AUDIT YOUR THEME

Presented by Andrew Olson

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ANDREW OLSON

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Front End Developer from the Chicago Suburbs

Working with Drupal since 2008

Fun Fact About Me:

- Musician + played in a band at Lollapalooza

AGENDA

1. **How To Analyze Your Theme**

2. **Helpful Tools**

3. **Refactor Pro Tips**

4. **Measure Over Time**

WHICH BUCKET ARE YOU IN?

THEME HAS GROWN OVER TIME

LAUNCH COMPLETE

STUCK WITH IT

BIG PROJECT

NEW TO THEMING

1. ANALYZE YOUR THEME

Questions to Ask Yourself

Audits Lead to Action

HOW TO ANALYZE YOUR THEME

your_theme.info.yml

- What type of theme?

- Sub-theme? Parent

- Are there updates or fixes available?

- Is the theme actively maintained?

```yaml
name: mysubtheme
description: "Custom sub-theme, inherits from the Zurb Foundat
core: 8.x
type: theme
base theme: zurb_foundation

libraries:
  - mysubtheme_base/global

regions:
  meta_header: 'Meta Header'
  header: Header
  ...
  right_off_canvas: 'Right off canvas'

# This section is used by the contrib module, Component Librar
# Reference .twig files by using the Twig namespace: @componen
component-libraries:
  atoms:
    paths:
      - source/_patterns/00-atoms
  molecules:
    paths:
      - source/_patterns/01-molecules
  organisms:
    paths:
      - source/_patterns/02-organisms
  templates:
    paths:
      - source/_patterns/03-templates
```

HOW TO ANALYZE YOUR THEME

your_theme.libraries.yml

- Loading CSS and JS appropriately?

- Using a FE Framework?

- JavaScript complexity?

- Using a CDN (Content Delivery Network)?

- Hosting Webfonts or are they external?

```yaml
global:
  version: VERSION
  css:
    component:
      css/base.css: {}
      css/components/blocks/banner/banner.css: {}
      css/components/blocks/branding/branding.css: {}
      ...
    layout:
      css/layout/grid-2.css: {}
      css/layout/grid-3.css: {}
      css/layout/grid-4.css: {}
      css/layout/layout.css: {}
  js:
    js/components/navigation/menu-main/menu-main.js: {}

recipe-collections:
  css:
    theme:
      css/components/blocks/recipe-collections/recipe-collecti

two-columns:
  css:
    layout:
      css/layout/layout-2-col.css: {}

webfonts:
  css:
    theme:
      'https://fonts.googleapis.com/css?family=Open+Sans': { t
```

HOW TO ANALYZE YOUR THEME

your_theme.theme

- Inspect your hooks.

- How many template overrides?

```php
/**
 * Implements hook_preprocess_HOOK() for HTML document te
 *
 * Adds body classes if certain regions have content.
 */
function umami_preprocess_html(&$variables) {
  // Add a sidebar class if the sidebar has content in it
  if (!empty($variables['page']['sidebar'])) {
    $variables['attributes']['class'][] = 'two-columns';
    $variables['#attached']['library'][] = 'umami/two-col
  }
  else {
    $variables['attributes']['class'][] = 'one-column';
  }
}
```

HOW TO ANALYZE YOUR THEME

your_theme.breakpoints.yml

- What are your screen sizes?

- Did you implement the Responsive Images module?

```yaml
umami.mobile:
  label: mobile
  mediaQuery: ''
  weight: 0
  multipliers:
    - 1x
    - 2x
umami.narrow:
  label: narrow
  mediaQuery: 'all and (min-width: 768px)'
  weight: 1
  multipliers:
    - 1x
    - 2x
umami.wide:
  label: wide
  mediaQuery: 'all and (min-width: 960px)'
  weight: 2
  multipliers:
    - 1x
    - 2x
```

HOW TO ANALYZE YOUR THEME

Theme Questions

Does your site use automation?

- Gulp, Webpack, Grunt, Yarn.

Does your site use SASS or LESS?

Does your site use a Pattern Library?

- Internal or External?

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HOW TO ANALYZE YOUR THEME

Theme Questions

How many templates?

How are your templates organized?

How many content types?

Does the site use modules inserting CSS or JS?

- Asset Injector (formerly CSS Injector and JS Injector in D7)

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HOW TO ANALYZE YOUR THEME

Project Questions

Does your site have Analytics?

- What is your browser support?

- What are your top 20 most requested URLs?

- How much mobile traffic is your site receiving?

- What is in your 404 report?

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HOW TO ANALYZE YOUR THEME

Project Questions

Is the original developer available for questions?

- Ask them to navigate the site with specific tasks.

- Listen. Don't lead.

- Lastly, review your findings with them.

AUDIT LEADS TO ACTION

2. HELPFUL TOOLS

Parker

Analyze CSS

Project Wallace

Lint

Parker is a stylesheet analysis tool. It runs metrics on your stylesheets and reports on their complexity.

HELPFUL TOOLS

Parker

Go to [Github](#) to clone the repository.

Install with **npm**.

Measure local or remote CSS files.

Outputs JSON.

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HELPFUL TOOLS

Parker

```
"total-stylesheets": 1,
"total-stylesheet-size": 192247,
"total-rules": 1553,
"total-selectors": 2047,
"total-identifiers": 6042,
"total-declarations": 3911,
```

HELPFUL TOOLS

CSS 101

CSS RULE

```
h1 {color: #0000FF; font-size: 18px;}
```

HELPFUL TOOLS

CSS 101

HELPFUL TOOLS

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HELPFUL TOOLS

Parker

CSS RULE

```
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DECLARATION

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```

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Identifiers ≠ IDs

Identifiers are a measure of the **parts** per selector.

```
.c-btn {
  /* 1 identifier */
}


.c-btn:hover {
  /* 2 identifiers */
}


.c-widget--large .widget__title {
  /* 2 identifiers */
}


header nav ul li a {
  /* 5 identifiers */
}
```

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HELPFUL TOOLS

CSS RULE

Parker
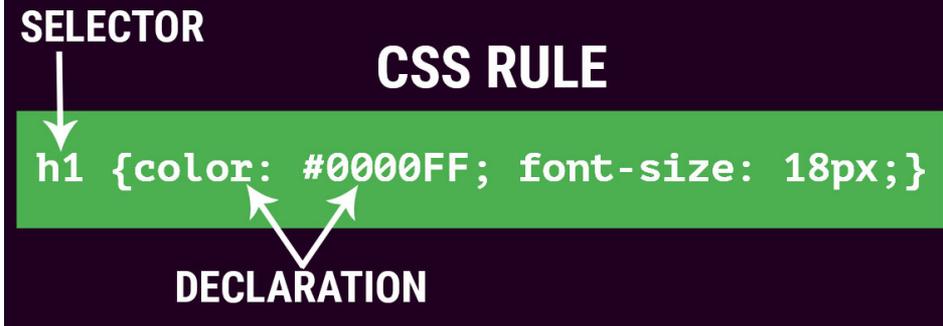
`h1 {color: #0000FF; font-size: 18px;}`

DECLARATION

```
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```

HELPFUL TOOLS

Parker

CSS RULE

`h1 {color: #0000FF; font-size: 18px;}`

DECLARATION

"selectors-per-rule": 1.31809401159047,
"identifiers-per-selector": 3.0405471421592574,
"specificity-per-selector": 25.89838788470933,
"top-selector-specificity": 220,
"top-selector-specificity-selector": "#hero-mobile .row.
"total-id-selectors": 79,

HELPFUL TOOLS

Selector Per Rule Example

Before:
Lots of Selectors!

```
input[type="text"]
input[type="email"],
input[type="password"],
textarea {
  border: 1px solid #ccc;
  background-color: #fff;
  color: #333;
  padding: 4px;
}
```

After:
Written into 1 Class

```
.c-input-text {
  border: 1px solid #ccc;
  background-color: #fff;
  color: #333;
  padding: 4px;
}
```

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HELPFUL TOOLS

Parker

CSS RULE
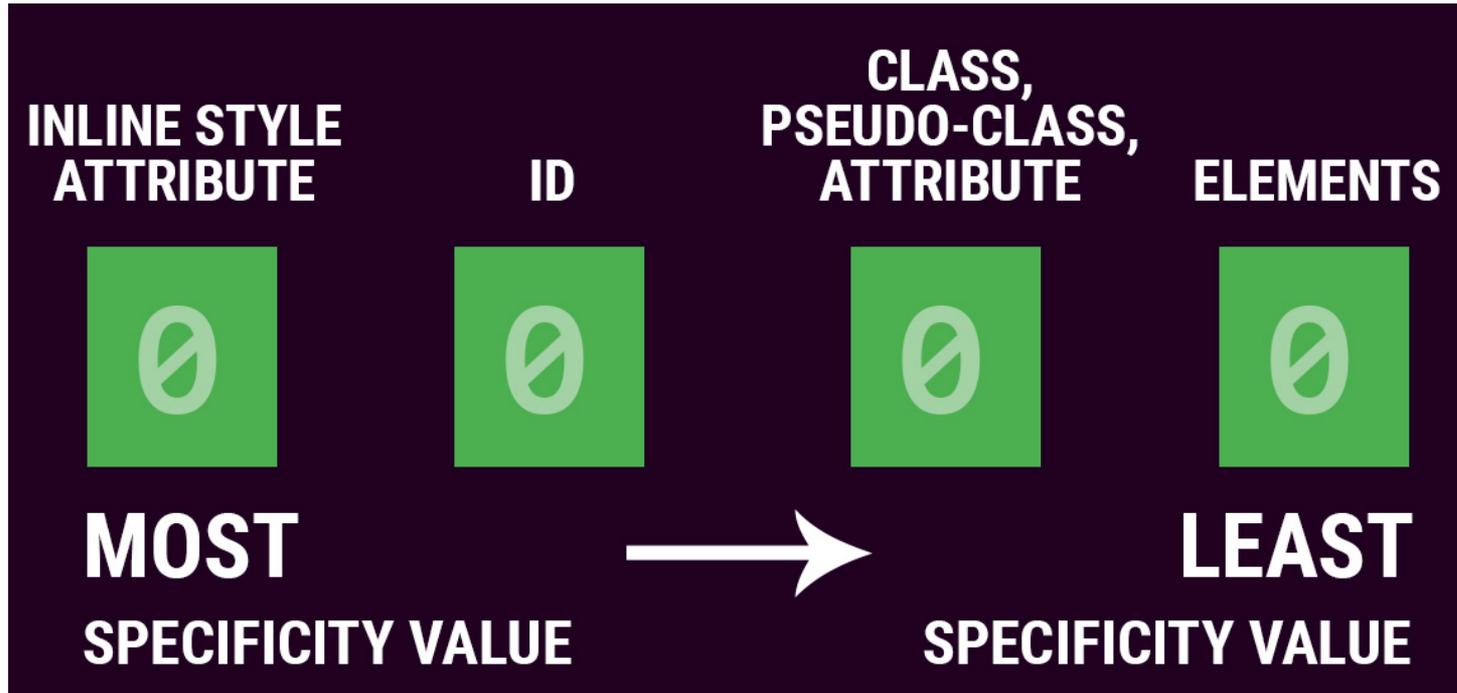
`h1 {color: #0000FF; font-size: 18px;}`

DECLARATION

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HELPFUL TOOLS

Specificity Refresher

INLINE STYLE ATTRIBUTE — ID — CLASS, PSEUDO-CLASS, ATTRIBUTE — ELEMENTS

MOST SPECIFICITY VALUE → LEAST SPECIFICITY VALUE

HELPFUL TOOLS

Specificity Refresher

`<li style="color:red;">`

INLINE STYLE ATTRIBUTE	ID	CLASS, PSEUDO-CLASS, ATTRIBUTE	ELEMENTS
1	0	0	0

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HELPFUL TOOLS

Specificity Refresher

HELPFUL TOOLS

Specificity Refresher

- The universal selector (*) has no specificity value (0,0,0,0)

- `!important` is an automatic win.

HELPFUL TOOLS

Parker

```
"selectors-per-rule": 1.31809401159047,
"identifiers-per-selector": 3.0405471421592574,
"specificity-per-selector": 25.89838788470933,
"top-selector-specificity": 220,
"top-selector-specificity-selector": "#hero-mobile .row.
"total-id-selectors": 79,
```
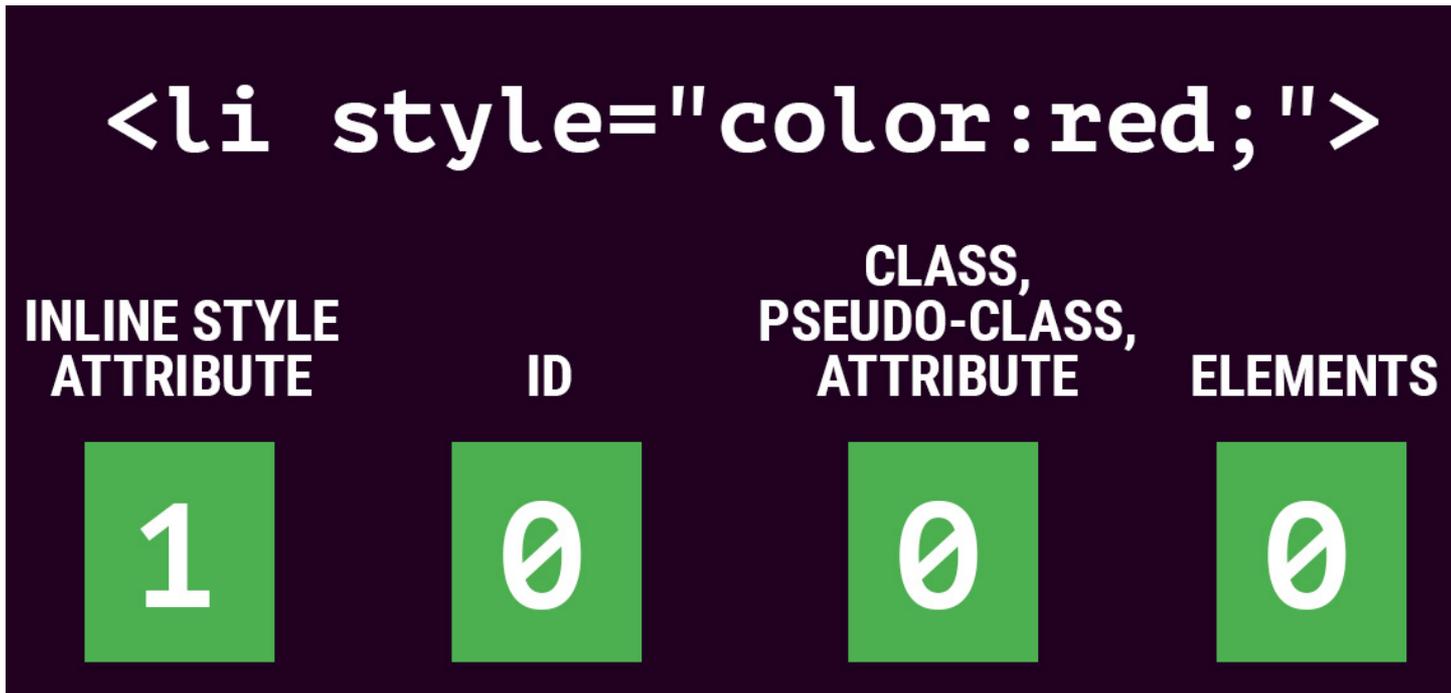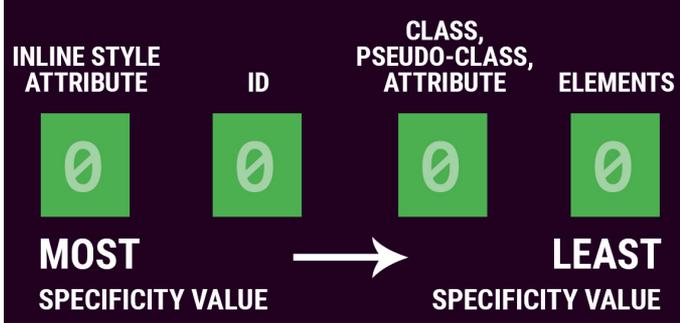
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HELPFUL TOOLS

Parker

```
"total-important-keywords": 113,
"total-media-queries": 37,
"media-queries": [
    "screen and (min-width: 40em)",
    "screen and (min-width: 64em)",
    "print",
    "screen and (min-width: 0\\0)",
    "screen and (max-width: 39.9375em)",
    "screen and (max-width: 63.9375em)",
    "screen and (max-width: 74.9375em)",
    "screen and (max-width: 0em)",
    "screen and (min-width: 40em) and (max-width: 63.9375em)",
    "screen and (min-width: 64em) and (max-width: 74.9375em)",
    "screen and (min-width: 75em)",
    "screen and (orientation: landscape)",
    "screen and (orientation: portrait)",
    "(max-width: 1240px)",
    "(max-width: 1300px)",
    "(min-width: 1240px)",
    ...
```

HELPFUL TOOLS

Parker

```
"total-unique-colours": 52,
"unique-colours": [
    "#FFFF00",
    "#000000",
    "#0A0A0A",
    "#FEFEFE",
    "#CACACA",
    ...
    "#ADA7A9",
    "#8B2525",
    "#D2D1D1"
```

HELPFUL TOOLS

Parker

Pros

- Measure file size of CSS.

- Metrics for desired class-based theming

- Find all color values and media queries.

- Find `!important` declarations

Cons

- Not a full picture of the site if following D8 recommended approach dynamically loading CSS/JS.

- Last updated July 2016.

Analyze CSS checks for redundancy and validation errors to keep your CSS simple. Test, weigh, and analyze your CSS selectors to reduce complexity and optimize performance.

HELPFUL TOOLS

Analyze CSS

Go to Github to clone the repository.

Install with **npm.**

Measure local or remote CSS files.

Outputs JSON.

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HELPFUL TOOLS

Analyze CSS

```
"generator": "analyze-css v0.12.6",
"metrics":
{

    "base64Length": 313,
    "redundantBodySelectors": 8,
    "redundantChildNodesSelectors": 177,
    "colors": 66,
    "comments": 126,
    "commentsLength": 10122,
    "complexSelectors": 228,
    "duplicatedSelectors": 33,
    "duplicatedProperties": 26,
    "emptyRules": 7,
    "expressions": 0,
    "oldIEFixes": 6,
    "imports": 0,
    "importants": 113,
    "mediaQueries": 153,
```

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HELPFUL TOOLS

Analyze CSS

```
"offenders":
{
    "comments": ["\" @file\n * This file is a custom file that loads all files.
    "importants": ["#map_canvas img, #map_canvas embed, #map_canvas object, .map
    "multiClassesSelectors": [".collapse.row @ 464:3", ".collapse.row @ 464:3",
    "mediaQueries": ["@media screen and (min-width: 40em) (1 rules) @ 470:5", "@
    "qualifiedSelectors": ["table.show-for-print @ 1448:3", "thead.show-for-prin
    "duplicatedProperties": [".button.dropdown::after {display: inline-block} @
    "complexSelectors": [".menu > li > a img @ 2120:3", ".menu > li > a i @ 2120
    "propertyResets": [".menu-text: \"padding\" resets \"padding-top\" property
    "oldPropertyPrefixes": [".is-drilldown-submenu.is-active { -ms-transform: tr
    "redundantChildNodesSelectors": ["table.stack tr @ 3213:3", "table.stack th
    "emptyRules": ["a.copy__button @ 4287:1", ".row @ 4303:1", ".row .m-nav--sec
    "redundantBodySelectors": ["body:not(.node--type-landing-page) .locations_pa
    "oldIEFixes": [".location-addresses-extra .columns_no-float {*display: inlin
    "colors": ["#ffffff (55 times)", "#fefefe (41 times)", "#016595 (40 times)",
    "duplicatedSelectors": ["h1 (3 times)", "textarea (3 times)", "body (3 times
}
```

HELPFUL TOOLS

Analyze CSS

Pros

- Additional metrics compared to Parker.

- Lists "offenders" to seek and solve.

- Updated and maintained!

Cons

- Not a full picture of the site if following D8 recommended approach dynamically loading CSS/JS.

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Project Wallace is a stylesheet analysis tool that keeps track of the metrics over time.

HELPFUL TOOLS

Project Wallace

Option 1: Go to www.projectwallace.com to create a free account.

Option 2: Use the CLI, go to Github to clone repository for "CSS Analyzer"

Install with **npm** or **yarn.**

Measure local or remote CSS files.

Outputs JSON.

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A linter or lint refers to tools that analyze source code to flag programming errors, bugs, stylistic errors, and suspicious constructs.

HELPFUL TOOLS

Lint

Lint your JavaScript and CSS preprocessing.

Install as part of your Automation.

Catches mistakes, saves your bacon, and makes you write better code.

3. REFACTOR PRO TIPS

Organize Your CSS

JavaScript

REFACTOR PRO TIPS

Organize CSS

Atomic Design

SMACSS structure

- Base, Layout, Module, State, Theme

BEM (Block, Element, Modifier)

- Example: .my-component__list-item

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REFACTOR PRO TIPS

SASS

Variables (for colors, breakpoints, fonts, etc.)

Use Mixins and Functions when possible

- Media Queries, buttons, positioning.

Useful nesting for selectors.

Do not overuse @extend – leads to bloat!

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REFACTOR PRO TIPS

JavaScript

Include JavaScript as Libraries

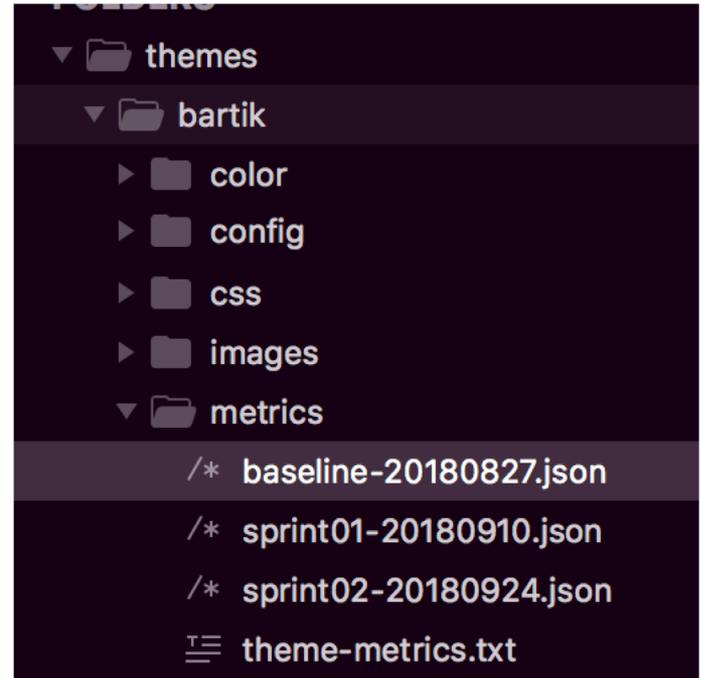- Only load when you need it!

Use Drupal Behaviors

- Pass data into JavaScript.

- Reusable functions.

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4. MEASURE OVER TIME

Establish Metrics within Your Theme
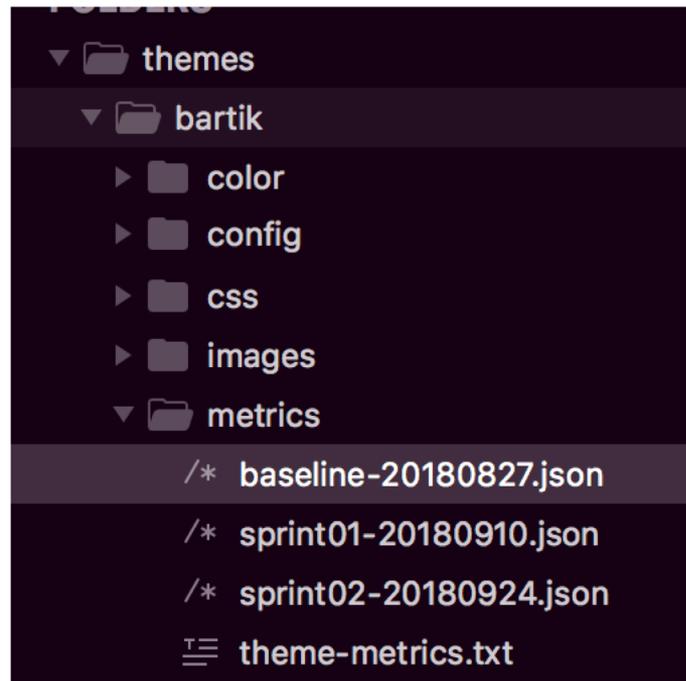
ESTABLISH METRICS

**Create a "metrics" directory
in your Theme.**

ESTABLISH METRICS
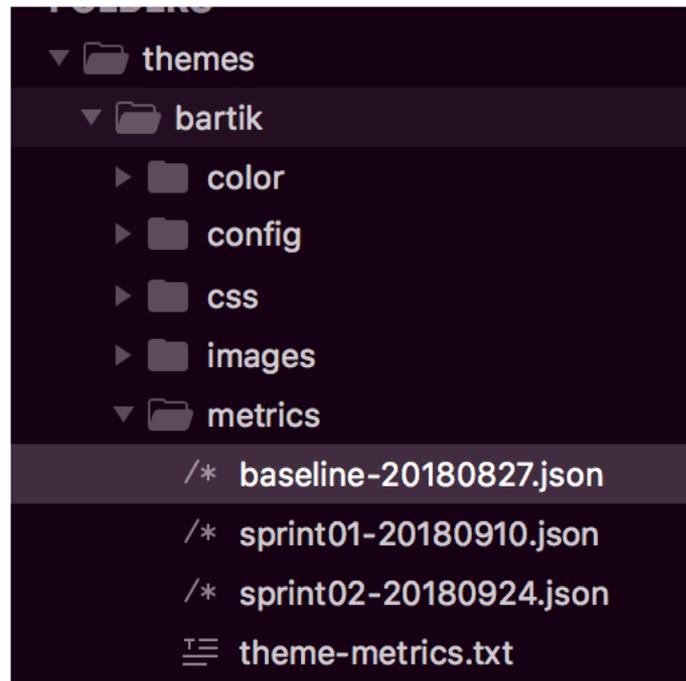
Baseline:

- File size of compiled CSS.

- Output JSON from Project Wallace,
  Parker or Analyze CSS.

ESTABLISH METRICS

Sprint-by-Sprint:

• Measure size of CSS.

• Diff your JSON export.

• Theme metrics

    • Home Page load time.

    • A11Y scores.

    • Any other metric you wish!

MEASURE YOUR THEME OVER TIME

Thank You.

Please rate this session:

http://mid.camp/231

Andrew Olson

Lead Front End Developer at Bounteous

@andrewozone

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REFERENCES

Parker by Katie Fenn

Improving Your CSS with Parker
by Harry Roberts

Analyze CSS by Maciej Brencz

Specifics on CSS Specificity by Chris Coyer

Scalable and Modular Architecture for CSS
(SMACSS) by Jonathan Snook

A Quick CSS Audit and General Notes About
Design Systems by Robin Rendle

Project Wallace by Bart Veneman

BEM 101 by Robin Rendle

BEM Naming
by @floatdrop and @iamstarkov

Why BEM? by decaf.de

Designing for Mobile Performance
by Mustafa Kurtuldu

Using Responsive Images in Drupal 8
by Rory Douglas

Strategies for Cache-Busting CSS
by Chris Coyer

StyleStats by Koji Ishimoto

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