of the screen, there is a footer for the Sass website with links to GitHub, Source Code, Style Guide, and Community Guidelines.

```
Terminal Shell Edit View Window Help
vue-cli-hello-world — bash — 203x57
htdocs — ruby -W0 --disable=gems,did_you_mean,rubyopt /usr/local/Homebrew/Library/Homebrew/brew.rb install sass/sa...
< → 🔍 sass-lang.com/install
  • CodeKit (Paid) Mac
  • Compass.app (Paid, Open Source) Mac Windows
  • Ghostlab (Paid) Mac Windows
  • Hammer (Paid) Mac
  • Koala (Open Source) Mac Windows Linux
  • LiveReload (Paid, Open Source) Mac Windows
  • Prepros (Paid) Mac Windows Linux
  • Scout-App (Free, Open Source) Windows Linux Mac
users-mbp:htdocs user$ brew install sass/sass/sass
Updating Homebrew...
==> Auto-updated Homebrew!
Updated 1 tap (homebrew/core).
==> Updated Formulae
bind           datamash     glooctl      memcached    nats-server  paket       pybind11      serverless   swiftformat
cjdns          ethereum     hugo         menhir       node-build   passenger  qpdf        starship    tomcat
compcert       git-secret   jhipster    mgba        octant      plantuml   sbt        step
==> Tapping sass/sass
Cloning into '/usr/local/Homebrew/Library/Taps/sass/homebrew-sass'...
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 7 (delta 0), reused 1 (delta 0), pack-reused 0
Unpacking objects: 100% (7/7), done.
Tapped 2 formulae (35 files, 29.5KB).
==> Installing sass from sass/sass
==> Tapping dart-lang/dart
Cloning into '/usr/local/Homebrew/Library/Taps/dart-lang/homebrew-dart'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 6 (delta 1), reused 1 (delta 0), pack-reused 0
Unpacking objects: 100% (6/6), done.
Tapped 3 formulae (33 files, 32.9KB).
==> Installing dependencies for sass/sass/sass: dart-lang/dart/dart
==> Installing sass/sass/sass dependency: dart-lang/dart/dart
```

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Sass on GitHub Website Source Code Style Guide Community Guidelines

Terminal Shell Edit View Window Help htdocs — bash — 90x51

```

users-mbp:htdocs user$ brew install sass/sass/sass
Updating Homebrew...
=> Auto-updated Homebrew!
Updated 1 tap (homebrew/core).
=> Updated Formulae
bind      datamash    glooctl    memcached   nats-server  paket      pybind11
serverless swiftformat    ethereum    hugo       menhir      node-build  passenger  qpdf
cjdns     ethereum    hugo       menhir      node-build  passenger  qpdf
starship   tomcat     jhipster   mgba      octant      plantuml  sbt
compcert  git-secret
step

=> Tapping sass/sass
Cloning into '/usr/local/Homebrew/Library/Taps/sass/homebrew-sass'...
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 7 (delta 0), reused 1 (delta 0), pack-reused 0
Unpacking objects: 100% (7/7), done.
Tapped 2 formulae (35 files, 29.5KB).
=> Installing sass from sass/sass
=> Tapping dart-lang/dart
Cloning into '/usr/local/Homebrew/Library/Taps/dart-lang/homebrew-dart'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 6 (delta 0), reused 1 (delta 0), pack-reused 0
Unpacking objects: 100% (6/6), done.
Tapped 3 formulae (33 files, 32.9KB).
=> Installing dependencies for sass/sass/sass: dart-lang/dart/dart
=> Installing sass/sass/sass dependency: dart-lang/dart/dart
=> Downloading https://storage.googleapis.com/dart-archive/channels/stable/release/2.5.0/sdk/dartsdk-macos-x64-release.zip
#####
##### 100.0%
=> Caveats
Please note the path to the Dart SDK:
  /usr/local/opt/dart/libexec
=> Summary
  /usr/local/Cellar/dart/2.5.0: 395 files, 559.1MB, built in 1 minute 13 seconds
=> Installing sass/sass/sass
=> Downloading https://github.com/sass/dart-sass/archive/1.22.12.tar.gz
=> Downloading from https://codeload.github.com/sass/dart-sass/tar.gz/1.22.12
#####
##### 100.0%
=> /usr/local/opt/dart/bin/pub get
=> /usr/local/opt/dart/bin/dartzaot -Dversion=1.22.12 bin/sass.dart sass.dart.native
  /usr/local/Cellar/sass/1.22.12: 9 files, 6.7MB, built in 1 minute 8 seconds
=> Caveats
=> dart
Please note the path to the Dart SDK:
  /usr/local/opt/dart/libexec
users-mbp:htdocs user$ 
```

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[Sass on GitHub](#) [Website Source Code](#) [Style Guide](#) [Community Guidelines](#)

Follow @SassCSS

Terminal Shell Edit View Window Help htdocs — bash — 90x53

```
users-mbp:htdocs user$ brew install sass/sass/sass
Updating Homebrew...
==> Auto-updated Homebrew!
Updated 1 tap (homebrew/core).
==> Updated Formulae
bind      datamash    glooctl      memcached   nats-server  paket      pybind11
serverless swiftformat      ethereum     menhir       node-build   passenger  qpdf
cjdns     ethereum     hugo        menhir       node-build   passenger  qpdf
starship   tomcat      jhipster    mgba        octant      plantuml  sbt
compcert  git-secret  jhipster    mgba        octant      plantuml  sbt
step
```

==> Tapping sass/sass
Cloning into '/usr/local/Homebrew/Library/Taps/sass/homebrew-sass'...
remote: Enumerating objects: 7, done.
remote: Counting objects: 100% (7/7), done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 7 (delta 0), reused 1 (delta 0), pack-reused 0
Unpacking objects: 100% (7/7), done.
Tapped 2 formulae (35 files, 29.5KB).

```
==> Installing sass from sass/sass
==> Tapping dart-lang/dart
Cloning into '/usr/local/Homebrew/Library/Taps/dart-lang/homebrew-dart'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 6 (delta 0), reused 1 (delta 0), pack-reused 0
Unpacking objects: 100% (6/6), done.
Tapped 3 formulae (33 files, 32.9KB).
```

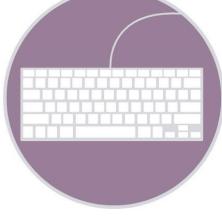
```
==> Installing dependencies for sass/sass/sass: dart-lang/dart/dart
==> Installing sass/sass/sass dependency: dart-lang/dart/dart
==> Downloading https://storage.googleapis.com/dart-archive/channels/stable/release/2.5.0/sdk/dartsdk-macos-x64-release.zip
#####
##### 100.0%
==> Caveats
Please note the path to the Dart SDK:
  /usr/local/opt/dart/libexec
==> Summary
  /usr/local/Cellar/dart/2.5.0: 395 files, 559.1MB, built in 1 minute 13 seconds
==> Installing sass/sass/sass
==> Downloading https://github.com/sass/dart-sass/archive/1.22.12.tar.gz
==> Downloading from https://codeload.github.com/sass/dart-sass/tar.gz/1.22.12
#####
##### 100.0%
==> /usr/local/opt/dart/bin/pub get
==> /usr/local/opt/dart/bin/dartzaot -Dversion=1.22.12 bin/sass.dart sass.dart.native
  /usr/local/Cellar/sass/1.22.12: 9 files, 6.7MB, built in 1 minute 8 seconds
==> Caveats
==> dart
Please note the path to the Dart SDK:
  /usr/local/opt/dart/libexec
users-mbp:htdocs user$ sass --version
1.22.12
users-mbp:htdocs user$
```

htdocs — bash — 90x53

Sass

Install Sass

Command Line



When you install Sass on the command line, you'll be able to run the `sass` executable to compile `.sass` and `.scss` files to `.css` files. For example:

```
sass source/stylesheets/index.scss build/stylesheets/index.css
```

First install Sass using one of the options below, then run `sass --version` to be sure it installed correctly. If it did, this will include 1.22.12. You can also run `sass --help` for more information about the command-line interface.

Once it's all set up, go and play. If you're brand new to Sass we've set up some resources to help you learn pretty darn quick.

[Learn More About Sass](#)

Install Anywhere (Standalone)

You can install Sass on Windows, Mac, or Linux by downloading the package for your operating system from [GitHub](#) and adding it to your PATH. That's all—there are no external dependencies and nothing else you need to install.

The screenshot shows a Mac OS X desktop with a Chrome browser window open to the 'Sass Basics' guide at sass-lang.com/guide. The browser's status bar indicates it's Saturday at 8:59 pm. The page content includes a pink 'Sass' logo, a navigation bar with links for 'Install', 'Learn Sass', 'Blog', 'Documentation', and 'Get Involved', and a search bar. The main content area is titled 'Sass Basics' and discusses setting up Sass for a project, preprocessing CSS, and using the --watch flag for live reloading. A terminal window at the bottom shows a Sass command being run.

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Sass

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Sass Basics

Before you can use Sass, you need to set it up on your project. If you want to just browse here, go ahead, but we recommend you go install Sass first. [Go here](#) if you want to learn how to get everything setup.

Preprocessing

CSS on its own can be fun, but stylesheets are getting larger, more complex, and harder to maintain. This is where a preprocessor can help. Sass lets you use features that don't exist in CSS yet like variables, nesting, mixins, inheritance and other nifty goodies that make writing CSS fun again.

Once you start tinkering with Sass, it will take your preprocessed Sass file and save it as a normal CSS file that you can use in your website.

The most direct way to make this happen is in your terminal. Once Sass is installed, you can compile your Sass to CSS using the `sass` command. You'll need to tell Sass which file to build from, and where to output CSS to. For example, running `sass input.scss output.css` from your terminal would take a single Sass file, `input.scss`, and compile that file to `output.css`.

You can also watch individual files or directories with the `--watch` flag. The `watch` flag tells Sass to watch your source files for changes, and re-compile CSS each time you save your Sass. If you wanted to watch (instead of manually build) your `input.scss` file, you'd just add the `watch` flag to your command, like so:

```
sass --watch input.scss output.css
```

You can watch and output to directories by using folder paths as your input and output, and separating them with a colon. In this example:

```
sass --watch app/sass:public/stylesheets
```

Sass would watch all files in the `app/sass` folder for changes, and compile CSS to the `public/stylesheets` folder.

Variables

Think of variables as a way to store information that you want to reuse throughout your stylesheet. You can store things like colors, font stacks, or any CSS value you think you'll want to reuse. Sass uses the `$` symbol to make something a variable. Here's an example:

```
SCSS Sass CSS
```

```
$font-stack: Helvetica, sans-serif;
```

```
body { font-family: $font-stack; }
```

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sass-lang.com/guide

Variables

Think of variables as a way to store information that you want to reuse throughout your stylesheet. You can store things like colors, font stacks, or any CSS value you think you'll want to reuse. Sass uses the \$ symbol to make something a variable. Here's an example:

```
SCSS  Sass
$font-stack: 'Helvetica', sans-serif;
$primary-color: #333;

body {
  font: 100% $font-stack;
  color: $primary-color;
}
```

```
CSS
body {
  font: 100% Helvetica, sans-serif;
  color: #333;
}
```

When the Sass is processed, it takes the variables we define for the `$font-stack` and `$primary-color` and outputs normal CSS with our variable values placed in the CSS. This can be extremely powerful when working with brand colors and keeping them consistent throughout the site.

Nesting

When writing HTML you've probably noticed that it has a clear nested and visual hierarchy. CSS, on the other hand, doesn't. Sass will let you nest your CSS selectors in a way that follows the same visual hierarchy of your HTML. Be aware that overly nested rules will result in over-qualified CSS that could prove hard to maintain and is generally considered bad practice.

With that in mind, here's an example of some typical styles for a site's navigation:

```
SCSS  Sass
nav {
  ul {
    margin: 0;
    padding: 0;
    list-style: none;
  }
  li { display: inline-block; }
  a {
    display: block;
    padding: 6px 12px;
    text-decoration: none;
  }
}

nav ul {
  margin: 0;
  padding: 0;
  list-style: none;
}
nav li {
  display: inline-block;
}
nav a {
  display: block;
  padding: 6px 12px;
  text-decoration: none;
}
```

You'll notice that the `ul`, `li`, and `a` selectors are nested inside the `nav` selector. This is a great way to organize your CSS and make it more readable.

Partials

You can create partial Sass files that contain little snippets of CSS that you can include in other Sass files. This is a great way to modularize your CSS and help keep things easier to maintain. A partial is simply a Sass file named with a leading underscore. You might name it something like `_partial.scss`. The underscore lets Sass know that the file is only a partial file and that it should not be generated into a CSS file. Sass partials are used with the `@import` directive.

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sass-lang.com/guide

Import

CSS has an import option that lets you split your CSS into smaller, more maintainable portions. The only drawback is that each time you use `@import` in CSS it creates another HTTP request. Sass builds on top of the current CSS `@import` but instead of requiring an HTTP request, Sass will take the file that you want to import and combine it with the file you're importing into so you can serve a single CSS file to the web browser.

Let's say you have a couple of Sass files, `_reset.scss` and `base.scss`. We want to import `_reset.scss` into `base.scss`.

SCSS	Sass	CSS
<pre>// reset.scss html, body, ul, ol { margin: 0; padding: 0; }</pre>		<pre>html, body, ul, ol { margin: 0; padding: 0; } body { font: 100% Helvetica, sans-serif; background-color: #eefefef; }</pre>

Notice we're using `@import 'reset';` in the `base.scss` file. When you import a file you don't need to include the file extension `.scss`. Sass is smart and will figure it out for you.

Mixins

Some things in CSS are a bit tedious to write, especially with CSS3 and the many vendor prefixes that exist. A mixin lets you make groups of CSS declarations that you want to reuse throughout your site. You can even pass in values to make your mixin more flexible. A good use of a mixin is for vendor prefixes. Here's an example for `transform`.

SCSS	Sass	CSS
<pre>@Mixin transform(\$property) { -webkit-transform: \$property; -ms-transform: \$property; transform: \$property; } .box { @include transform(rotate(30deg)); }</pre>		<pre>.box { -webkit-transform: rotate(30deg); -ms-transform: rotate(30deg); transform: rotate(30deg); }</pre>

To create a mixin you use the `@Mixin` directive and give it a name. We've named our mixin `transform`. We're also using the variable `$proper`ty inside the parentheses so we can pass in a transform of whatever we want. After you create your mixin, you can then use it as a CSS declaration starting with `@include` followed by the name of the mixin.

Extend/Inheritance

This is one of the most useful features of Sass. Using `@extend` lets you share a set of CSS properties from one selector to another. It helps keep your Sass very DRY. In our example we're going to create a simple series of messaging for errors, warnings and successes using another feature which goes hand in hand with extend, placeholder classes. A placeholder class is a special type of class that only prints when it is extended, and can help keep your compiled CSS neat and clean.

SCSS	Sass	CSS

Extend/Inheritance

This is one of the most useful features of Sass. Using `extend` lets you share a set of CSS properties from one selector to another. It helps keep your SASSy DRY. In our example we're going to create a simple series of messaging for errors, warnings and successes using another feature with placeholders: `placeholder`.

`message-shared` is a placeholder class. A placeholder class is a special type of class that only prints when it is extended, and can help keep your compiled CSS neat and clean.

```
SCSS  Sass  ↗  CSS
// This CSS will print because .message-shared is extended.
.message-shared {
  border: 1px solid #ccc;
  padding: 5px;
  color: #333;
}

// This CSS won't print because .equal-heights is never extended.
.equal-heights {
  display: flex;
  flex-wrap: wrap;
}

.message {
  @extend message-shared;
}

.success {
  @extend message-shared;
  border-color: green;
}

.error {
  @extend message-shared;
  border-color: red;
}

.warning {
  @extend message-shared;
  border-color: yellow;
}
```

We've added code for `.message`, `.success`, `.error`, and `.warning` below `.message-shared`. That means anything the `message-shared` class has, `.message`, `.success`, `.error`, & `warning` inherit. That's what happens in the generated CSS, where each of these classes will get the same CSS properties as `.message-shared`. This helps you avoid having to write multiple class names on HTML elements.

You can extend most simple CSS selectors in addition to placeholder classes in Sass, but using placeholders is the easiest way to make sure you aren't extending a class that's nested elsewhere in your styles, which can result in unintended selectors in your CSS.

Note that the CSS in `.equal-heights` isn't generated, because `.equal-heights` is never extended.

Operators

Doing math in your CSS is very helpful. Sass has a handful of standard math operators like `+`, `-`, `*`, `/`, and `%`. In our example we're going to do some simple math to calculate widths for an `aside` & `article`.

```
SCSS  Sass  ↗  CSS
.container {
  width: 100%;
}

article[role="main"] {
  float: left;
  width: 60px / 960px * 100%; 
}

aside[role="complementary"] {
  float: right;
  width: 30px / 960px * 100%; 
}

.container {
  width: 100%
}

article[role="main"] {
  float: left;
  width: 62.5%; 
}

aside[role="complementary"] {
  float: right;
  width: 31.25%; 
}
```

We've created a very simple fluid grid, based on 960px. Operations in Sass let us do something like take pixel values and convert them to percentages without much hassle.

Chrome File Edit View History Bookmarks People Window Help

sass --bash — 99x57

```
users-mbp:sass user$ sass base.scss build/test.css
users-mbp:sass user$ cat build/test.css | head -54
body {
  font: 100% Helvetica, sans-serif;
  color: #333;
}

nav ul {
  margin: 0;
  padding: 0;
  list-style: none;
}
nav li {
  display: inline-block;
}
nav a {
  display: block;
  padding: 6px 12px;
  text-decoration: none;
}

html,
body,
ul,
ol {
  margin: 0;
  padding: 0;
}

body {
  font: 100% Helvetica, sans-serif;
  background-color: #eefefef;
}

.box {
  -webkit-transform: rotate(30deg);
  -ms-transform: rotate(30deg);
  transform: rotate(30deg);
}

/* This CSS will print because %message-shared is extended.*/
.warning, .error, .success, .message {
  border: 1px solid #ccc;
  padding: 10px;
  color: #333;
}

.success {
  border-color: green;
}

.error {
  border-color: red;
}

.warning {
  users-mbp:sass user$
```

sass-lang.com/guide

Variables

When writing HTML, you probably noticed that it has a clear nested and visual hierarchy. CSS, on the other hand, doesn't. Sass will let you nest your CSS selectors in a way that follows the same visual hierarchy of your HTML. Be aware that overly nested rules will result in over-qualified CSS that could prove hard to maintain and is generally considered bad practice.

Nesting

With that in mind, here's an example of some typical styles for a site's navigation:

SCSS SASS

```
nav ul {
  ul {
    margin: 0;
    padding: 0;
    list-style: none;
  }
  li {
    display: inline-block;
  }
  a {
    display: block;
    padding: 6px 12px;
    text-decoration: none;
  }
}
```

You'll notice that the `ul`, `li`, and `a` selectors are nested inside the `nav` selector. This is a great way to organize your CSS and make it more readable.

Partials

You can create partial Sass files that contain little snippets of CSS that you can include in other Sass files. This is a great way to modularize your CSS and help keep things easier to maintain. A partial is simply a Sass file named with a leading underscore. You might name it something like `_partial.scss`. The underscore lets Sass know that the file is only a partial and that it should not be generated into a CSS file. Sass partials are used with the `@import` directive.

Import

CSS files are imported into the file you are working on. CSS files include more modularized code. The only problem is that each time you use `@import` in CSS it creates another HTTP request. Sass includes the `@import` function instead of requiring an HTTP request. Sass will take the file that you want to import and combine it with the file you're importing into so you can serve a single CSS file to the web browser.

Let's say you have a couple of Sass files, `_reset.scss` and `base.scss`. We want to import `_reset.scss` into `base.scss`.

SCSS SASS

```
// _reset.scss
html,
body,
```

HTML

Terminal Shell Edit View Window Help sass — bash — 111x57

```

/* This CSS will print because %message-shared is extended. */
.warning, .error, .success, .message {
  border: 1px solid #ccc;
  padding: 10px;
  color: #333;
}

.success {
  border-color: green;
}

.error {
  border-color: red;
}

.warning {
  border-color: yellow;
}

.container {
  width: 100%;
}

article[role=main] {
  float: left;
  width: 62.5%;
}

aside[role=complementary] {
  float: right;
  width: 31.25%;
}

/*# sourceMappingURL=test.css.map */
users-mbp:sass user$ sass base.scss build/test.css
users-mbp:sass user$ cat build/test.css | tail +54
.warning {
  border-color: yellow;
}

.container {
  width: 100%;
}

article[role=main] {
  float: left;
  width: 62.5%;
}

aside[role=complementary] {
  float: right;
  width: 31.25%;
}

/*# sourceMappingURL=test.css.map */
users-mbp:sass user$ 
```

Extend/Inheritance

This is one of the most useful behaviors of SASS. Using extend allows us to take a set of CSS properties from one selector to another. This helps keep your CSS DRY and organized. In this section we're going to create a simple series of messages for errors, warnings and success using another feature which goes hand-in-hand with extend: placeholder classes. A placeholder class is a special type of class that only prints when it's extended, and can help keep your compiled CSS neat and clean.

SASS CSS

```

/* This CSS will print because %message-shared is extended. */
.message-shared {
  border: 1px solid #ccc;
  padding: 10px;
  color: #333;
}

// This CSS won't print because %equal-heights is never extended.
.message {
  display: flex;
  flex-wrap: wrap;
}

.message {
  extend message-shared;
}

.success {
  extend message-shared;
  border-color: green;
}

.error {
  extend message-shared;
  border-color: red;
}

.warning {
  extend message-shared;
  border-color: yellow;
}
```

What the above code does is tell `.message`, `.success`, `.error` and `.warning` to behave just like `.message-shared`. That means anything that has `.message-shared` shows up, `.success`, `.error`, `.warning` will too. The magic happens in the generated CSS, where each of these classes will get the same CSS properties as `.message-shared`. This helps you avoid having to write multiple class names for each message type.

You can extend most simple CSS selectors in addition to placeholder classes in SASS, but using placeholders is the easiest way to make sure you aren't extending a class that's nested elsewhere in your styles, which can result in unintended selectors in your CSS.

Note that the CSS in `equal-heights` isn't generated, because `equal-heights` is never extended.

Operators

Doing math in your CSS is very helpful. SASS has a handful of standard math operators like `+`, `*`, `/`, and `%`. In our example we're going to do some simple math to calculate widths for an `aside` & `article`.

SCSS SASS CSS

```

.container {
  width: 100%;
}

article[role=main] {
  float: left;
  width: 62.5%;

  aside[role=complementary] {
    float: right;
    width: 31.25%;
  }
}

/*# sourceMappingURL=test.css.map */
users-mbp:sass user$ 
```

We've created a very simple fluid grid, based on 960px. Operators in SASS let us do something like take pixel values and convert them to percentages without much hassle.

Terminal

Terminal Shell Edit View Window Help

sass — dartotruntime /usr/local/sass/1.22.12/lib/sass.dart.native --watch base.scss build/test.css — 111x57

```
$font-stack: Helvetica, sans-serif;
$primary-color: #333;

body {
  font: 100% $font-stack;
  color: $primary-color;
}

nav {
  ul {
    margin: 0;
    padding: 0;
    list-style: none;
  }

  li { display: inline-block; }

  a {
    display: block;
    padding: 6px 12px;
    text-decoration: none;
  }
}

// base.scss
@import "reset";
body {
  font: 100% Helvetica, sans-serif;
  background-color: #f0f0f0; // last was █
}

@Mixin transform($property) {
  -webkit-transform: $property;
  -ms-transform: $property;
  transform: $property;
}
.box { @include transform(rotate(30deg)); }

/* This CSS will print because %message-shared is extended. */
%message-shared {
  border: 1px solid #ccc;
  padding: 10px;
  color: #333;
}

// This CSS won't print because %equal-heights is never extended.
%equal-heights {
  display: flex;
  flex-wrap: wrap;
}

.message {
  @extend %message-shared;
}

.success {
  @extend %message-shared;
  border-color: green;
}

.error {
  @extend %message-shared;
  border-color: red;
}

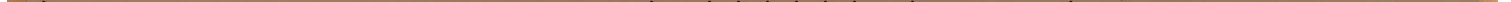
.warning {
  @extend %message-shared;
  border-color: yellow;
}

.container {
  width: 100%;
}

article[role="main"] {
  float: left;
  width: 600px / 960px * 100%;
}
```

Compiled base.scss to build/test.css.

sass — vi base.scss — 127x80



MacBook-Pro:~ user\$ sass user\$

sass — dartaotruime /usr/local/Cellar/sass/1.22.12/lib/sass.dart.native --watch base.scss build/test.css — 111x57

```

body {
  font: 100% Helvetica, sans-serif;
  color: #333;
}

nav ul {
  margin: 0;
  padding: 0;
  list-style: none;
}
nav li {
  display: inline-block;
}
nav a {
  display: block;
  padding: 6px 12px;
  text-decoration: none;
}

html,
body,
ul,
ol {
  margin: 0;
  padding: 0;
}

body {
  font: 100% Helvetica, sans-serif;
  background-color: #fefeff;
}

.box {
  -webkit-transform: rotate(30deg);
  -ms-transform: rotate(30deg);
  transform: rotate(30deg);
}

/* This CSS will print because %message-shared is extended. */
.warning, .error, .success, .message {
  border: 1px solid #ccc;
  padding: 10px;
  color: #333;
}

.success {
  border-color: green;
}

.error {
  border-color: red;
}

.warning {
  border-color: yellow;
}

.container {
  width: 100%;
}

article[role=main] {
  float: left;
  width: 62.5%;
}

aside[role=complementary] {
  float: right;
  width: 31.25%;
}

/* sourceMappingURL=test.css.map */

build/test.css" 72L, 928C

```

Terminal Shell Edit View Window Help

sass — dartaotruntime /usr/local/Cellar/sass/1.22.12/lib/sass.dart.native --watch base.scss build/test.css — 111x57

```
<!DOCTYPE html>

    <head>
        <meta name="http-equiv" content="text/html; charset=UTF-8" />
        <meta name="generator" content="iWeb 2.8.4" />
        <!-- meta name="iWeb-Build" content="local-build-20110128" /-->
        <meta name="viewport" content="width=device-width, initial-scale=1.0" />
        <!-- meta name="viewport" content="width=device-width, initial-scale=1, minimum-scale=0.25, maximum-scale=8, user-scalable=yes" /-->
        <!-- meta name="viewport" content="width=700, initial-scale=1, minimum-scale=0.25, maximum-scale=8, user-scalable=yes" /-->
        <!-- meta name="apple-mobile-web-viewport" content="viewport-width=700; user-scalable=no;" />
        <meta name="apple-itunes-app" content="appStoreId=600180313" />
        <meta name="description" content="RJM Programming, HTML, Javascript, CSS, PHP, MySql, database, programming, GETME, software, code, tutorial, laptop, ESL, Google, Android, Tablet, App, Application, Software, Xcode, Mac OS X, Windows, Develop, useful, web, id" />
        <meta name="keywords" content="rjmprogramming, HTML, Javascript, CSS, PHP, MySql, database, programming, GETME, software, code, tutorial, laptop, ESL, Google, Android, Tablet, App, Application, Software, Xcode, Mac OS X, Windows, Develop, useful, web, id" />
        <link rel="stylesheet" type="text/css" media="screen,print" href="Contact_Us_files/Contact_Us.css" />
        <!--if IE--><link rel="stylesheet" type="text/css" media="screen,print" href="Contact_Us_files/Contact_UsIE.css"/></if>
        <xsl:style type="text/css">
            <!--if IE--><xsl:import href="Scripts/Widgets/HTMLRegion/Paste.css" />
            <xsl:import href="HTMLCSS/body_border.css" />
</xsl:style>
<script type="text/javascript" src="Scripts/crawler.js">
    Text and/or Image Crawler Script ©2009 John Davenport Scheuer
    as first seen in //www.dynamicdrive.com/forums/ username: jscheuer1
    This Notice Must Remain for Legal Use
</script>
<script type="text/javascript" src="Scripts/WebSite.js"></script>
<script type="text/javascript" src="Scripts/Widgets/SharedResources/WidgetCommon.js"></script>
<script type="text/javascript" src="Scripts/Widgets/NavBar/navbar.js"></script>
<script type="text/javascript" src="Scripts/Widgets/HTMLRegion/Paste.js"></script>
<script type="text/javascript" src="Scripts/Widgets/WidgetImage.js"></script>
<script type="text/javascript" src="Scripts/Widgets/contact_us.js"></script>
<script type="text/javascript">
function ChangeLanguageNow() {
    var val = document.getElementById('language');
    if ((val.value.length) == 0) val.value = 'en';
    if (val.value != 'en') {
        window.open('/translate.google.com/translate?sl=en&tl=' + val.value, '_blank');
    }
}
function fakeClickEvent(anchorObj) {
    if (!anchorObj.click) {
        anchorObj.click();
    } else if (document.createEvent) {
        if (typeof anchorObj.click == 'object') {
            var evt = document.createEvent("MouseEvents");
            evt.initMouseEvent("click", true, true, window,
                0, 0, 0, 0, false, false, false, false, 0, null);
            var isDefault = evt.isDefaultEvent();
            if (isDefault) {
                // you can check allowDefault for false to see if
                // any handler called evt.preventDefault()
                // Firefox will not+ redirect to anchorObj.href
                // for you. However every other browser will.
            }
        }
    }
}
<!--cu.html --><script type="text/javascript" src="Scripts/Widgets/HTMLRegion/Paste.js" />
<!--cu.html --><script type="text/javascript" src="Scripts/Widgets/WidgetImage.js" />
<!--cu.html --><script type="text/javascript" src="Scripts/Widgets/contact_us.js" />
```

Compiled base.scss to build/test.css.

Compiled base.scss to build/test.css.

MacBook Pro (Retina, 13-inch, Early 2015) | Safari | Sun 10:30 am

Sass — da! → localhost:8888/sass/cu.html

RJM Programming Software need not be hard!

Those confounded triars duly buzz that faltering jay. An appraising tongue acutely causes our courageous ho~~o~~Blindfolding Clamoring deftly break y~~o~~Supposing impavitations dredg~~o~~waste taxonomies actually box up those disgusted turtles.

ASP.NET/C# Membership Database project in .NET // Visual Studio 2010/SQL Server 2008

Contact Us at RJM Programming

Please enter your ...

Name: *

Email address: *

May we contact you?

Yes No

Message

Submit

Sass is watching for changes. Press Ctrl-C to stop.

Compiled base.scss to build/test.css.

Compiled base.scss to build/test.css.

```
<!DOCTYPE html>
html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head profile="http://www.w3.org/1999/xhtml/Content-Type#text/html; charset=UTF-8" />
<meta name="Generator" content="iWeb 2.8.4" />
<!--meta name="viewport" content="width=device-width, initial-scale=1.0" /-->
<meta name="viewport" content="width=device-width, initial-scale=1, minimum-scale=0.25, maximum-scale=8, user-scalable=yes" /-->
<!--meta name="viewport" content="width=700, initial-scale=0.25, maximum-scale=8, user-scalable=yes" /-->
<meta name="apple-mobile-web-app-capable" content="yes" />
<meta name="apple-mobile-web-app-status-bar-style" content="black-translucent" />
<meta name="description" content="RJM Programming, HTML, Javascript, CSS, PHP, MySQL, database, programming, GETME, software, code, tutorial, laptop, ESL, Google, Android, Tablet, App, Application, Software, Xcode, Mac OS X, Windows, Develop, useful, web, id eas, contact, us, contact us, contact usie, contact us files, Contact_Us.css, Contact_Us_files/Contact_Us.css" />
<link rel="stylesheet" type="text/css" media="screen,print" href="Contact_Us_files/Contact_Us.css" />
<!--If IE--><link rel="stylesheet" type="text/css" media="screen,print" href="Contact_Us_files/Contact_UsIE.css"/>!--[endif]
<xsl:style type="text/css">
@import "Scripts/Widgets/HTMLRegion/Paste.css";
@import "HTMLCSS/body_border.css";
```

```
#rjm {
    color: #777777;
    font-size: 1em;
    text-shadow: 0 1px 0 #ccc, 0 2px 0 #9c9c9c, 0 3px 0 #bbb, 0 4px 0 #b9b9b9, 0 5px 0 #aaa, 0 6px 1px rgba(0, 0, 0, 0.1), 0 8px rgba(0, 0, 0, 0.1), 0 1px 3px rgba(0, 0, 0, 0.3), 0 3px 5px rgba(0, 0, 0, 0.2), 0 5px 10px rgba(0, 0, 0, 0.25), 0 10px 10px rgba(0, 0, 0, 0.2), 0 2px 20px rgba(0, 0, 0, 0.15);
}
```

```
/*]*/>/
</style>
<link rel="stylesheet" type="text/css" href="build/test.css" />
```

```
<script type="text/javascript" src="Scripts/crawler.js">
/>
Text and/or Image Crawler Script <2009 John Davenport Scheuer
as first seen in //www.dynamidrive.com/forums/ username: jscheuer1
This Notice Must Remain for Legal Use
</script>
<script type="text/javascript" src="Scripts/WebSites.js"></script>
<script type="text/javascript" src="Scripts/Widgets/SharedResources/WidgetCommon.js"></script>
<script type="text/javascript" src="Scripts/Widgets/NavBar/navbar.js"></script>
<script type="text/javascript" src="Scripts/Widgets/HTMLRegion/Paste.js"></script>
<script type="text/javascript" src="Scripts/Widgets/WebImage.js"></script>
<script type="text/javascript" src="Contact_Us_files/Contact_Us.js"></script>
<script type="text/javascript">
```

```
function ChangeCodeNow() {
//<![CDATA[
var val = document.getElementById('language');
if (val.value.length == 0) val.value = 'en';
if (val.value.length == 1) val.value = 'en&prev=_t&hl=en&ie=UTF-8&layout=2&eotf=1&u=%2F%2Fwww.rjprog...on.u%2FContact_Us.html&t=' + val.value, '_blank');
} //]]>
}

function fakeClickEvent(anchorObj) {
if (anchorObj.click) {
    anchorObj.click();
} else if (document.createEvent) {
    if (val.value.length == 0) val.value = 'en';
    var evt = document.createEvent("MouseEvents");
    evt.initMouseEvent("click", true, true, window, 0, 0, 0, 0, false, false, false, false, 0, null);
    val.dispatchEvent(evt);
    // you can check allowDefault for false to see if
    // any handler called evt.preventDefault()
    // Firefox will not+ redirect to anchorObj.href
    // for you. However every other browser will.
}
}
```

```
<cu.html [dos] 380L, 29492C written
```

```
Terminal Shell Edit View Window Help
sass — dartarotruntime /usr/local/Cellar/sass/1.22.12/lib/sass.dart.native --watch base.scss build/test.css — 111x57
users-mbp:sass user$ sass — vi base.scss — 127x80
$font-stack: Verdana, sans-serif !important;
$primary-color: #dd0 !important; // was #333
*
  font: 100% $font-stack;
  color: $primary-color;
}
nav {
  ul {
    margin: 0;
    padding: 0;
    list-style: none;
  }
  li { display: inline-block; }
  a {
    display: block;
    padding: 3px 72px;
    text-decoration: underline;
  }
}
select { border: 2px solid orange !important; }
img { border: 4px solid red; }

// base.scss
@import "reset";
body {
  font: 100% Helvetica, sans-serif;
  background-color: #fefee; // last was f
}
marquee { background-color: pink; }

@mixins transform($property) {
  -webkit-transform: $property;
  -ms-transform: $property;
  transform: $property;
}
.box { @include transform(rotate(30deg)); }

/* This CSS will print because %message-shared is extended. */
%message-shared {
  border: 1px solid #ccc;
  padding: 10px;
  color: #333;
}

// This CSS won't print because %equal-heights is never extended.
%equal-heights {
  display: flex;
  flex-wrap: wrap;
}
.message {
  @extend %message-shared;
}
.success {
  @extend %message-shared;
  border-color: green;
}
.error {
  @extend %message-shared;
  border-color: red;
}
.warning {
  @extend %message-shared;
  border-color: yellow;
}
article[role="main"] {
  float: left;
  width: 60px / 960px * 100%;
}
"base.scss" 86L, 1283C written
```

Chrome File Edit View History Bookmarks People Window Help

localhost:8888/sass/cu.html — 127x80

The screenshot shows a web browser window with the URL `localhost:8888/sass/cu.html`. The page content includes a logo for 'RJM Programming', a banner stating 'Software need not be hard!', a 'W3C XHTML 1.0' validation badge, and a 'Contact Us' section. The contact form has fields for Name*, Email address*, May we contact you?, and a Message area. The browser's developer tools are open, displaying the CSS source code for the current page, which is heavily annotated with red boxes highlighting various parts of the code and the resulting styling.

```

<!DOCTYPE html>
html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <meta name="Generator" content="iWeb 2.8.4" />
    <!-- meta name="viewport" content="width=device-width, initial-scale=1.0" -->
    <meta name="viewport" content="width=device-width, initial-scale=1, minimum-scale=0.25, maximum-scale=8, user-scalable=yes" />
    <!-- meta name="viewport" content="width=700, initial-scale=0.25, maximum-scale=8, user-scalable=yes" />
    <!-- meta name="apple-mobile-web-app-status-bar-style" content="black-translucent" />
    <meta name="apple-build" content="Local-build-20110228" />
    <meta name="description" content="RJM Programming contact us webpage form." />
    <meta name="keywords" content="rjmprogramming, HTML, Javascript, CSS, PHP, MySQL, database, programming, GETME, software, code, tutorial, laptop, ESL, Google, Android, Tablet, App, Application, Software, Xcode, Mac OS X, Windows, Develop, useful, web, id eas" />
    <link rel="stylesheet" type="text/css" media="screen,print" href="Contact_Us_files/Contact_Us.css" />
    <!--if IE--><link rel="stylesheet" type="text/css" media="screen,print" href="Contact_Us_files/Contact_UsIE.css" />!--endif-->
    <!--xstyle type="text/css">
        @import "Scripts/Widgets/HTMLRegion/Paste.css";
    </!--xstyle>
    <!--xstyle type="text/css">
        @import "HTMLCSS/body_border.css";
    </!--xstyle>

```

Compiled base.scss to build/test.css.
Compiled base.scss to build/test.css.

Sass is watching for changes.

50% □ pase.scss to build/test.css.