# Aaron Reisman

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- 10+ Years of Front-End Experience.
- Frequently commits open source code,
- Likes: Music, Technology and being Happy.

Hello,

My name is Aaron Reisman.

I've got 10+ years of front-end development experience.

I frequently commit open source code.

I like music, technology, and being happy, as I'm sure most of you do.

# Scalable Front-End Architecture using Sass

So... Todays talk will be on Scalable Front-End Architecture using Sass.

# What is Sass?

- Sass is a CSS Preprocessor
- Sass has lots of interesting features
  - Variables
  - Nesting
  - placeholder selectors
  - Mixins
  - Selector inheritance
  - and more
- Sass has two syntaxes. The main one is Scss

How many of you have heard of Sass?

How many of you use Sass?

Alright, well for those of you who don't know what Sass is...

Sass is a CSS Preprocessor.

It has a lot of interesting features like, Variables, Nesting, Placeholder Selectors, Mixins, Selector Inheritance, and more.

Sass has 2 syntaxes. The main one being Scss. and it's the one I'll be using today.

# Common Sass Mistakes

- Over use of nested selectors.
- Unintentional Duplication of CSS Properties.

before we get into scalable architecture, I'd like to talk about a few common mistakes that are often overlooked when working with Scss.

# Common Sass Mistakes

- Over use of nested selectors.
- Unintentional Duplication of CSS Properties.

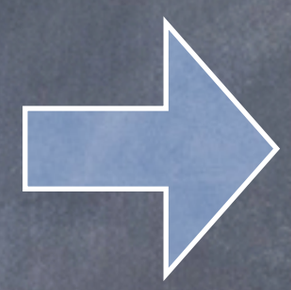
the first one being over use of nested selectors.

# Over use of nested selectors.

**Scss**

```
.module {
  .hd {}
  .bd {
    ul {
      li {
      }
    }
  }
}
```

**BAD**



**CSS**

```
.module {}
.module .header {}
.module .bd {}
.module .bd ul {}
.module .bd ul li {}
```

```
.module {}
.module-hd {}
.module-bd {}
.module-list {}
.module-item {}
```

**GOOD**

```
.module {}
.module-hd {}
.module-bd {}
.module-list {}
.module-item {}
```

If you look at the code on the left, we've got a module with a few classes and elements associated with it.
lets look at the compiled source of this module on the right.

The reasons why this might be considered bad is

1. The selector engine is working more then it needs to.
2. You're directly associating a element in your style, and if you ever decided to use another element in its place, you'd have to rewrite your code.
3. There isn't a great way to cognitively make a connection to your css in your markup. Hold on to this thought, we will be coming back to it shortly.

**CHANGE SLIDE**

all 3 of these problems are solved in the example below.
we've eliminated the over-specified selectors, made each of the classes that are associated with the module clear and concise, and now allow the use of any element with our new

# Common Sass Mistakes

- Over use of nested selectors.
- Unintentional Duplication of CSS Properties.

The next thing I'd like to briefly talk about is unintentional duplication of CSS Properties.

# Unintentional Duplication of CSS

**Scss** **Problem** **CSS**

```
@mixin inline-block {
        display: inline-block;
        *display: inline;
        *zoom: 1;
}
.module-a {
        @include inline-block;
}
.module-b {
        @include inline-block;
}
```

```
.module-a {
        display: inline-block;
        *display: inline;
        *zoom: 1;
}
.module-b {
        display: inline-block;
        *display: inline;
        *zoom: 1;
}
```

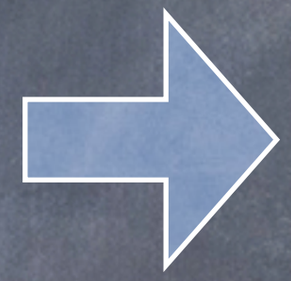
Take a look at the code on the left.

When you look at the code on the right, you might notice that the properties we've defined are duplicated between both rules.
This is not ideal.

# Unintentional Duplication of CSS

**Scss** **Solution** **CSS**

```
.ibf {
     @include inline-block;
}
.my-module-a {
     @extends .ibf;
}
.my-module-b {
     @extends .ibf;
}
.my-module-c {
     @extends .ibf;
}
```



```
.ibf,
.my-module-a,
.my-module-b,
.my-module-c {
     display: inline-block;
     *display: inline;
     *zoom: 1;
}
```

Instead, we should create a base class and extend from it.

Look at the code on the left, it has the same flexibility as the code on the previous slide, but it compiles to a much more efficient result.

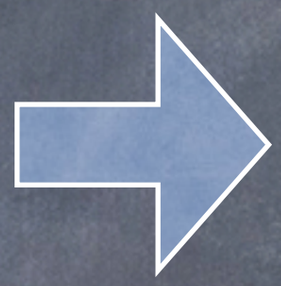
The code on the right has a base selector of .ibf. If you're wondering what .ibf is, its just an abbreviation for inline-block fix.

Anyway, if you don't need access to the base selector in your markup, the next slide contains a solution for this case.

# Unintentional Duplication of CSS

**Scss** **Solution** **CSS**

```
%ibf {
     @include inline-block;
}
.my-module-a {
     @extends %ibf;
}
.my-module-b {
     @extends %ibf;
}
.my-module-c {
     @extends %ibf;
}
```



```
.my-module-a,
.my-module-b,
.my-module-c {
     display: inline-block;
     *display: inline;
     *zoom: 1;
}
```

This is what’s called a placeholder selector.

Using placeholder selectors, the .ibf class is no longer compiled in the set of rules.

which is a nice optimization that may help your file size overtime.

# A few best practices

now that you’re familiar with the pitfalls of Scss, lets talk about best practices so you can start using them in your own projects.

I’d like to make this known, everything I will be talking about going forward are conceptual rules you can apply your development practices, to help separate the functionality of your site.

# Scss Directory Structure

- modules/  -- containers for content.
- layouts/  -- structure of modules.
- _base.scss -- structures layout.
- _helpers.scss -- common patterns.
- _state.scss  -- application state changes.
- _theme.scss -- visual style of the layout.
- style.scss  -- inherits everything above.

This is the directory structure I've found works really well for me,

There are Layouts, Modules, base, helpers, state, theme, and style.scss

# Thinking about modules

- A module structures the way content is displayed on a page
- use placeholder selectors for base modules styles that are commonly used, that don't need access to your markup.
- You can scope your modules by wrapping them in mixins.

First, lets talk about Modules.

The role of a Module is to structure the way content is displayed on a page.

Child classes of a module should be prefixed with that modules name.

For example, if your module's name was test, you should prefix your .header class .test-header

# Thinking about module modifiers

- A module modifier manipulates the structure of a module and can add extra functionality to those modules.
- Good use cases may be modules inside of other modules, UI like Dropdowns, or different variations of a module.
- To define a module modifier you use the keyword has. for for example, .has-dropdown or .has-inline-label.

Next, lets talk about Module modifiers.

The role of a modifier is to add additional functionality inside of a module, it may also modify the way a child module looks before hand.

The reasoning for the keyword `has` is so you have something to attach to and modify the child module as needed.

This also reads well, and will let you, or other developers know the current module has a child module, because of the keyword association.

# Thinking about layouts

- A Layout manipulates the way modules are displayed on a page
- No color should be applied directly on a layout
- layouts should be prefixed with an "L" to specify it's a layout.
  - example: .l-constrained

Ok, next up is layouts.

A Layouts purpose is to manipulate the way a module, or modules are displayed on a page.

No color should be applied directly on a layout.

Any class that represents a layout should be prefixed with an "L",
the reason for this goes back to that original point of being able to conceptually make a connection with your css, that this is something different than just a plain class,
it's a layout class!

# Thinking about _base.scss

- _base.scss is used to style the structure of your layout.

**Pause and ask if anyone has questions**

Great, now its time for the easy parts.

The base file is used to help structure anything that isn’t a layout or a module on your site.

No color should be applied to base, only structural properties like, box properties or floats should be used.

# Thinking about _helpers.scss

- _helpers.scss is used for common patterns to help you with the structure of your layout.
- use placeholder selectors if you don't plan to use them in your markup.

The helpers file is used for common patterns to aid with the development of your site.

Things you might consider making into helpers are text-alignment, floats, vertical-alignment and in some cases margin and padding helpers.

Use placeholder selectors for helpers you don't need access to in your markup.

# Thinking about _state.scss

- _state.scss is used for anything that modifies the original state of your application.
- you can prefix your sites layout (html, body, or main content layer) with a class of something like .is-active or .is-valid
- NOTE: If you have a module state change, put those states in that module.

The state file is used for anything that is modifying the state of your application.

Anything that is a state change should be prefixed with the keyword is.

Once again, the reason for the prefix of the class is so you can make a direct connection in your markup to see what kind of class is being applied to the particular element in question. a good example for a state class might be a form that “is valid”, and as an added bonus, now you immediately know which file to open.

# Thinking about _theme.scss

- _theme.scss is used for anything that directly correlates to the visual style of your site.
- properties that are considered theme: background color, text color, text-shadow, box-shadow, etc.

The theme file is strictly used for color properties.

One reason why you should do this is, if you have a designer that would like to work on the sites theme, they can, and without the worry of messing anything up, other then the colors, because this file only contains the colors of the site, so the structure of each module will stay perfectly intact.

# Thinking about style.scss

- style.scss is where all of your modules, layouts, helpers, etc get inherited
- Optionally include a css reset file here.

style.scss is strictly used to inherit all of the files in your project.

And if you want to use a css reset file, you can include that here.

# Other considerations

If you need to namespace your modules so others can use them on their sites, you can just create a separate CSS file and include the modules as mixins under an ID or class to keep your selectors from clashing with theirs.

If you need to namespace your modules so others can use them on their sites, you can just create a separate CSS file and include the modules as mixins under an ID or class to keep your selectors from clashing with theirs.

# Other considerations

If you'd like to support IE but also have the option to drop support later with ease, you could create a _ie.scss file that would have all the abstracted bug fixes for your styles and then you can remove the include for _ie.scss in your style.scss to easily drop support.

If you'd like to support IE but also have the option to drop support later with ease, you could create a _ie.scss file that would have all the abstracted bug fixes for your styles and then you can remove the include for _ie.scss in your style.scss to easily drop support.

# Tools of the trade

- Zen Coding
- Sublime Text 2 ( it's awesome )
  - Package Manager, Python Interpreter, TextMate Bundle Support
- Photoshop Extensions
  - CSS Hat
  - Guide Guide
- Dwarf - On Screen Rulers / Guides

# It's time for the code!