

DECOUPLING YOUR DESIGN SYSTEM

Brian Perry

July 18, 2019

Decoupled Days

Slides: <http://bit.ly/decoupling-ds>

BRIAN PERRY

- Lead Front End Dev at Bounteous
- Rocking the Chicago 'burbs
- Lover of all things components...
...and Nintendo
- Increasingly JAMStack Curious



d.o: brianperry

twitter: bricomedy

github: backlineint

nintendo: wabrian

brianperryinteractive.com

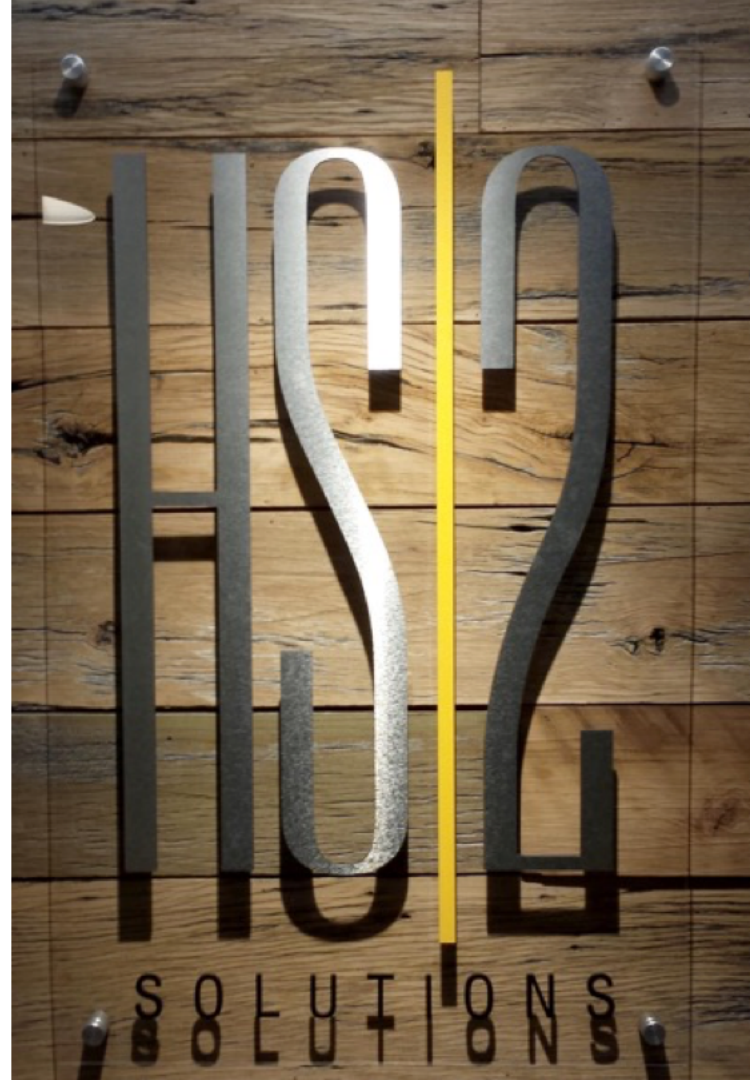
bounteous



HS2 SOLUTIONS

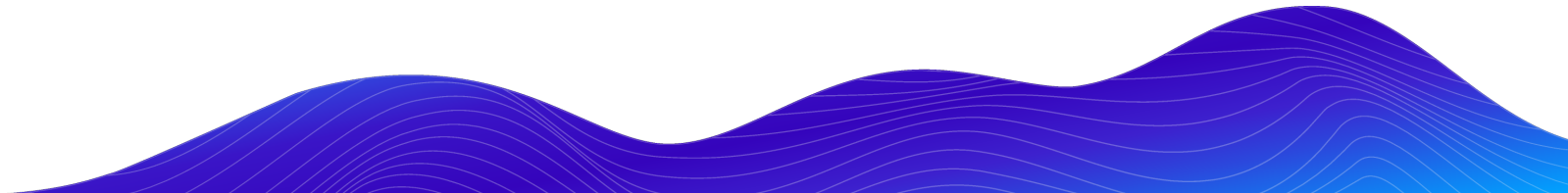


MOUNTAIN STATES
HEALTH ALLIANCE

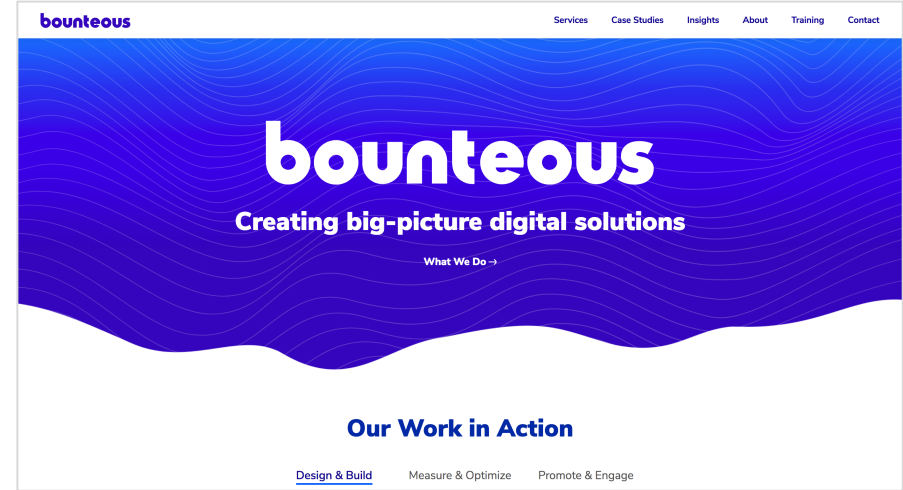
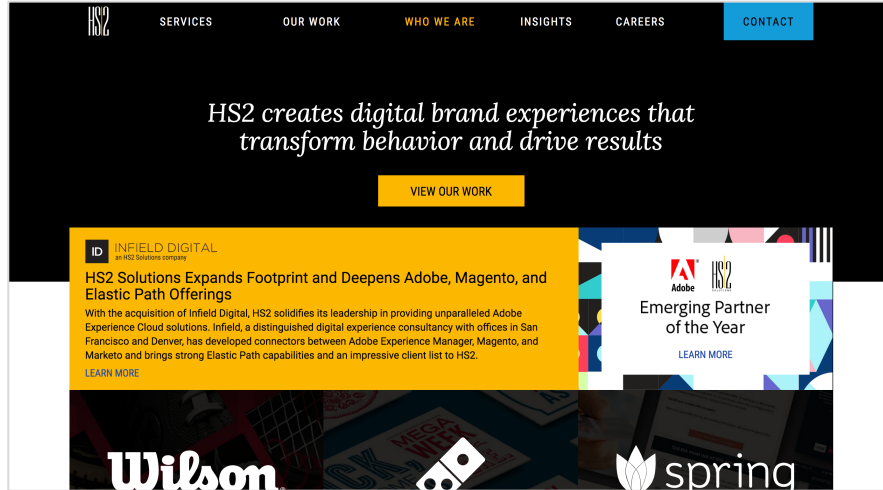


A REBRANDING STORY

or: Using an External Design System in a Traditional CMS Architecture

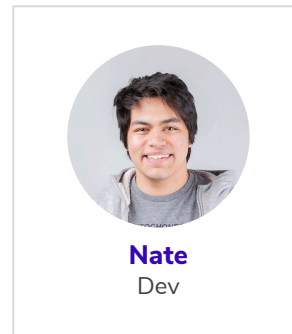
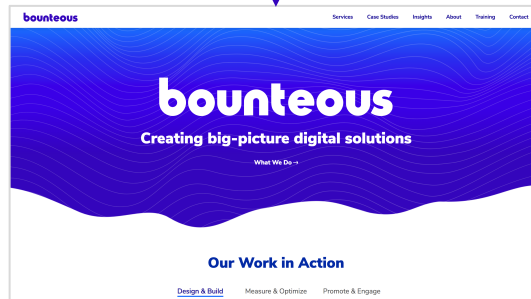
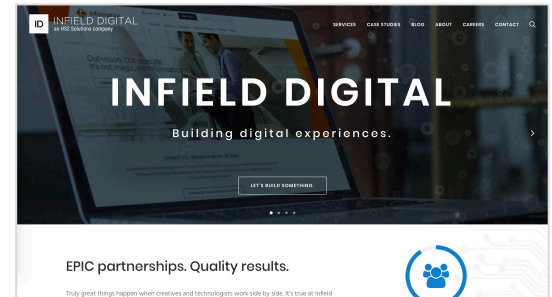
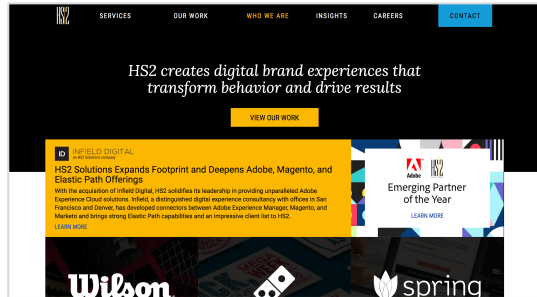


REBRANDING



- Brand launch targeted for November 5, 2018
- Website is only one part in a larger coordinated effort

MIGRATION

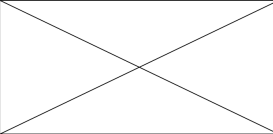


Nate
Dev

MEANWHILE...

View Insights for:

All Category Category Category Category [Show all filters +](#)



PRIMARY TAG

Title of Insight

by Authors Name

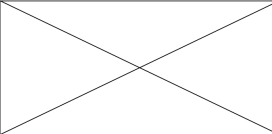
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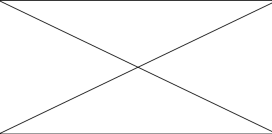


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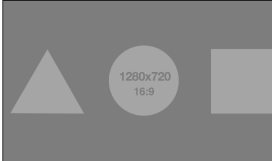


Leon
XD



View Insights for

CATEGORY CATEGORY CATEGORY CATEGORY CATEGORY



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Title of Insight

by Authors Name

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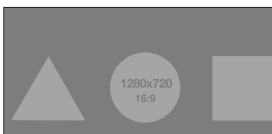
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No Image Card

by Authors Name

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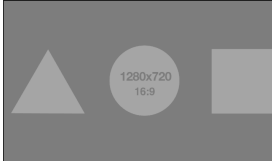
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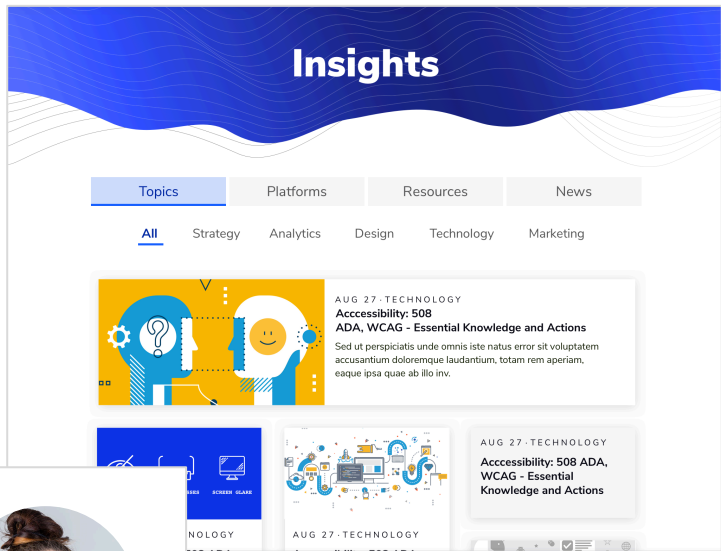
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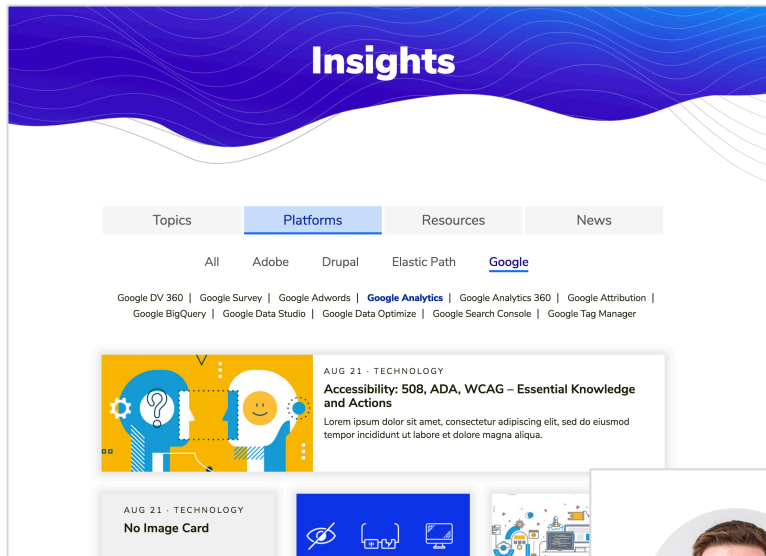
Brian
FE Dev



PROTOTYPING



Joleen
UX

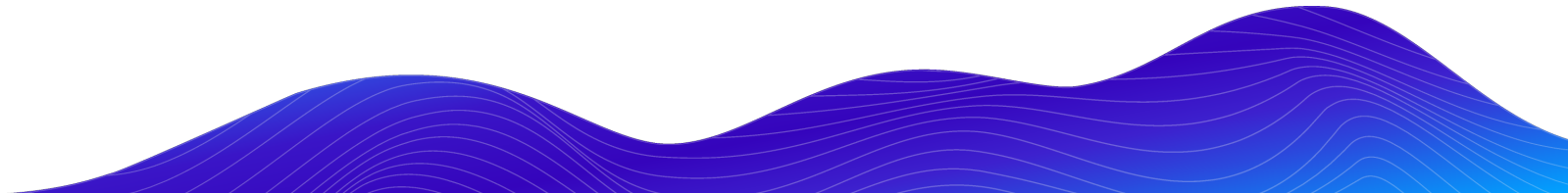


Brian
FE Dev



DRUPAL INTEGRATION

or: Deciding Where To Put The Mustard





V S



Past projects: Pattern Lab embedded in theme

- Easier for Drupal to access components
- Simplified build process
- Easier for developers to understand
- Prone to Drupalisms leaking into components

Current state: Independent Projects

- Drupal Repository
- Design System Repository

Promotes use beyond a single Drupal project.

Where should we put the mustard?

LET'S KEEP THE MUSTARD SEPARATE

- Keeps components Drupal agnostic
- Continues to encourage prototyping
- Already has been living as a separate project
- Some gut feelings:
 - **Conceptually feels like the right thing**
 - Advocated by many in the community who I trust
 - May be able to re-use on other web projects related to our brand.
 - Feels right for a company with diverse skills





REQUIRING THE DESIGN SYSTEM

composer.json – in design system

```
1 {  
2     "name": "hs2studio/hs2solutionsdesignsystem",  
3     "description": "HS2 Solutions Design System",  
4     "type": "design-system"  
5 }
```

REQUIRING THE DESIGN SYSTEM

composer.json – in Drupal project

Add Design system repository

```
12     "repositories": [  
13         {  
14             "type": "composer",  
15             "url": "https://packages.drupal.org/8"  
16         },  
17         {  
18             "type": "git",  
19             "url": "git@bitbucket.org:hs2studio/hs2solutionsdesignsystem.git"  
20         },  
21     ]
```

REQUIRING THE DESIGN SYSTEM

composer.json – in Drupal project

Define how to handle design-system installer types

```
153     "extra": {
154         "installer-types": [
155             "design-system"
156         ],
157         "installer-paths": {
158             "docroot/core": ["type:drupal-core"],
159             "docroot/libraries/{$name}": ["type:drupal-library"],
160             "docroot/themes/custom/hnews/libraries/{$name}": ["type:design-system"],
161             "docroot/modules/contrib/{$name}": ["type:drupal-module"],
162             "docroot/profiles/contrib/{$name}": ["type:drupal-profile"],
163             "docroot/themes/contrib/{$name}": ["type:drupal-theme"],
164             "drush/contrib/{$name}": ["type:drupal-drush"]
165         },
166     }
```

REQUIRING THE DESIGN SYSTEM

```
composer require hs2studio/hs2solutionsdesignsystem
```

- Required dev for pre-launch cycle

Updating

```
composer update hs2studio/hs2solutionsdesignsystem
```

- Releases are tagged in design system
- Can require design system at a specific release

INCORPORATING INTO THEME

hsnew.libraries.yml

Global library with compiled assets

```
1 global:
2   version: 1.x
3   css:
4     theme:
5       libraries/hs2solutionsdesignsystem/source/dist/style.css: {}
6       css/drupal.css: {}
7       "https://fonts.googleapis.com/css?family=Nunito+Sans:400,600,700,800,900": { type:
8   js:
9     libraries/hs2solutionsdesignsystem/source/dist/base.bundle.js: {}
10    libraries/hs2solutionsdesignsystem/source/dist/jquery.bundle.js: {}
11  dependencies:
12    - core/drupal
13    - core/jquery
14    - core/jquery.once
```

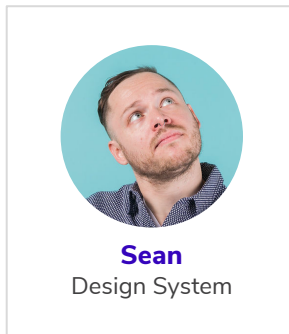

INCORPORATING INTO THEME

hsnew.info.yml

Twig namespaces for 'atomic' component categories

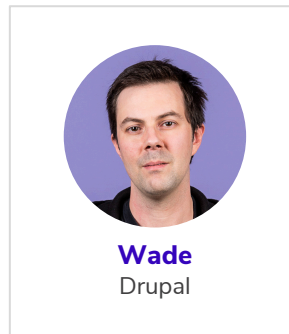
```
32     component-libraries:
33         images:
34             paths:
35                 - libraries/hs2solutionsdesignsystem/source/images
36         elements:
37             paths:
38                 - libraries/hs2solutionsdesignsystem/source/_patterns/elements
39         components:
40             paths:
41                 - libraries/hs2solutionsdesignsystem/source/_patterns/components
42         regions:
43             paths:
44                 - libraries/hs2solutionsdesignsystem/source/_patterns/regions
45         layouts:
46             paths:
47                 - libraries/hs2solutionsdesignsystem/source/_patterns/layouts
```

COMPONENT WORKFLOW



Design System Components

- Created the bulk of design system components, primarily outside of Drupal.
 - Only 2 commits in Drupal repo

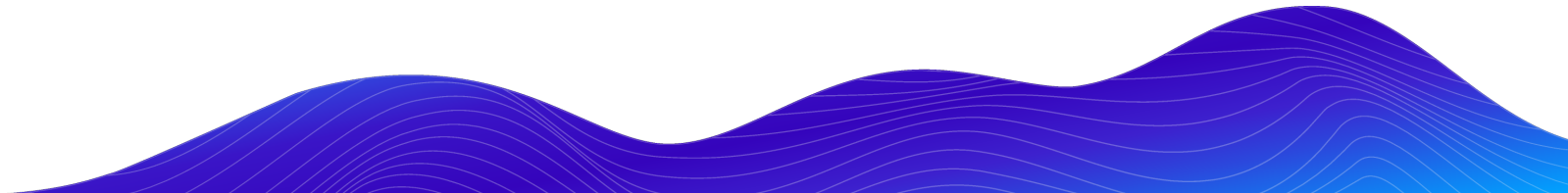


Drupal Component Integration

- Wired design system components to Drupal content and layouts.
 - Majority of effort in Drupal repository
 - Minor design system refactoring when necessary

WE'RE GOING TO NEED MORE MUSTARD

or: How an External Design System Helped Us Handle Changes in Scope



LUNAMETRICS TRAINING SITE SCOPE

Register Today

Courses	12/11 Monday	12/12 Tuesday	12/13 Wednesday	12/14 Thursday	12/15 Friday	Totals
Add All + Analytics \$499	101 Seats 0 / 0	201 Seats 0 / 0	301 Seats 0 / 0			0 x \$ 499
Add All + AdWords \$499				101 Seats 0 / 0	201 Seats 0 / 0	0 x \$ 499
Add All + Tag Manager \$799				101 Seats 0 / 0		0 x \$ 799
Google Analytics: Save \$100 when you attend all 3 training days Google Analytics: Save \$50 when you attend 2 training days Google AdWords: Save \$100 when you attend 2 training days						Grand total \$0.00 <i>You saved \$0.00</i>
						Register

Training registration rebuild de-scoped

- Existing WordPress site lives on at training.bounteous.com subdomain.
- Needs to match look and feel of D8 site

This design system thing seems pretty handy now.

WORDPRESS INTEGRATION

Worked with Wahila Creative to re-theme the site.

- Introduced us to Timber plugin which makes it possible to use Twig in WordPress.
- Initial prototype used Timber and design system.



Timber: a faster, easier and more powerful way to build themes. Because WordPress is awesome, but the loop isn't.

TIMBER COMPONENT – TRAINING ITEMS

bounteous

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APR 01-04	BOSTON, MA Google Analytics & Tag Manager Workshops	Details →
APR 08-12	LOS ANGELES, CA Google Analytics, Ads & Tag Manager Workshops	Details →
APR 29 - MAY 03	MINNEAPOLIS, MN Google Analytics, Ads & Tag Manager Workshops	Details →

TIMBER COMPONENT – TRAINING ITEMS

training-module.php

```
20 <div class="c-training-module__wrapper js-trainingList">
21   <?php
22     foreach ($data['courses'] as $event) :
23       $trainingElement([
24         'id'      => $event['eventbrite_id'],
25         'month'   => get_formatted_date_string_months ( strtotime($event['start_date']),
26           strtotime($event['end_date']) ),
27         'days'   => get_formatted_date_string_days ( strtotime($event['start_date']),
28           strtotime($event['end_date']) ),
29         'location' => $event['event_city'] . ', ' . $event['event_state'],
30         'title'   => $event['title'],
31         'cta_link' => $event['parent'] . '/#' .
32           getFormattedMonth($event['start_timestamp'])
33       ]);
34     endforeach;
35   ?>
36 </div>
```

TIMBER COMPONENT – TRAINING ITEMS

training-element.php

```
1  <?php
2  /**
3   * @uses {Array} $data Scoped Array of data used to populate the template
4   * @key {String} datemonths
5   * @key {String} datedays
6   * @key {String} location
7   * @key {String} title
8   * @key {String} link
9   */
10 ?>
11
12 <?php
13
14 if (!empty($data)) {
15     // Render the design system component
16     Timber::render('e-training.twig', $data);
17 }
18
19 ?>
20
```




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an H&S Solutions company

CA360

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Digital Marketing Training Courses

At LunaMetrics we're genuinely passionate about what we do. This makes us ideal consultants, but it also makes us more than just educators. We're here to educate people and allow them to make informed decisions that will help their online presences. We offer a number of digital marketing areas.

bounteous

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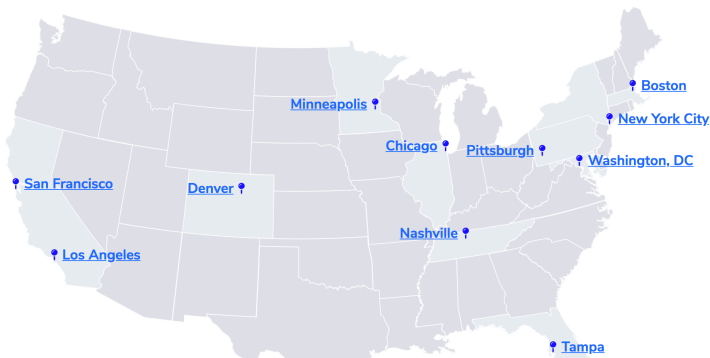
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Google Marketing Training

Our passion for insights makes our training top of the line.



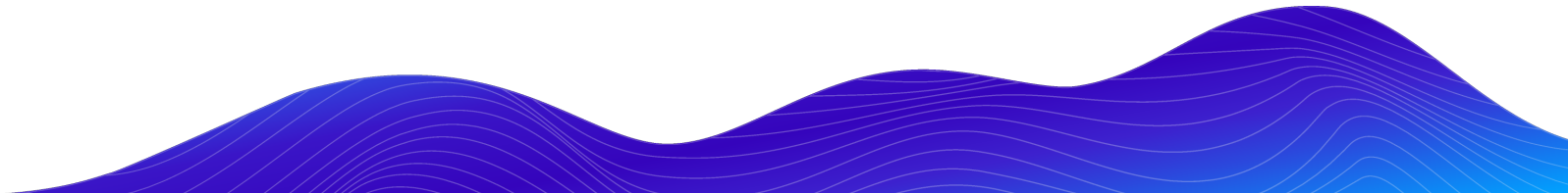
DEMAC MEDIA

Demac Media joins the family... very close to launch.

- Rebranded as bounteous.ca
- Smaller scale site, will differ from bounteous.com look and feel.
- More manual / selective use of design system assets.



POST LAUNCH



ONBOARDING



Kyle
Developer



Steve
Developer

- Post launch, team members rotate.
- Majority of tickets are Drupal specific fixes. Faced with the design system they may wonder:

Why can't I just Drupal?

Lessons Learned

- Documentation is important
 - Not just how, but why.
- Must have an efficient workflow for design system experimentation in CMS.
- Need to be strict about versioning.
- External approach can add overhead.

LINES BETWEEN CMSES BLUR

Upcoming Trainings

MARCH 25-29	WASHINGTON, DC Google Analytics, Ads, Tag Manager, Data Studio, Optimize Workshops	Details →
APRIL 01-04	BOSTON, MA Google Analytics & Tag Manager Workshops	Details →
APRIL 08-12	LOS ANGELES, CA Google Analytics, Ads & Tag Manager Workshops	Details →


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Kristen
QA

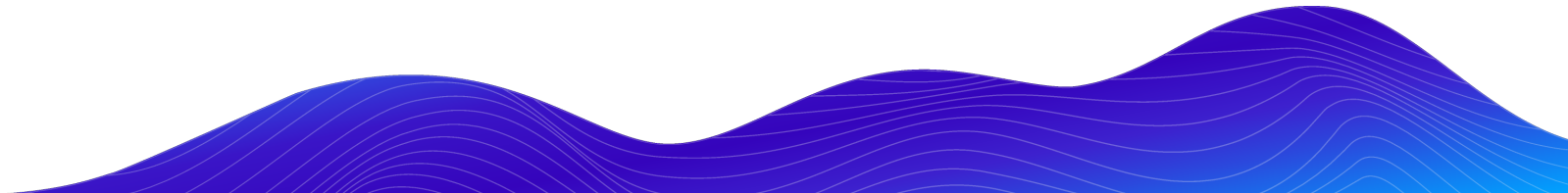
People will expect front-end changes to apply **everywhere**.



Jon
'Marketing'

DECOUPLED DESIGN SYSTEMS

Sharing between multiple templating engines



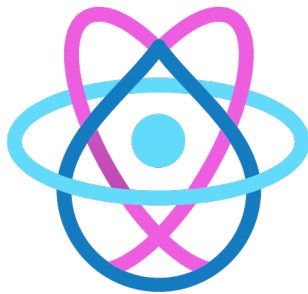
A PROGRESSIVELY DECOUPLED PROJECT

Drupal



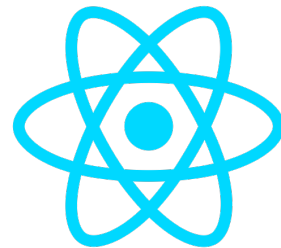
- 'Traditional' Drupal Build
- Provides APIs to React

Combined



- Traditional Drupal Content
- and*
- Routes owned by React for User Portal

React



- Consumes Drupal APIs
- Authenticated User Portal

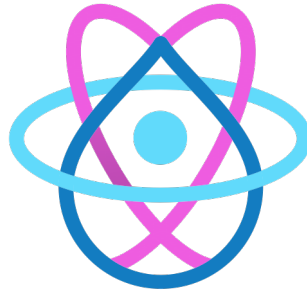
DX – MULTIPLE DEVELOPER CONTEXTS

Drupal



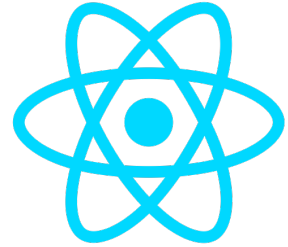
- Drupal implementation without React dependency.

Combined



- Test real world integration

React



- Develop and test without local Drupal environment.
- Hot Module Replacement

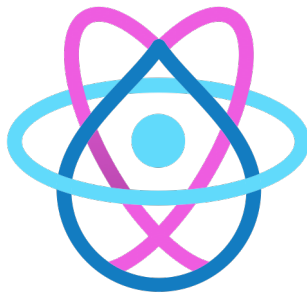
TEMPLATING AND STYLES

Drupal



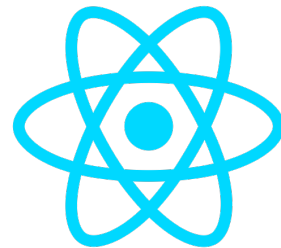
- Twig
- Unique styles and components

Combined



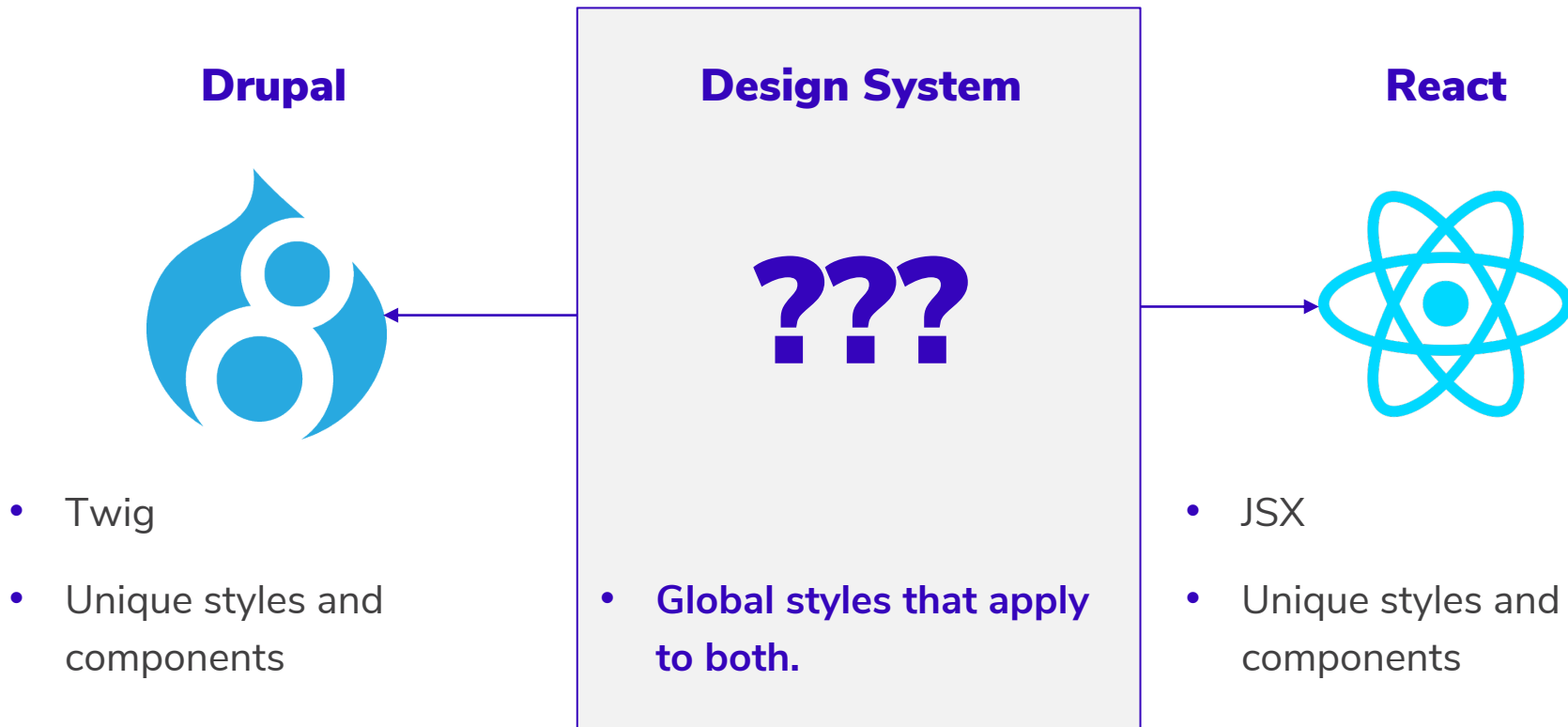
- Global styles that apply to both.
- Few (if any) shared components

React



- JSX
- Unique styles and components

COULD A DESIGN SYSTEM SERVE BOTH?



CSS IN JS IS ALL THE RAGE*

* occasional emphasis on RAGE

CSS-in-JS and Drupal sitting in a tree...

JohnAlbin

So you are a Drupal themer thinking about styling a decoupled Drupal website? It can be daunting to look at the JavaScript community; there seems to be a new *best practice* every week. And picking the right CSS-in-JS solution appears to be a **nightmare of infinite choices**. What to use? Styled Components? Glamorous? Inline CSS? Once you've decided on a solution for your decoupled project, do you now maintain two different CSS build tools for your projects, one for Drupal and one for decoupled?

During the past two years of building decoupled websites, **my team** at Amaze Labs has tried several different CSS-in-JS solutions and made lots of mistakes. But we have finally decided on using CSS Modules.

CSS Modules is a mature project with a syntax that is a superset of CSS, similar to Sass. It makes it easy for you to "think in components" without having to worry about BEM class naming. It automatically generates locally-scoped CSS class names, so you can use "wrapper" in multiple files without conflict. It also allows integration of "global"

Program tags
css, decoupled, javascript

Program track
builder

Experience level
Intermediate

Drupal version
Drupal 8 (current)

Session Time Slot(s)
Time:
04/11/2019 - 10:45 to 04/11/2019 - 11:15
Room:
6B | Level 6

ADD TO MY SCHEDULE



* CSS-TRICKS

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What are CSS Modules and why do we need them?



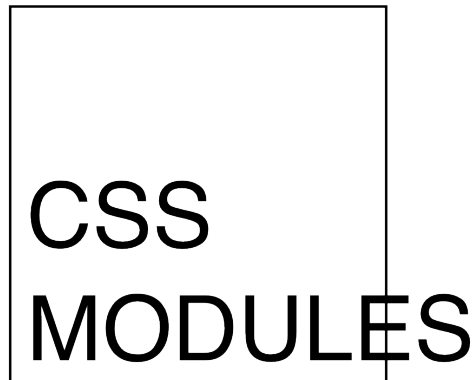
Author
Robin Rendle
Published
Apr 4, 2016

67 Comments
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Updated
Mar 13, 2017

CSS MODULES

CSS MODULES

- Not a package
- Handled by a build process (typically Webpack)
- Scopes styles locally by default
- Can play nice with Sass
- Has a super snarky logo



SCOPED CSS – PROJECT CARD

Featured Projects

JavaScript

Gatsby

A framework based on React that helps developers build blazing fast websites and apps

[More info >](#)

PHP

Tome

A static site generator for Drupal 8

[More info >](#)

View All

See all projects listed on the site or add something new

[More info >](#)

```
1 // ProjectCard.module.scss
2
3
4 .project-card {
5   box-shadow: 0px 0px 2px 1px rgba(25,17,34,0.1);
6   background-color: white;
7   padding: 2rem;
8   display: block;
9   text-decoration: none;
10  border-radius: 10px;
11  width: 100%;
12
13  &:hover {
14    box-shadow: 0px 0px 2px 1px rgba(6, 120, 190, 0.3);
15  }
16
17  .title {
18    font-family: 'Overpass', Sans-Serif;
19    font-size: 30px;
20  }
21
22  .language {
23    color: #31373f;
24    font-size: 14px;
25  }
26
27  .description {
28    color: #31373f;
29  }
30
31  p {
32    font-size: 14px;
33    margin-bottom: 0;
34  }
35 }
```

```

3
4 // ProjectCard.js
5
6 import styles from "../ProjectCard.module.scss"
7
8 const ProjectCard = (props) => (
9   <Link
10     to={props.link}
11     key={props.link}
12   >
13     <div className={styles.projectCard}>
14       <div className={styles.language}>{props.language}</div>
15       <div className={styles.title}>{props.title}</div>
16       <div className={styles.description}>{props.description}</div>
17       <p>More info </p>
18     </div>
19   </Link>
20 );
21
22 export default ProjectCard
23

```

SCOPED CLASS NAMES

The screenshot displays a web browser's developer tools interface. The 'Elements' panel on the left shows a tree view of the DOM. A specific element is selected, and its HTML structure is visible, including nested divs with class names like 'ProjectCard-module--project-card--3xTSe'. The 'Styles' panel on the right shows the CSS rules applied to the selected element, including a 'box-shadow' and 'background-color' property. The 'Computed' tab is active, showing the final styles. The 'Event Listeners' tab is also visible. The 'Filter' input in the Styles panel is set to ':hov .cls +'. The 'ProjectCard-module--project-card--3xTSe' class is highlighted in the DOM tree, and the corresponding CSS rule is shown in the Styles panel.

```
...  
  <a href="/projects/gatsby/">  
    <div class="ProjectCard-module--project-card--3xTSe"> == $0  
      <div class="ProjectCard-module--language--26Z4S">JavaScript</div>  
      <div class="ProjectCard-module--title--2Fmpt">Gatsby</div>  
      <div class="ProjectCard-module--description--1V_sT">...</div>  
      <p>More info ></p>  
    </div>  
  </a>  
  <a href="/projects/tome/">...</a>  
  <a href="/projects">...</a>  
  ::after  
</div>  
</div>  
</div>  
</main>
```

Styles Computed Event Listeners >>

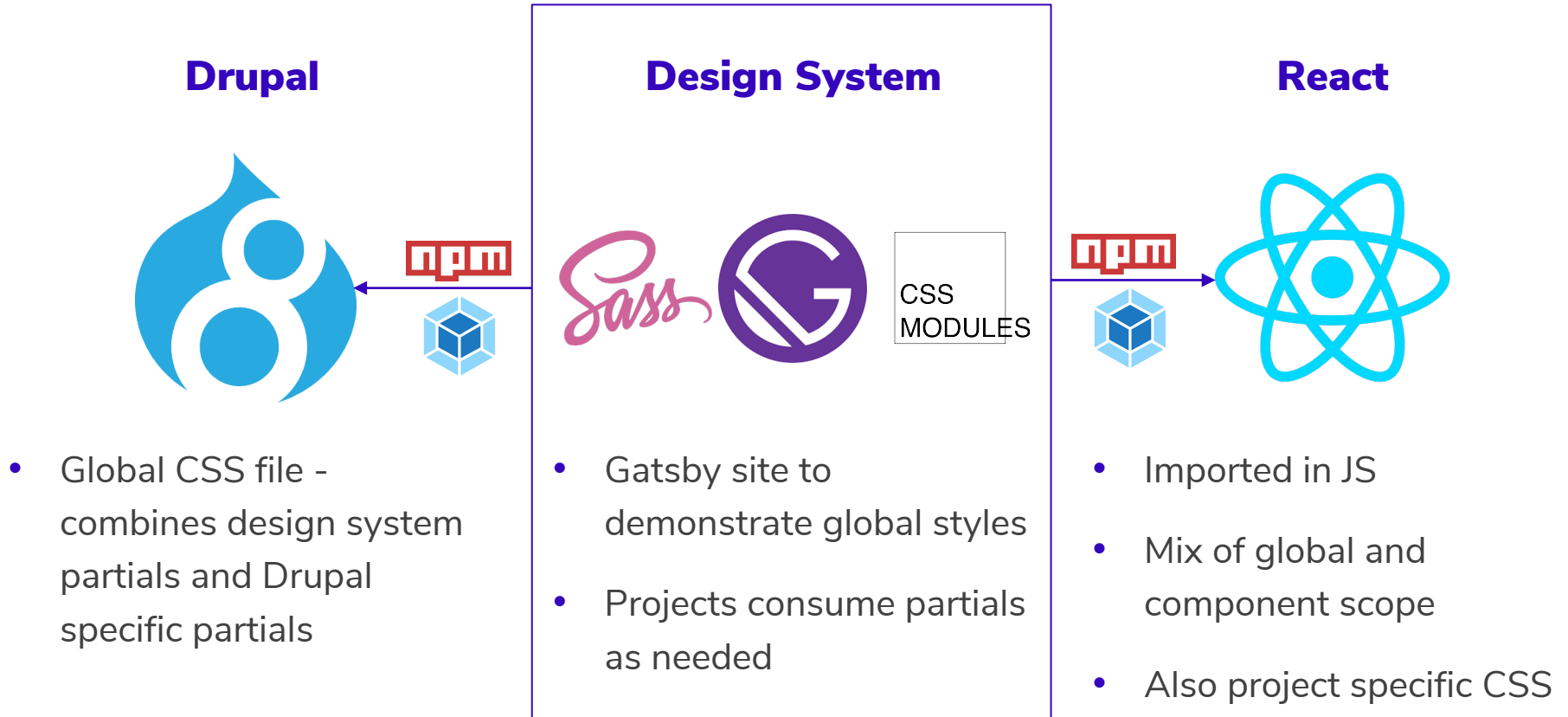
Filter :hov .cls +

```
.ProjectCard-module--project-card--3xTSe {  
  box-shadow:  
    0px 0px 2px 1px rgba(25, 17, 34,  
  background-color: white;  
  padding: 2rem;  
  display: block;  
  text-decoration: none;  
  border-radius: 10px;  
  width: 100%;  
}
```


GLOBAL CSS

```
1 // ProjectCard.js
2
3
4 import React from "react"
5 import { Link } from "gatsby"
6
7 import "../ProjectCard.scss"
8
9 const ProjectCard = (props) => (
10   <Link
11     to={props.link}
12     key={props.link}
13   >
14     <div className="project-card">
15       <div className="language">{props.language}</div>
16       <div className="title">{props.title}</div>
17       <div className="description">{props.description}</div>
18       <p>More info ></p>
19     </div>
20   </Link>
21 );
22
23 export default ProjectCard
24
```

INITIAL APPROACH – SEPARATE REPOS



CONSUMING THE DESIGN SYSTEM

```
    },  
    "devDependencies": {  
      "my-design-system": "git@bitbucket.org:hs2studio/my-design-system.git#v1.0.3"  
    }  
  }  
}
```

- Use ~ for non-relative imports

```
47  /* Base  
48  ===== */  
49  @import '~my-design-system/ds-styles/base/all';  
50  @import '~my-design-system/ds-styles/base/base';  
51  @import '~my-design-system/ds-styles/base/block';  
52  @import '~my-design-system/ds-styles/base/buttons';  
53  @import '~my-design-system/ds-styles/base/forms';  
54  @import '~my-design-system/ds-styles/base/helpers';  
55  @import '~my-design-system/ds-styles/base/style-guide';  
56  @import '~my-design-system/ds-styles/base/typography';  
57  @import '~my-design-system/ds-styles/base/vertical-rhythm';  
58  @import 'base/drupal';  
59  
60  /* Element  
61  ===== */  
62  @import '../source/_patterns/02-elements/**/*.scss';  
63  
64  /* Component  
65  ===== */  
66  @import '../source/_patterns/03-components/**/*.scss';  
67
```

NOT WELL RECEIVED BY TEAM

- Managing dependencies is tedious
 - Multiple PRs for a single feature
- Newcomers unsure where to make changes
- Isolated React development possible without standalone repo
- Really just one website at the end of the day, right?

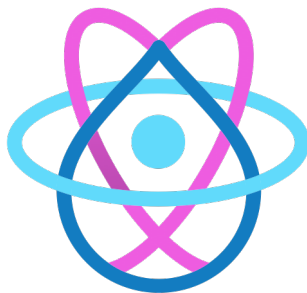


REVISED APPROACH – SINGLE REPO

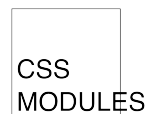
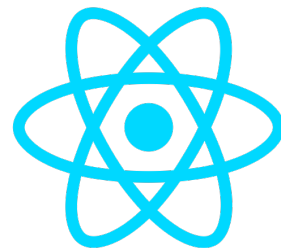
Drupal Tooling



Website



React Tooling



LESSONS LEARNED

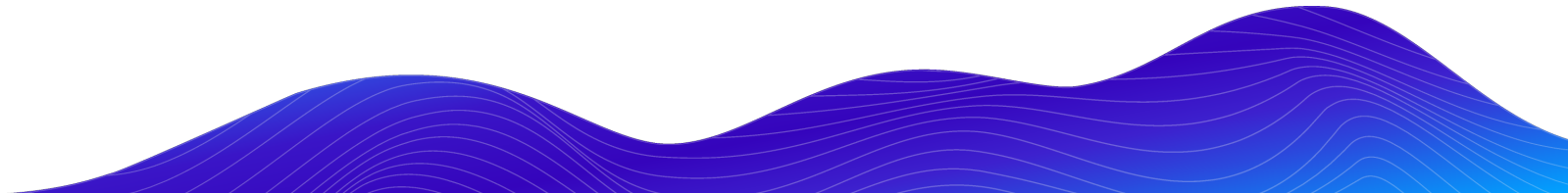
- Different Webpack build quirks can be a pain
- Dependency Tradeoffs
 - Multiple repos introduces overhead
 - One repo opens doors to regression
- Don't over design your design system
 - Is this really even a design system?
 - More shared styles or design tokens.

WHAT WE AREN'T DOING (YET)

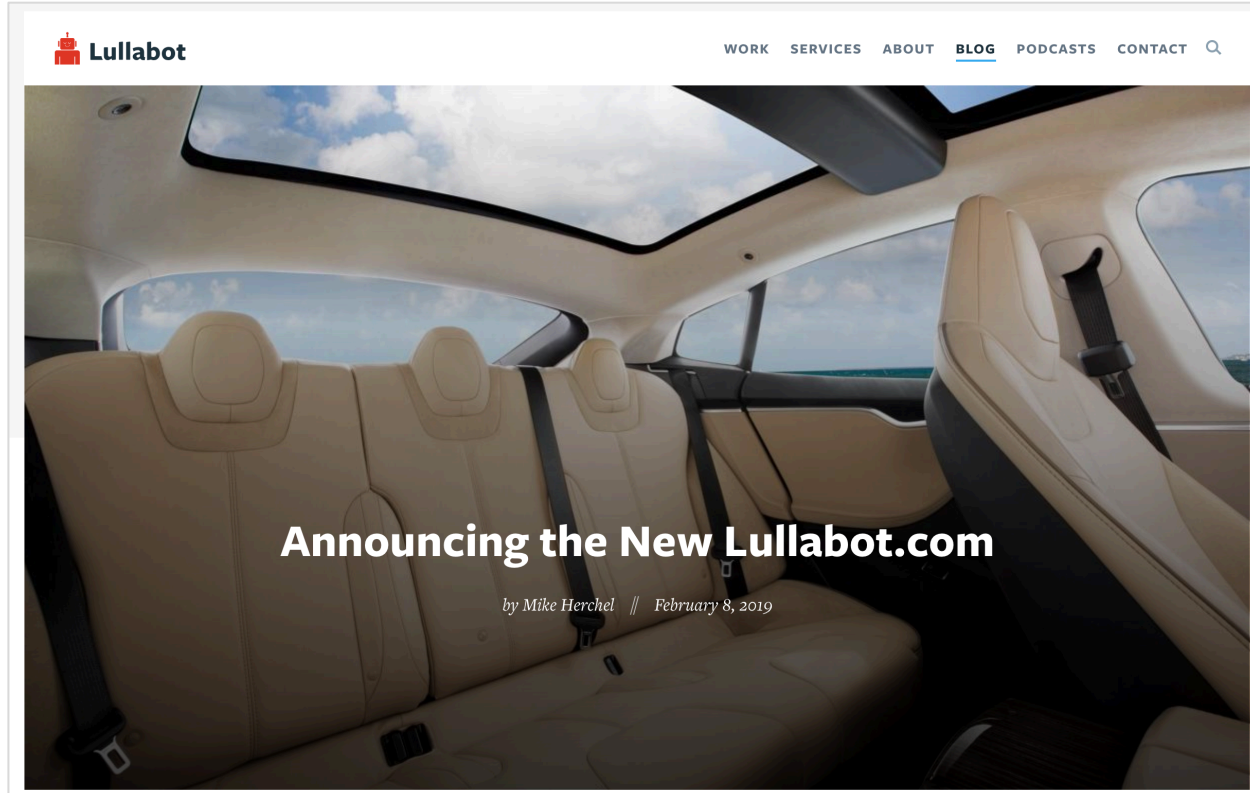
- Sharing Components
 - Limited overlap thus far
 - Small opportunities for shared JS
 - Full component re-use probably requires more js – React or Web Components.
- Monorepo approach to manage dependencies
- Hot Module Replacement in Drupal

TO EXTERNAL OR NOT EXTERNAL

or: Where should YOU put the mustard?



YOUR NEEDS MAY BE DIFFERENT



THINGS TO CONSIDER

- Would there be value in re-using these components?
 - Sometimes hard to know for sure.
- What role do prototypes play in project?
 - Is prototyping in code important?
 - Will design system be published independently?
- How will this align with your team's workflow?
- How compatible is this with your team's makeup?
 - Will it allow more people to contribute?
- Is locking down design system desirable?
- Component related Drupal challenges

ONE MUSTARD DOES NOT FIT ALL





Thank You!

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