

UNIT TESTING IN SASS

Lindsey Wild



SPARKBOX

Who am I?

- ▶ **Front End Developer at Sparkbox in Pittsburgh, PA**
- ▶ **Proud coder for over 6 years**
- ▶ **Previously worked for DICK'S Sporting Goods & Giant Eagle**
- ▶ **Volleyball player, Cleveland Indians fan, rock concert junkie**

Slides

[**https://github.com/lindseywild/sass-unit-testing-presentation**](https://github.com/lindseywild/sass-unit-testing-presentation)

WHAT WILL WE LEARN?

UNIT TESTING IN SASS

Main Points

- ▶ **Refresher on Sass and Unit Testing**
- ▶ **Why & When**
 - Use cases
 - Real life scenarios
 - What to test
- ▶ **How**
 - Using True
 - Best practices for unit testing

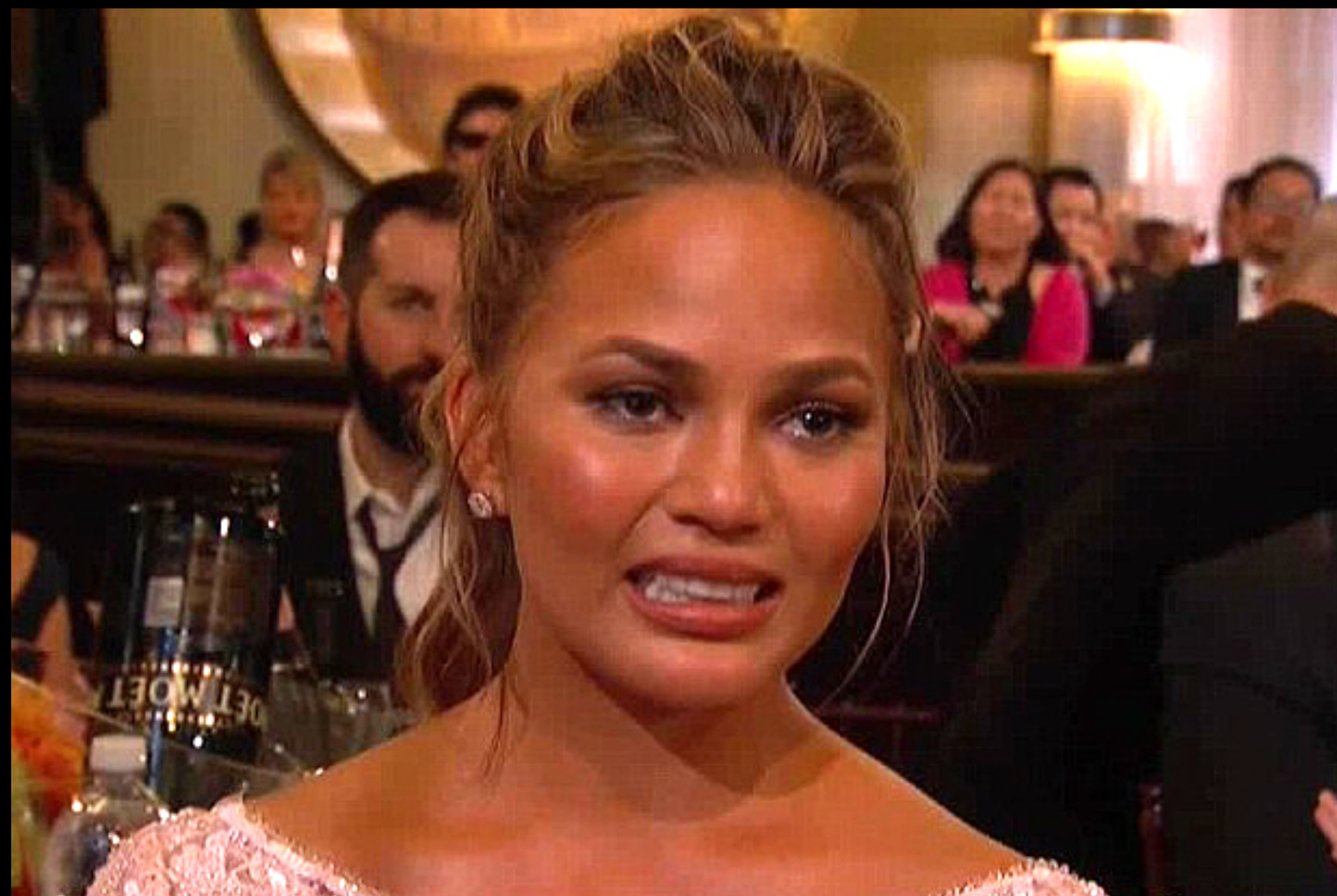
General Takeaways

- ▶ **Unit testing best practices**
- ▶ **Evaluating if a project would be a good candidate for Sass unit testing**

1 Design System, 6 Brands
6 Brands = Multiple websites
Multiple websites = so many teams!
So many teams = so many subscribers!

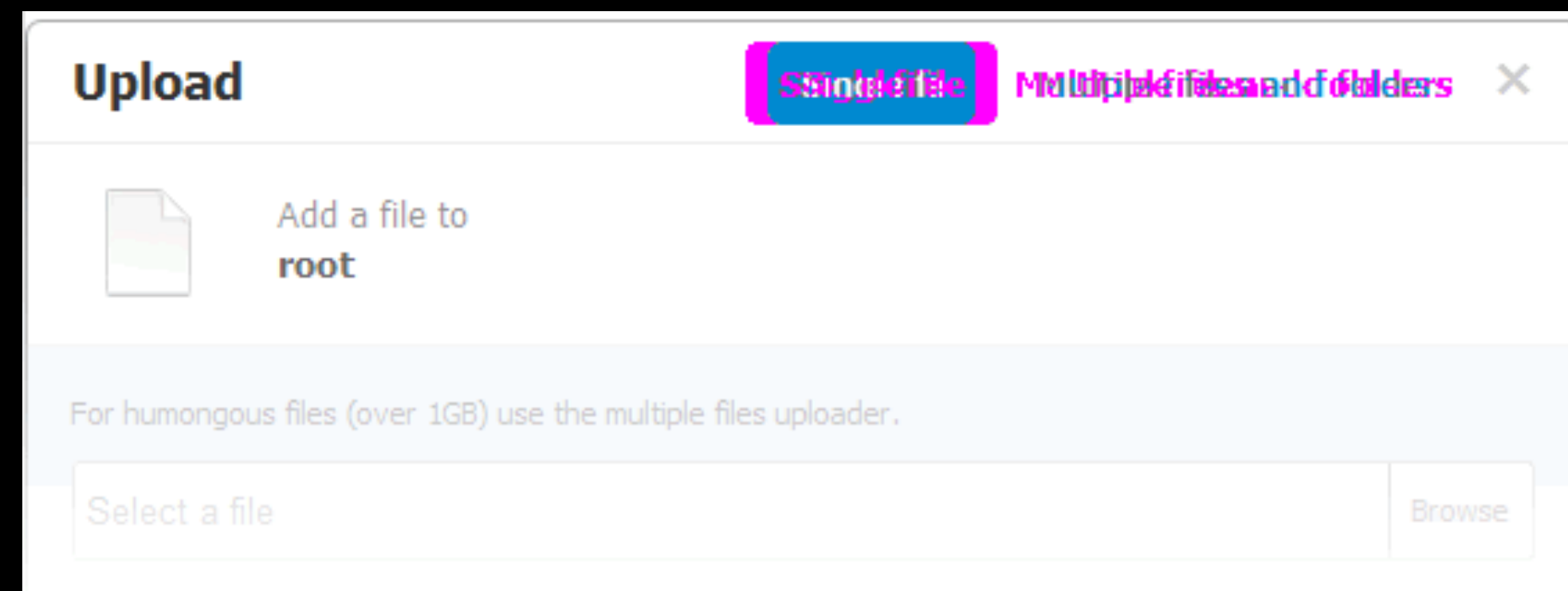
We're perfect though.
LOL JK

We've made mistakes.



38 SCSS Files
Each brand: ~8,000 lines of CSS

Visual Regression Testing Tools



Screenshot from PhantomCSS: <https://github.com/HuddleEng/PhantomCSS>

Can you Unit Test your Sass?



WHAT IS SASS?

UNIT TESTING IN SASS

Sass is a CSS Preprocessor

- ▶ More efficient, can use variables, nesting
- ▶ Break files into smaller chunks (partials) for better organization, more component driven
- ▶ Write functions and mixins to output conditional CSS



WHAT IS UNIT TESTING?

UNIT TESTING IN SASS

Unit Testing: Testing “Units”

- ▶ **Test small pieces of code, aka “units”**
- ▶ **Ensure functions and other logic is working as expected**
- ▶ **Isolate issues within smaller pieces for faster debugging**

WHY & WHEN TO UNIT TEST SASS

UNIT TESTING IN SASS

Why?

- ▶ **Alleviate some manual UI regression testing**
- ▶ **Ensure output from mixins/functions is as expected**
 - Especially third-party libraries, or Sass itself
- ▶ **Double check important updates, such as changing the main color**
- ▶ **CSS could still compile without errors**
- ▶ **Ship less errors!**

When

- ▶ **You're working on a large project with numerous Sass files/partials**
- ▶ **A component exists in many places with many contexts**
- ▶ **Your project includes a third-party library with complex Sass functions/mixins**
- ▶ **You have complex Sass functions/mixins that you've written**
- ▶ **Styles are very important and if they change, it could break the UI dramatically**
- ▶ **Your project supports multiple users or “subscribers”**

When *not* to

- ▶ **Small project with little CSS, such as a landing page or small marketing site**
- ▶ **Static content websites**
- ▶ **Your project doesn't heavily rely on a consistent UI**
- ▶ **Your project doesn't use Sass mixins or functions**

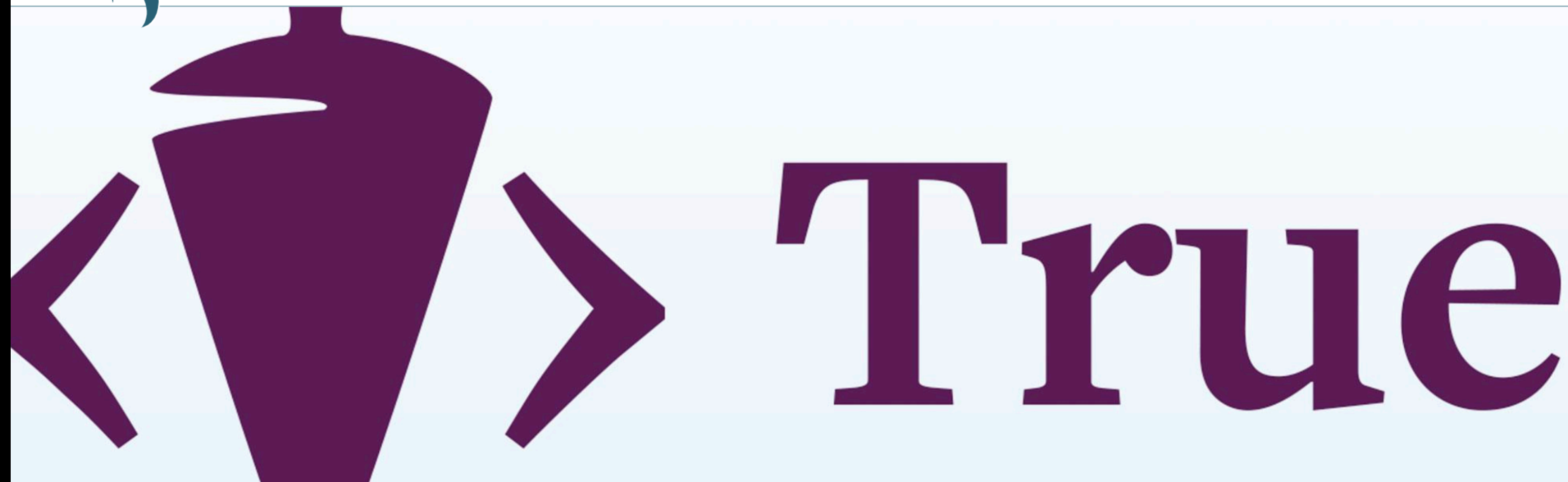
Real Life Example!

What to Unit Test

- ▶ **Functions**
 - Especially ones that have calculations or take parameters
- ▶ **Mixins**
- ▶ **Any important output**
- ▶ **Variables? Probably overkill**

HOW TO SET IT UP IN YOUR PROJECT

UNIT TESTING IN SASS

[work ▾](#)[services ▾](#)[about ▾](#)[articles](#)[✉ contact us >>](#)[Open Source](#)

True: Sass Unit Testing

Write your tests in Sass, and report with Mocha

True is a full-featured unit-testing library for Sass. The core functionality is written in pure SassScript, so it can be used anywhere Sass is compiled. Advanced features are available with our test-runner integration and Mocha.

[View source >>](#)[Read the docs >>](#)

<https://oddbird.net/true>

Requirements

- ▶ **A computer**
- ▶ **Yarn or npm**
- ▶ **Node-sass or another way to compile Sass to CSS**
- ▶ **Optional: A JS testing library such as Jasmine**



Install the `sass-true` Module

// In your Terminal

```
yarn add sass-true --dev
```

OR

```
npm install sass-true --save-dev
```

Set Up Your File Structure

```
my-cool-project/           # Root project directory
|-- src/                   # Project files
|   |-- sass/              # Sass files
|   |-- js/
|   |-- index.html
|-- spec/                  # Jasmine tests & setup
|   |-- true-sass-tests/   # Sass unit tests
|       |-- _typography-tests.scss # Sass unit test partial
|       |-- _font-mixin-tests.scss
|       |-- _font-function-tests.scss
|       |-- sass_tests.scss      # Import Sass test partials
|   true-sass-spec.js        # True setup
|   ...                     # Other Jasmine tests/setup
```

Import the Library & Your Sass

sass_tests.scss

```
// Path to module
@import "node_modules/sass-true/sass/true";
// Path to Sass file(s) to test
@import "../css/styles";
```

Set Up The Sass Tests

true-sass-spec.js

```
// Node module that provides utilities to work with files & directory paths
const path = require('path');
// Require the module
const sassTrue = require('sass-true');

const sassFile = path.join(__dirname, 'true-sass-tests/sass-tests.scss');
sassTrue.runSass({ file: sassFile }, describe, it);
```

Define Your Tests

- ▶ **Behavior Driven Development (BDD)**
 - Test behavior, not implementation
 - Phrased as “it should do x”
- ▶ **Test Driven Development (TDD)**
 - Write your tests before writing your code
 - Run test (will fail)
 - Write minimum code to pass test
 - Test, refactor, repeat

Testing a Function

// Sass

```
@function multiply($value1, $value2) {  
  @return $value1 * $value2;  
}
```

// CSS where function is called

```
.header {  
  width: multiply(12, 2); //24  
}
```

// Test

```
@include describe('The multiply() function') {  
  @include it('Returns the result of multiplication') {  
    @include assert-equal(  
      // ...  
    );  
  }  
}
```

Testing a Function

- ▶ Compare internal Sass values (variables and functions) by asserting `is-equal`, `is-unequal`, `is-true`, or `is-false`:

```
@include describe('The multiply() function') {  
  @include it('Returns the result of multiplication') {  
    @include assert-equal(  
      multiply(12, 2),  
      24  
    );  
  }  
}
```


Terminal Output

▶ Passing Test

```
The multiply() function  
✓ Returns the result of multiplication
```

▶ Failing Test

```
The multiply() function  
✗ Returns the result of multiplication  
  - AssertionError [ERR_ASSERTION]: Returns the result of multiplication ("[number] 24" assert-equal "[number] 26")
```

Testing a Mixin

- ▶ **Test CSS output of mixins with assert, output, and expect (or contains)**

```
@include describe('The large font mixin') {  
  @include it('Returns correct font properties') {  
    @include assert {  
      @include output {  
        // @include mixin to test  
      }  
    }  
    @include expect {  
      // font properties  
    }  
  }  
}
```

Testing a Mixin

```
// Sass
```

```
@mixin font-size($size) {  
  @if $size == 'large' {  
    font-size: 2rem;  
    line-height: 3rem;  
  }  
}
```

```
// CSS using mixin
```

```
.header {  
  @include font-size('large');  
}
```

```
// Test
```

```
@include describe('The large font mixin') {  
  @include it('Returns correct font properties') {  
    @include assert {  
      @include output {  
        @include font-size('large');  
      }  
  
      @include expect {  
        font-size: 2rem;  
        line-height: 3rem;  
      }  
    }  
  }  
}
```

Mixin Terminal Output

► Passing Test

```
The large font mixin  
✓ Returns correct font properties
```

► Failing Test

```
The large font mixin  
✗ Returns correct font properties  
- AssertionError [ERR_ASSERTION]: (".test-output {  
font-size: 2rem;  
line-height: 3rem;  
}" equal ".test-output {  
font-size: 2rem;  
line-height: 2rem;  
}")
```

TESTING BEST PRACTICES

UNIT TESTING IN SASS

Test Driven Development

- ▶ **Write your tests before writing any code**
- ▶ **Helps to organize thoughts about functionality**
- ▶ **Can lead to finding additional features that need to be included**
- ▶ **Tests are already written!**

Testing Best Practices

- ▶ **Write tests to fail first**
- ▶ **Only test your code, not a dependency**
- ▶ **Write tests like a readable sentence**
- ▶ **Test small chunks at a time (“unit”)**
- ▶ **Don’t test *everything***

Write Behavior To Test

applies margin vertically and does not reset horizontal sides
applies margin to the bottom only
applies padding horizontally and resets vertical sides

Write Expected Output

```
@include describe('The margin mixin') {  
  @include it('applies margin to all sides') {  
    @include assert {  
      @include output {  
        // Our mixin will go here  
      }  
    }  
    @include expect {  
      margin: 1rem;  
    }  
  }  
}
```

Add Mixin/Function To Test

```
@include describe('The margin mixin') {  
  @include it('applies margin to all sides') {  
    @include assert {  
      @include output {  
        @include margin-mixin(1rem, all);  
      }  
  
      @include expect {  
        margin: 1rem;  
      }  
    }  
  }  
}
```

Build The Mixin

```
@mixin margin-mixin($size, $sides) {  
  @if $sides == 'all' {  
    margin: $size;  
  }  
  
  @if $sides == 'top' {  
    margin: $size 0 0 0;  
  }  
  // ...  
}
```

Terminal Output

▶ Passing Test

```
The margin mixin  
  ✓ applies margin to all sides
```

▶ Failing Test

```
The margin mixin  
  ✗ applies margin to all sides  
    - AssertionError [ERR_ASSERTION]: (".test-output {  
margin: 1rem;  
}" equal ".test-output {  
margin: 1rem 0 0 0;  
}")
```

Recap

- ▶ **Refresher on Sass and Unit Testing**
- ▶ **Why & When**
 - Use cases
 - Real life scenarios
 - What to test
- ▶ **How**
 - Using True
 - Best practices for unit testing

RESOURCES

UNIT TESTING IN SASS

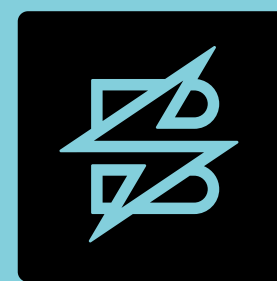
Links and Resources

- ▶ <https://oddbird.net/true/docs/>
- ▶ <https://github.com/oddbird/true>
- ▶ [https://seesparkbox.com/foundry/
how_and_why_we_unit_test_our_sass](https://seesparkbox.com/foundry/how_and_why_we_unit_test_our_sass)
- ▶ <https://twitter.com/stananick>
- ▶ [https://github.com/lindseywild/sass-
unit-testing-presentation](https://github.com/lindseywild/sass-unit-testing-presentation)

THANKS!

@stananick

wild@heysparkbox.com



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