WordPress
+ React

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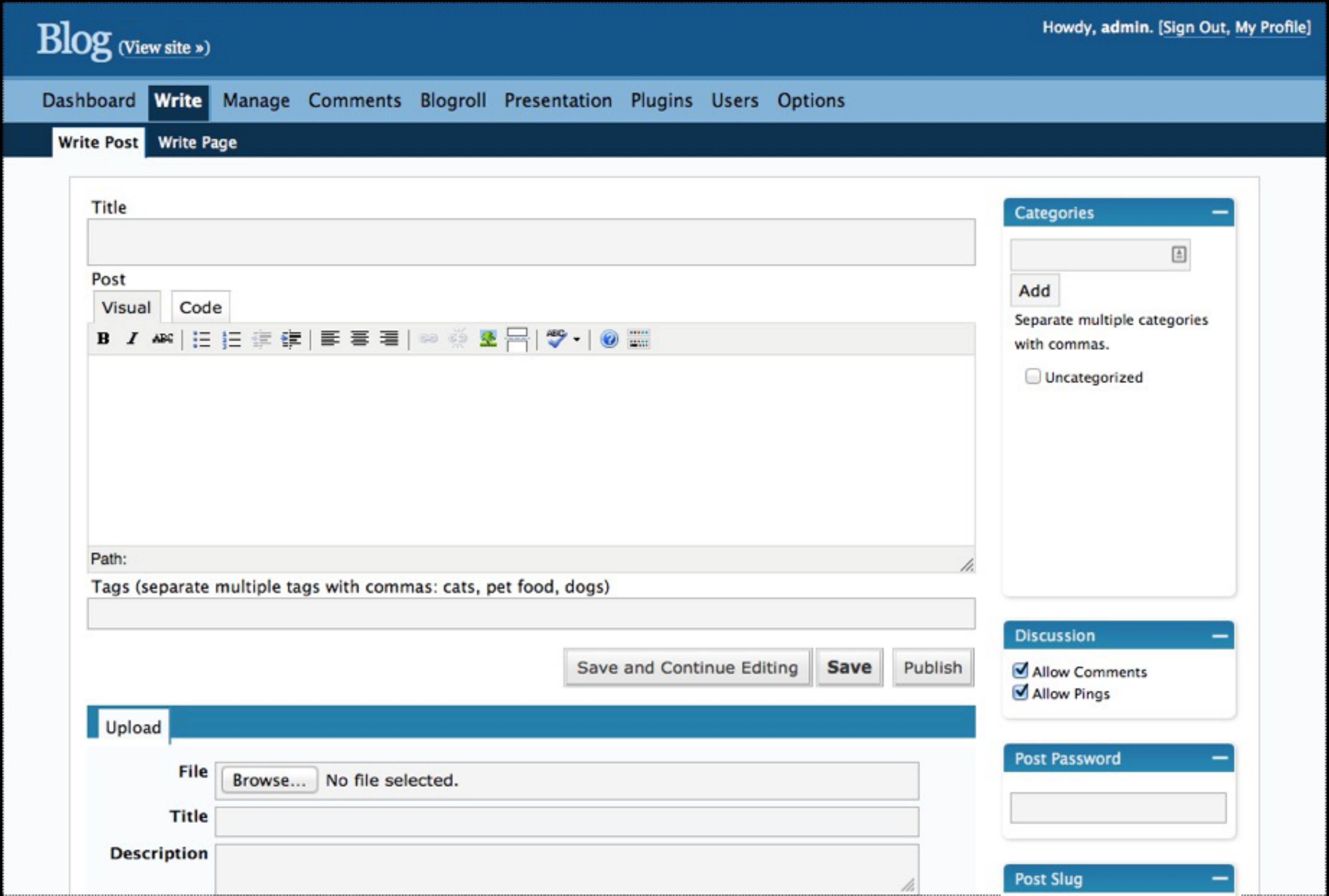
WordCamp US 2015

What is the future of **WP Admin**?

WordPress 2.0 “Duke” (2005)



Tags (separate multiple tags with commas: cats, pet food, dogs)

No file selected.

Separate multiple categories with commas.

□ Uncategorized

☑ Allow Comments
☑ Allow Pings

CSS3

HTML5

pushState

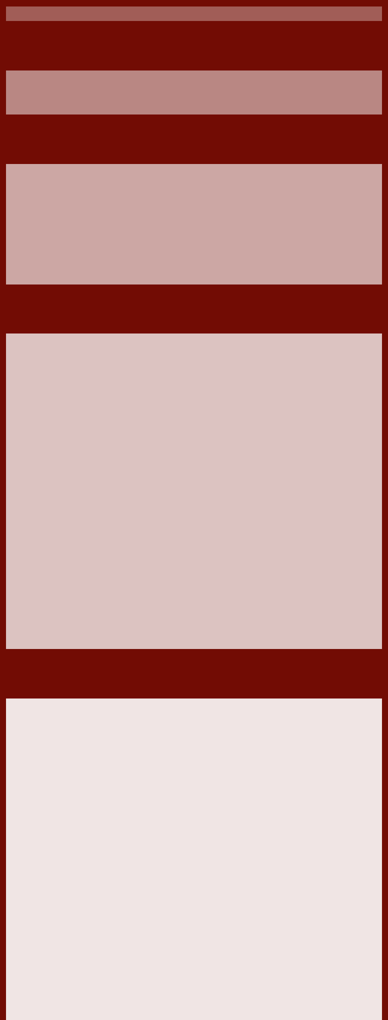
localStorage

Animations

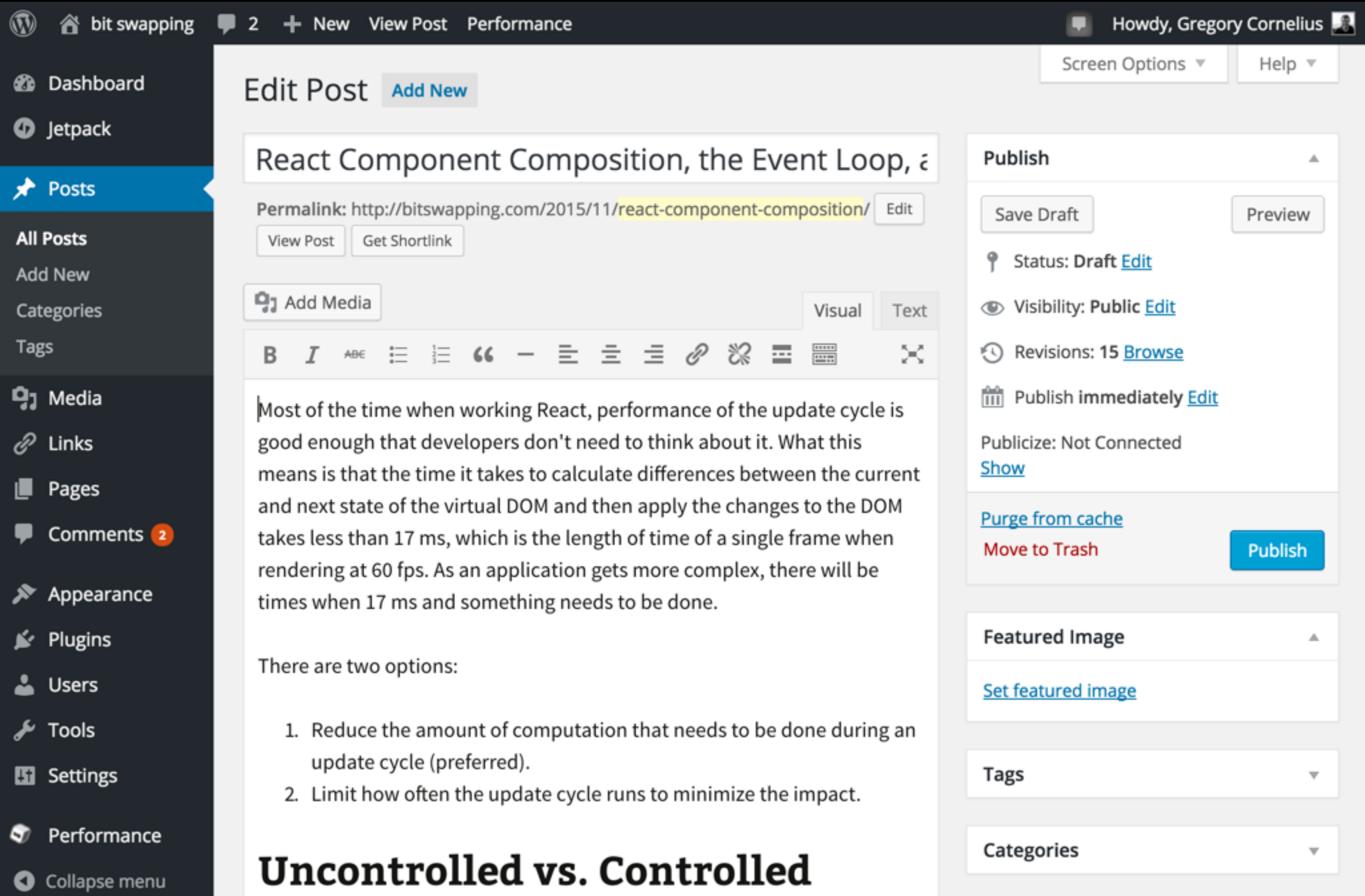
“The UI helps people understand and interact with the content, but never competes with it.”

iOS Human Interface Guidelines

Speed



WordPress 4.3.1 “Billie” (2015)



React Component Composition, the Event Loop, a

Permalink: http://bitswapping.com/2015/11/react-component-composition/

Status: Draft Edit

Visibility: Public Edit

Revisions: 15 Browse

Publish immediately Edit

Publicize: Not Connected Show

Most of the time when working React, performance of the update cycle is good enough that developers don't need to think about it. What this means is that the time it takes to calculate differences between the current and next state of the virtual DOM and then apply the changes to the DOM takes less than 17 ms, which is the length of time of a single frame when rendering at 60 fps. As an application gets more complex, there will be times when 17 ms and something needs to be done.

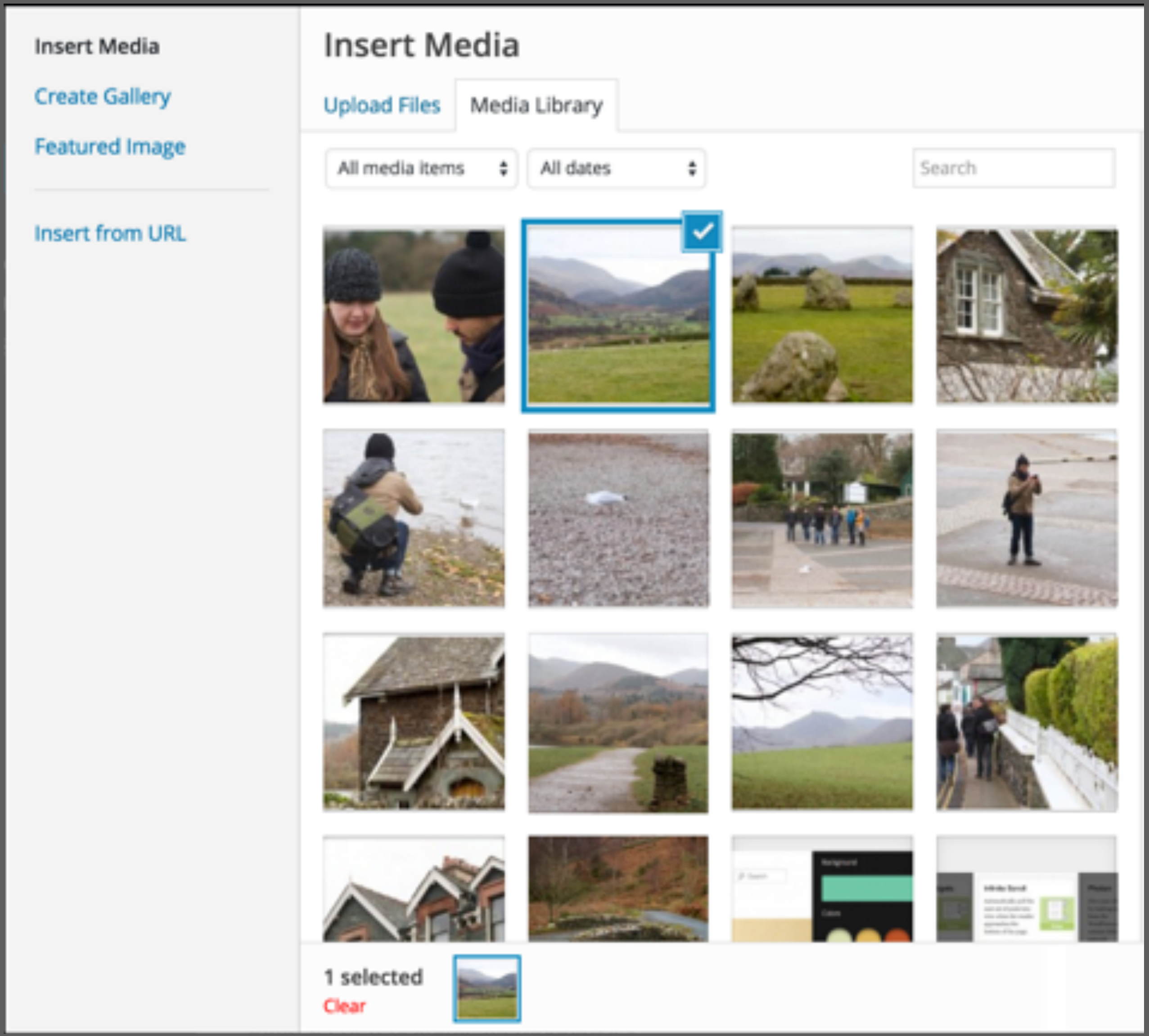
There are two options:

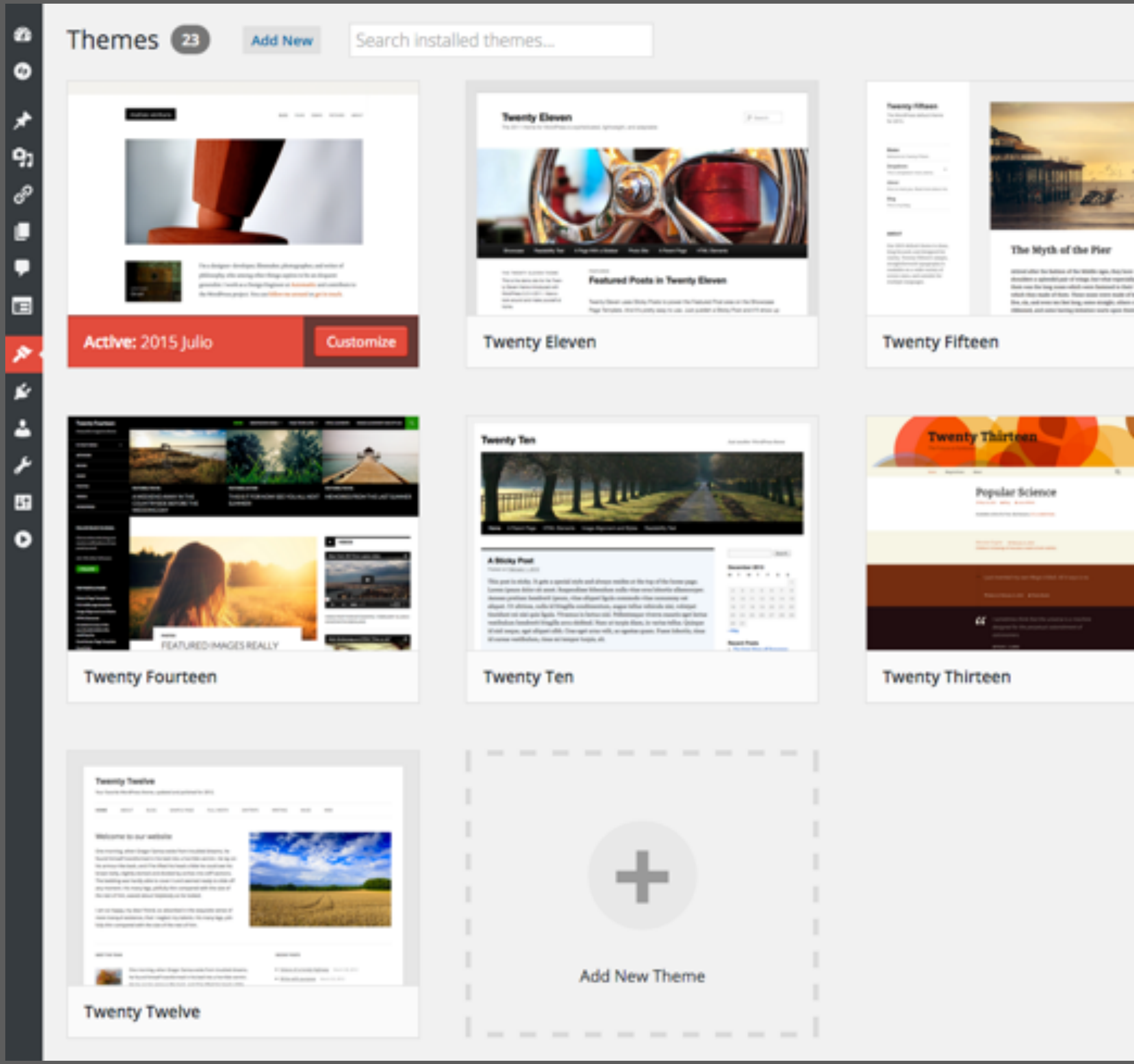
1. Reduce the amount of computation that needs to be done during an update cycle (preferred).
2. Limit how often the update cycle runs to minimize the impact.

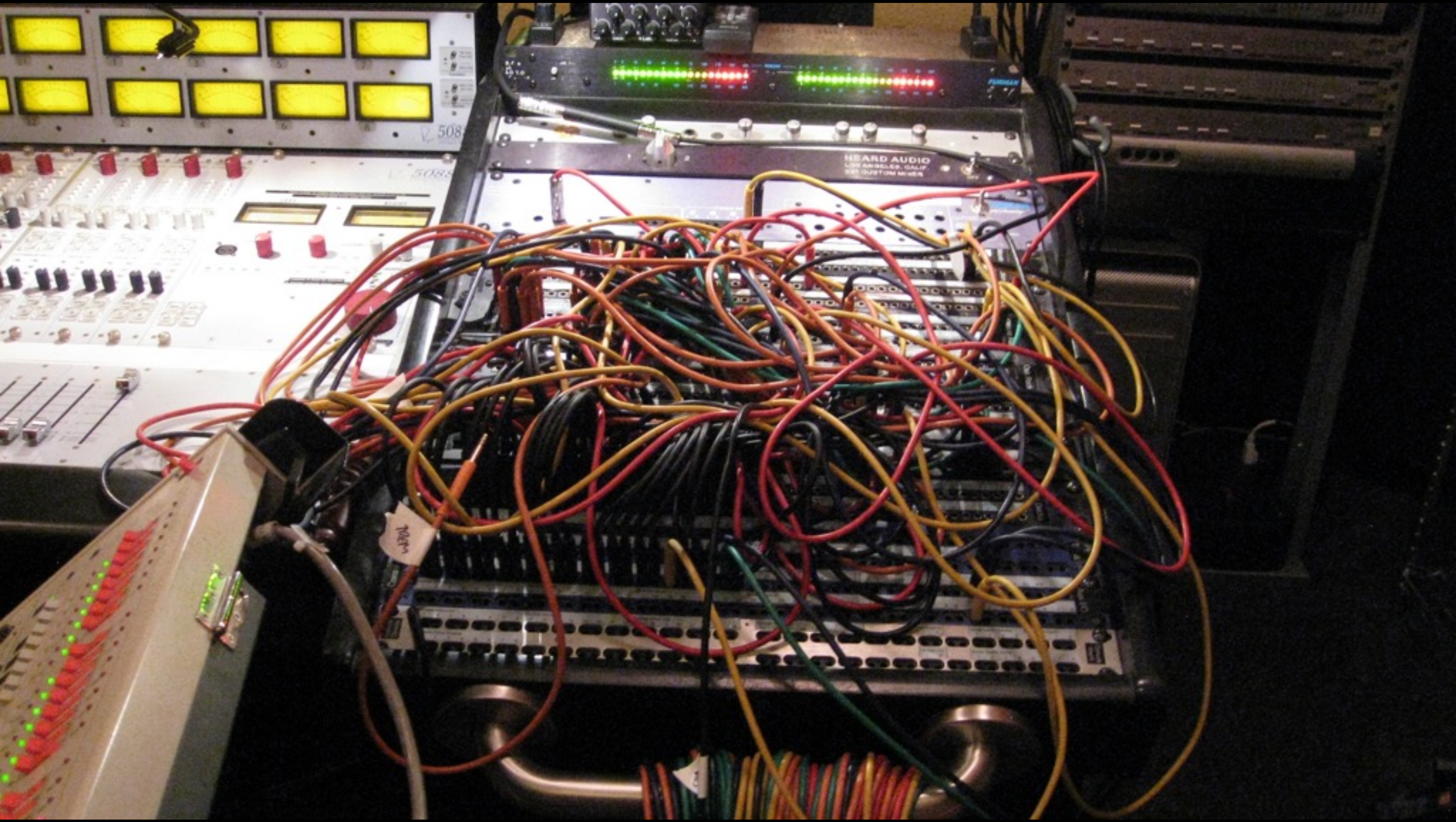
Uncontrolled vs. Controlled

“…in the past WP hadn’t done a good job of building the real-time experience that we as modern web customers have come to expect.”

Om Malik


Insert Media
Create Gallery
Featured Image
Insert from URL
Insert Media
Upload Files
Media Library
All media items
All dates
Search
1 selected
Clear


Themes 23
Add New
Search installed themes...
Active: 2015 Julio
Customize
Twenty Eleven
Twenty Fifteen
Twenty Fourteen
Twenty Ten
Twenty Thirteen
Twenty Twelve
Add New Theme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React

A declarative view layer written in pure **JavaScript** that **simplifies** the process of building complex UIs.

f

NETFLIX

YAHOO!

airbnb

HubSpot

WordPress.com

{ Calypso }

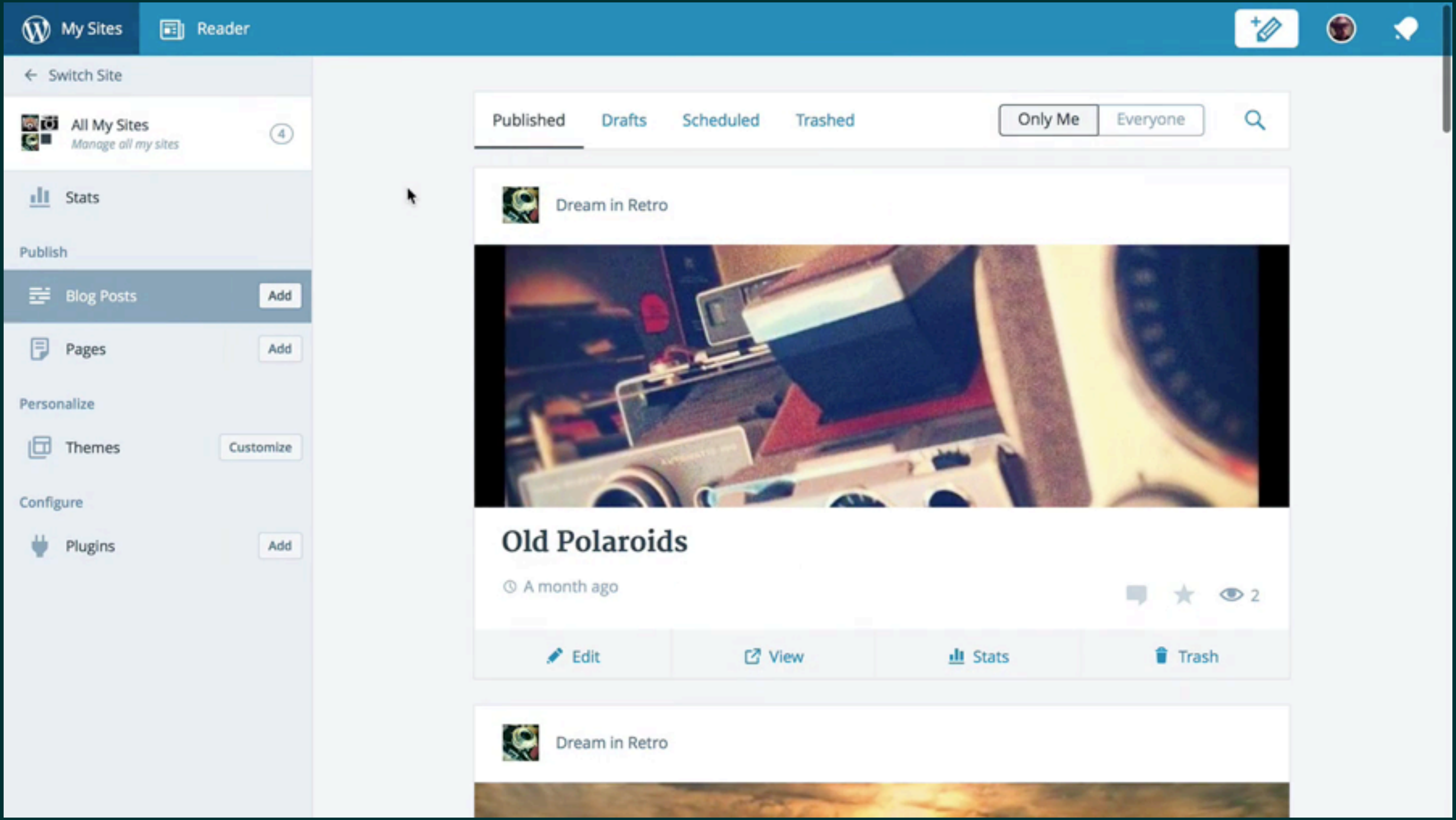
developer.wordpress.com/calypso

WordPress.com
My Sites
Reader
Switch Site
Vickie's Things
View Site
Stats
Plan
Publish
Blog Posts
Pages
Personalize
Themes
Menus
COMMENT
Vickie
Our Weekend on the Island
Marcus
What a great time! This really makes me want to go back soon.
Liked
Approved
Trash
Spam
Me too. Summer can't come soon enough.
SEND
All
Unread
Comments
Follows
Likes
TODAY
Marcus commented on Our Weekend on the Island
Angela and 5 others liked your comment on Sunrise
Hannah replied to your comment
Julia and 8 others liked your post Our Weekend on the Island
Erin and 9,830 others followed your blog Vickie's Things
Discover
Editors' Picks
Lights in the Dark
Thanks for Reading
Followed Sites
Trinity College Library

Single-Page App

Written in JavaScript

Driven by WP.com REST API


My Sites
Reader
Switch Site
All My Sites
Manage all my sites
4
Stats
Publish
Blog Posts
Add
Pages
Add
Personalize
Themes
Customize
Configure
Plugins
Add
Published
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Scheduled
Trashed
Only Me
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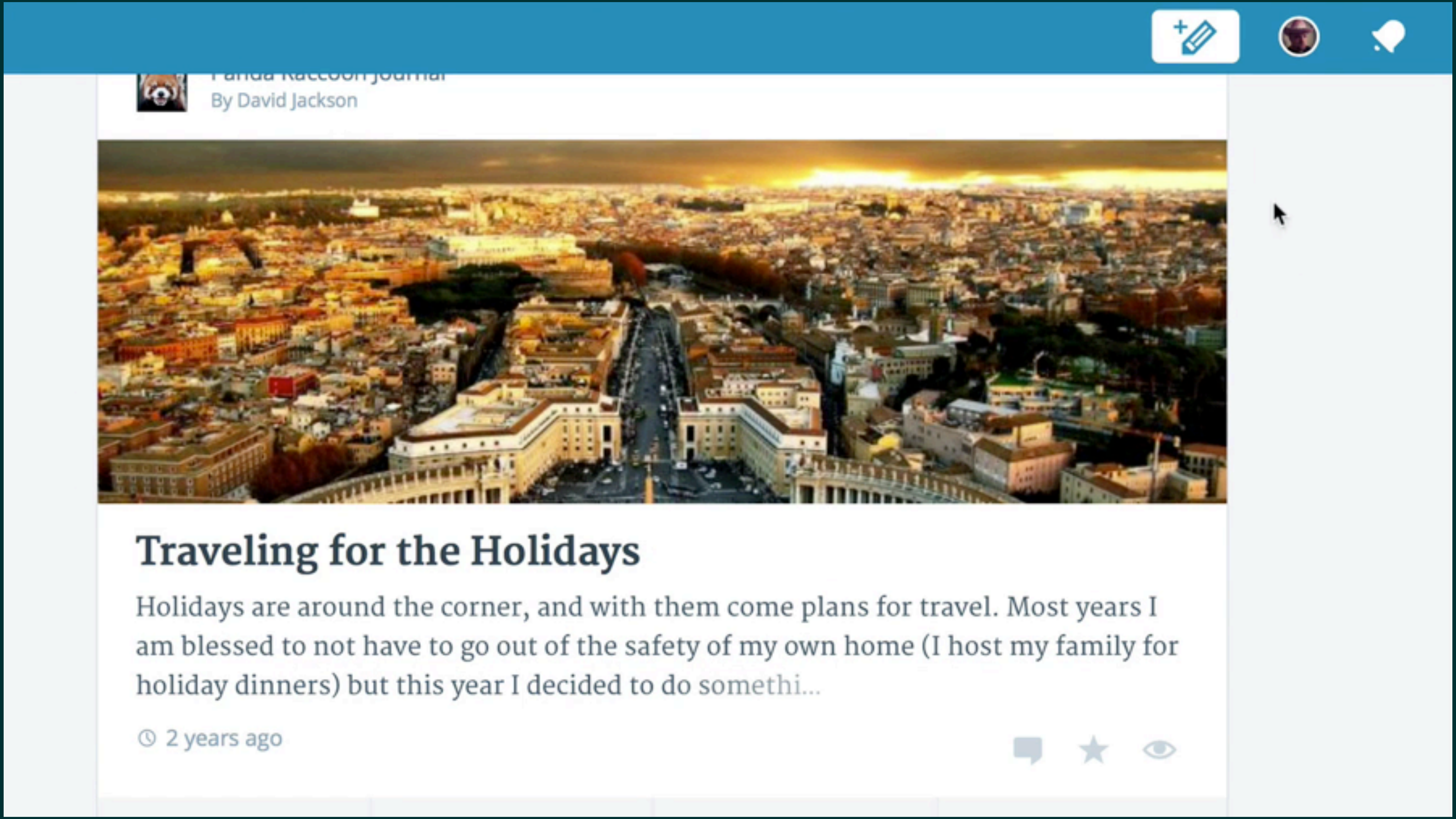
A month ago
2
Edit
View
Stats
Trash
Dream in Retro

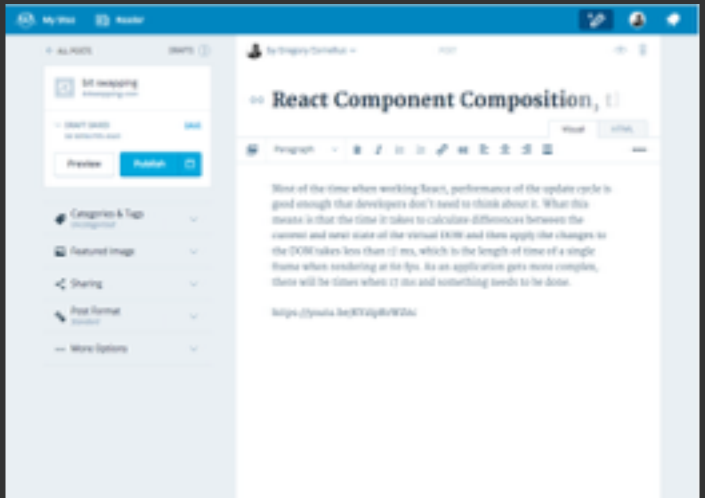


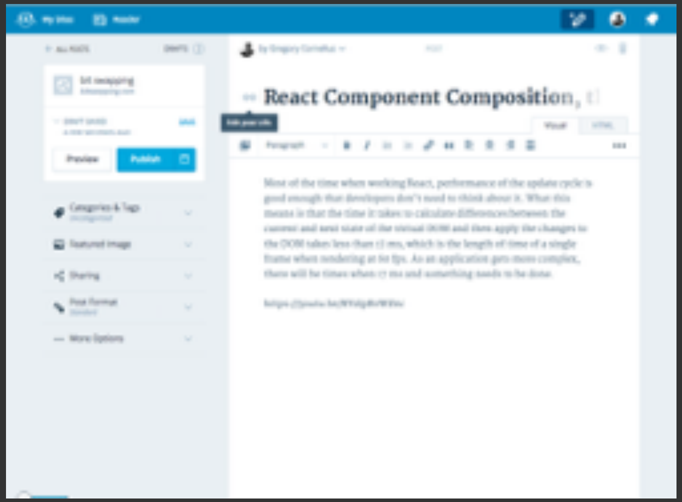
Panda Raccoon Journal
By David Jackson

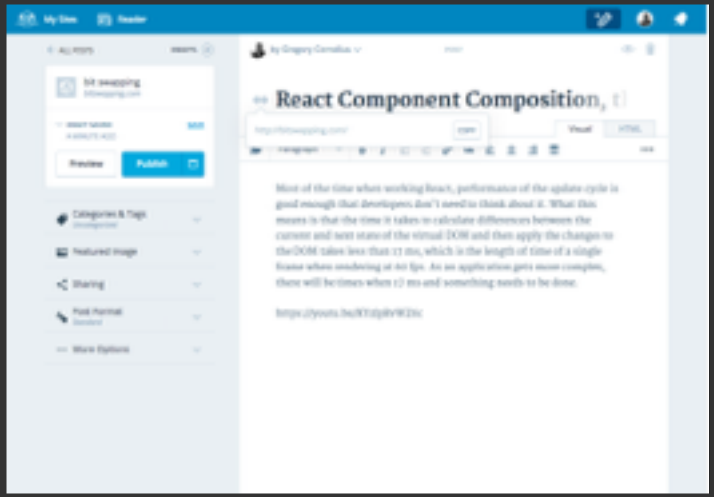
Traveling for the Holidays

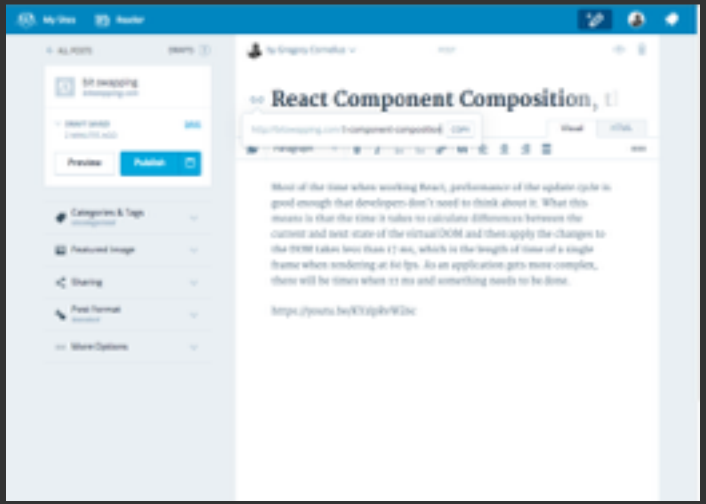
Holidays are around the corner, and with them come plans for travel. Most years I am blessed to not have to go out of the safety of my own home (I host my family for holiday dinners) but this year I decided to do somethi...

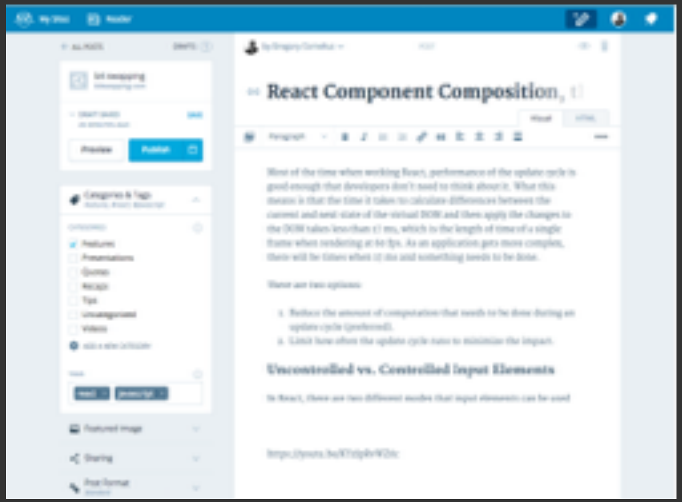
2 years ago

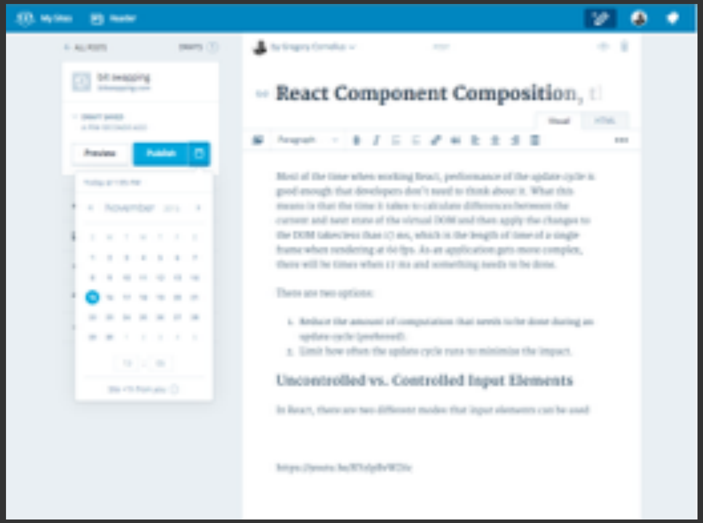









React Component Composition,
Uncontrolled vs. Controlled Input Elements


React Component Composition,
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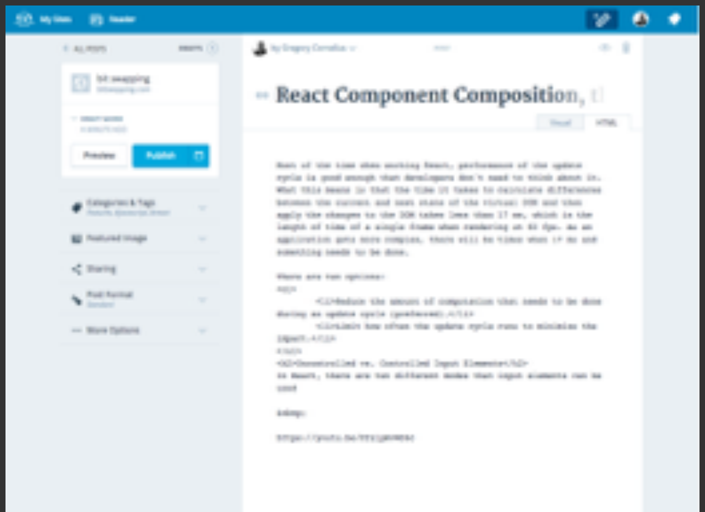
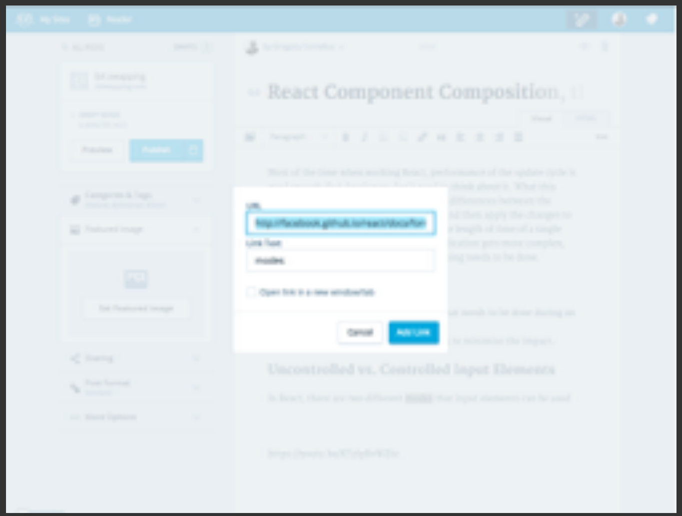
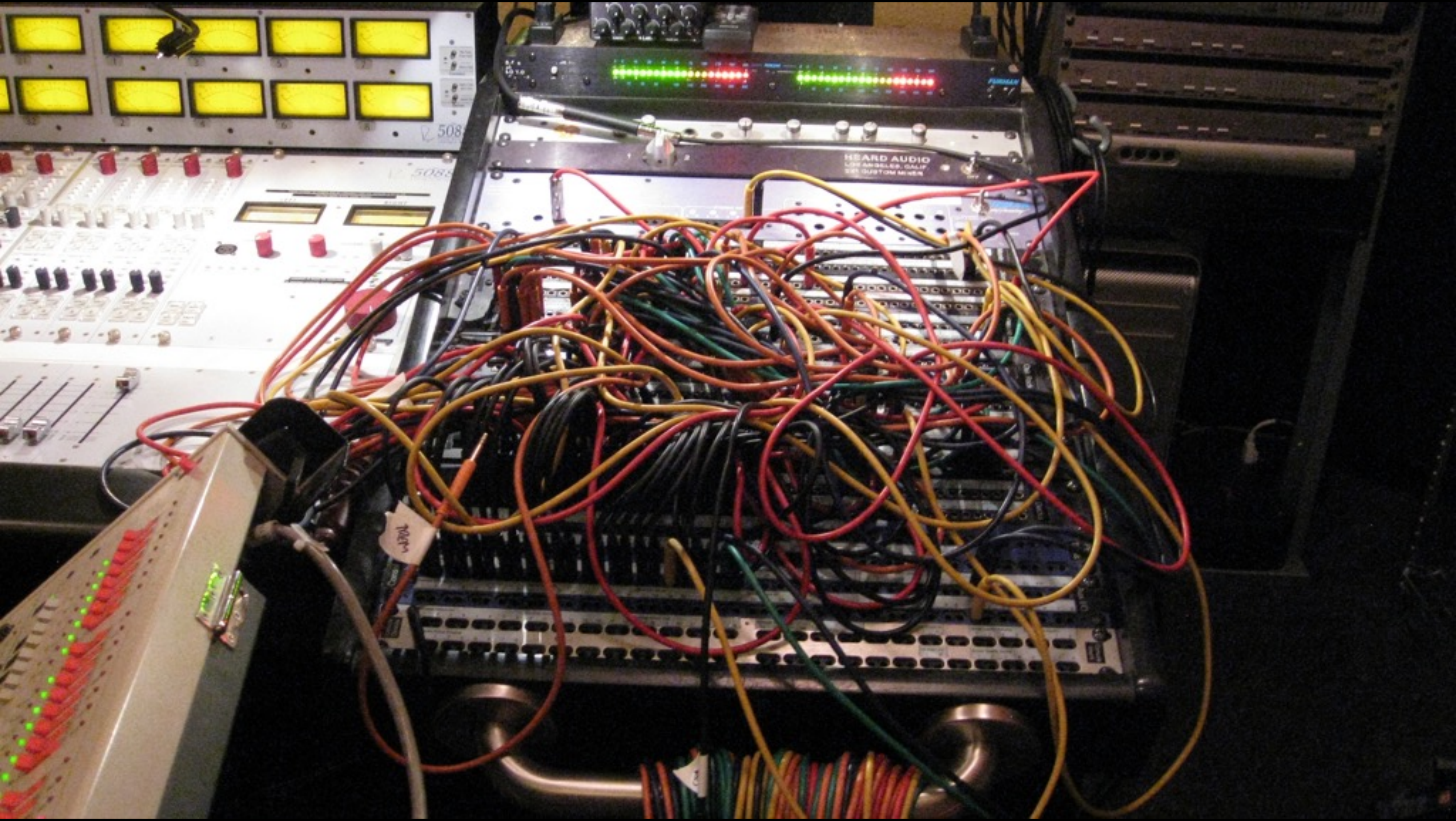



React Component Composition,
Uncontrolled vs. Controlled Input Elements

Editor UI States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React key features

- Small API that is easy to learn.
- No need for a separate template language. Embrace JavaScript.
- Events are bound as element properties which limits need for DOM traversal.
- Composition of components is simple and first-class.

Just Render()

React will be smart about updating the DOM.

```
const DOMNode = document.getElementByID( 'hello-container' );

function HelloMessage( props ) {
  return React.DOM.h3( null, props.name );
}

ReactDOM.render(
  React.createElement( HelloMessage, { name: 'Hello, World!' } ),
  DOMNode
);
// DOMNode.innerHTML = '<h3>Hello, World!</h3>'

ReactDOM.render(
  React.createElement( HelloMessage, { name: 'Hello, World!' } ),
  DOMNode
);
// no DOM operations

ReactDOM.render(
  React.createElement( HelloMessage, { name: 'Howdy, Matías' } ),
  DOMNode
);
// DOMNode.firstChild.textContent = 'Howdy, Matias';
```

see http://codepen.io/gcorne/pen/meNWPP

{ functions > template language }

```
const HelloComponent = React.createClass({
  render() {
    return React.DOM.div(
      { className: 'hello' },
      React.DOM.h3( null, 'Hello, World!' )
    );
  }
});

ReactDOM.render(
  React.createElement( HelloComponent ),
  document.getElementById( 'hello-container' )
);
```

see http://rauchg.com/2015/pure-ui/

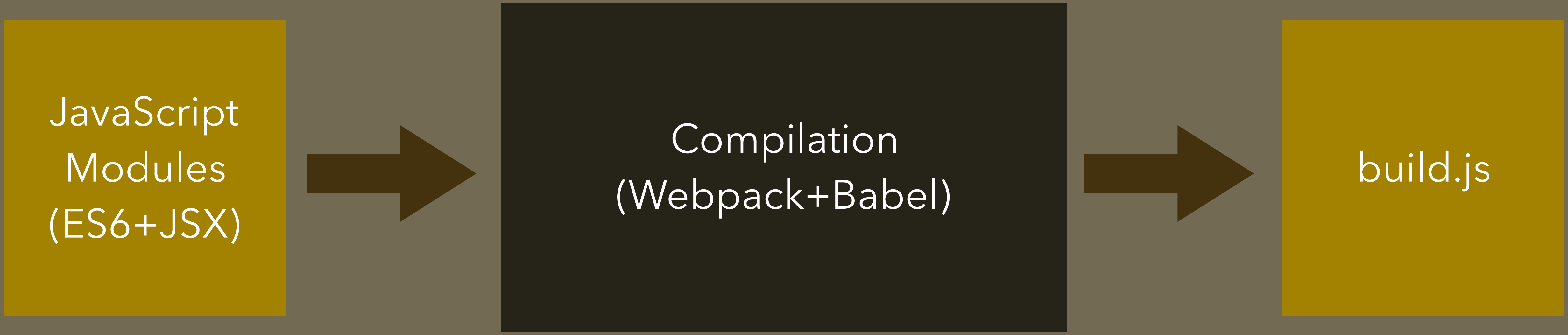
Increase readability via the **JSX** syntax extension

```
const HelloComponent = React.createClass({
  render() {
    return (
      <div className="hello">
        <h3>Hello, World!</h3>
      </div>
    );
  }
});

ReactDOM.render(
  <HelloComponent />,
  document.getElementById( 'hello-container' )
);
```

see http://codepen.io/gcorne/pen/MaNmWd

Compiling JSX



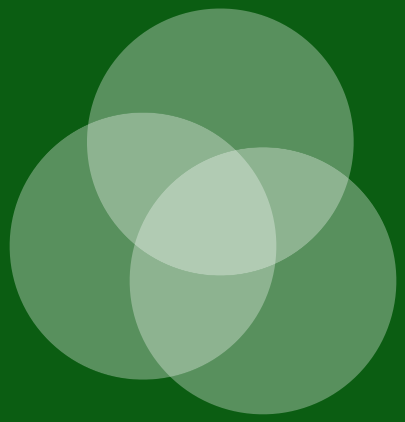
JavaScript Modules (ES6+JSX)

Compilation (Webpack+Babel)

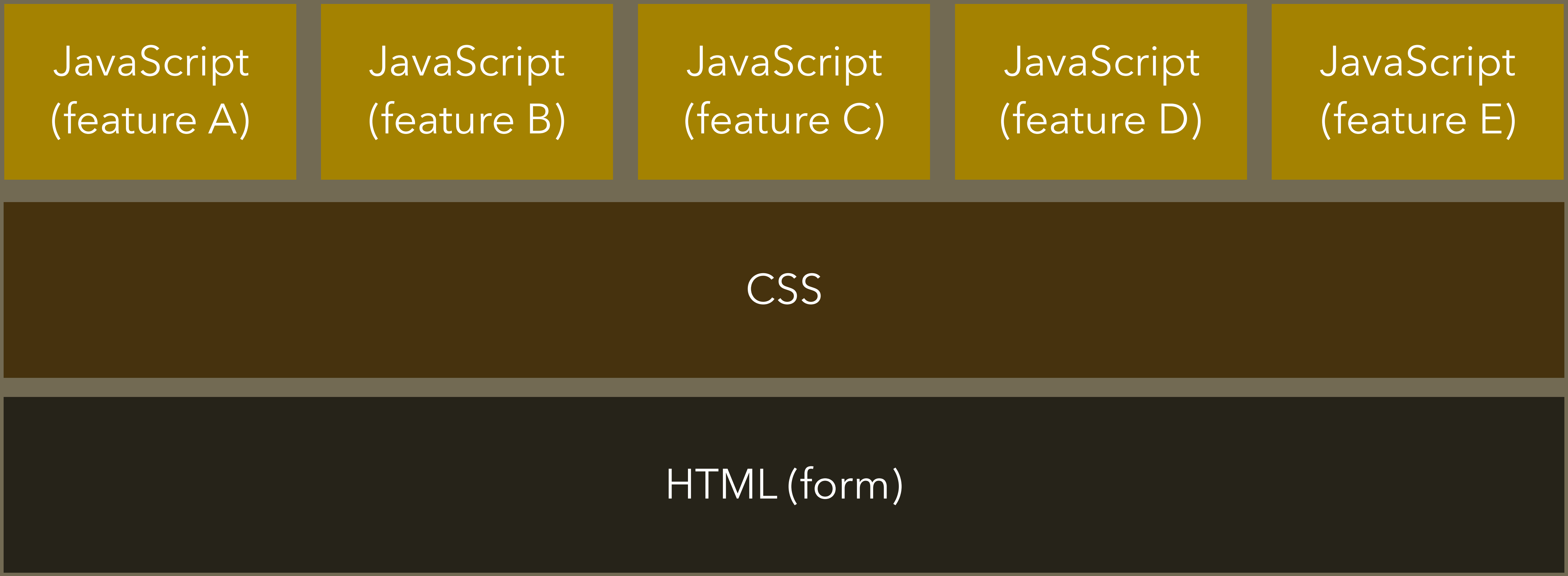
build.js

```
export default React.createClass( {
  getInitialState() {
    return {
      showPreview: false
    };
  },
  showPreview() {
    this.setState( { showPreview: true } );
  },
  render() {
    return (
      <div className="post">
        { this.state.showPreview &&
          <Preview post={ post } />
        }
        <span className="post__date">{ this.props.post.date }</span>
        <h4 className="post__title">
          <a className="post__title-link" href={ this.props.post.URL }>
            { this.post.title || '(no title)' }
          </a>
        </h4>
        <button onClick={ this.showPreview }>Preview</button>
      </div>
    );
  }
} );
```

Why do *components* matter?



Progressive Enhancement



JavaScript (feature A)

JavaScript (feature B)

JavaScript (feature C)

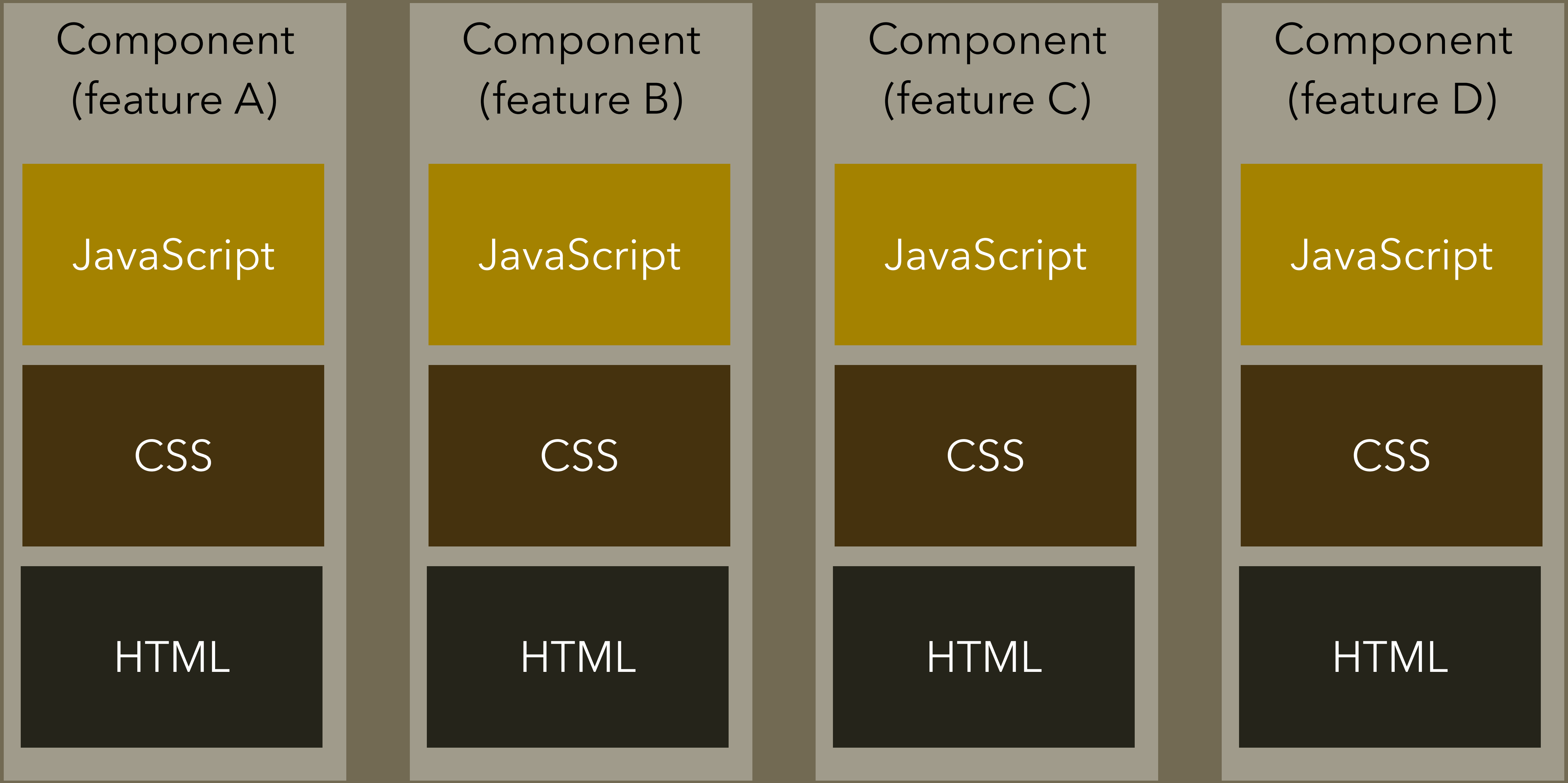
JavaScript (feature D)

JavaScript (feature E)

CSS

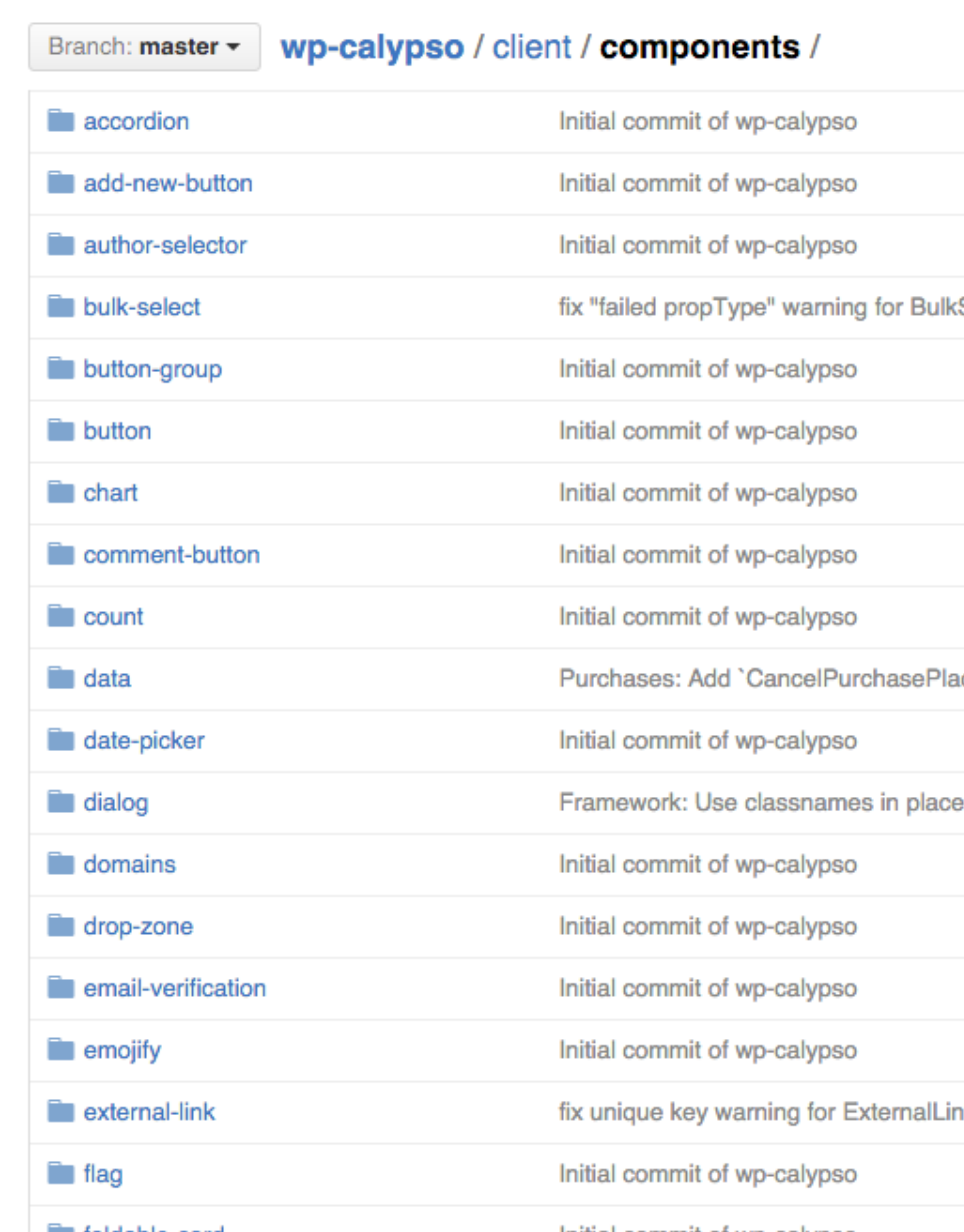
HTML (form)

Components



Component (feature A)	Component (feature B)	Component (feature C)	Component (feature D)
JavaScript	JavaScript	JavaScript	JavaScript
CSS	CSS	CSS	CSS
HTML	HTML	HTML	HTML

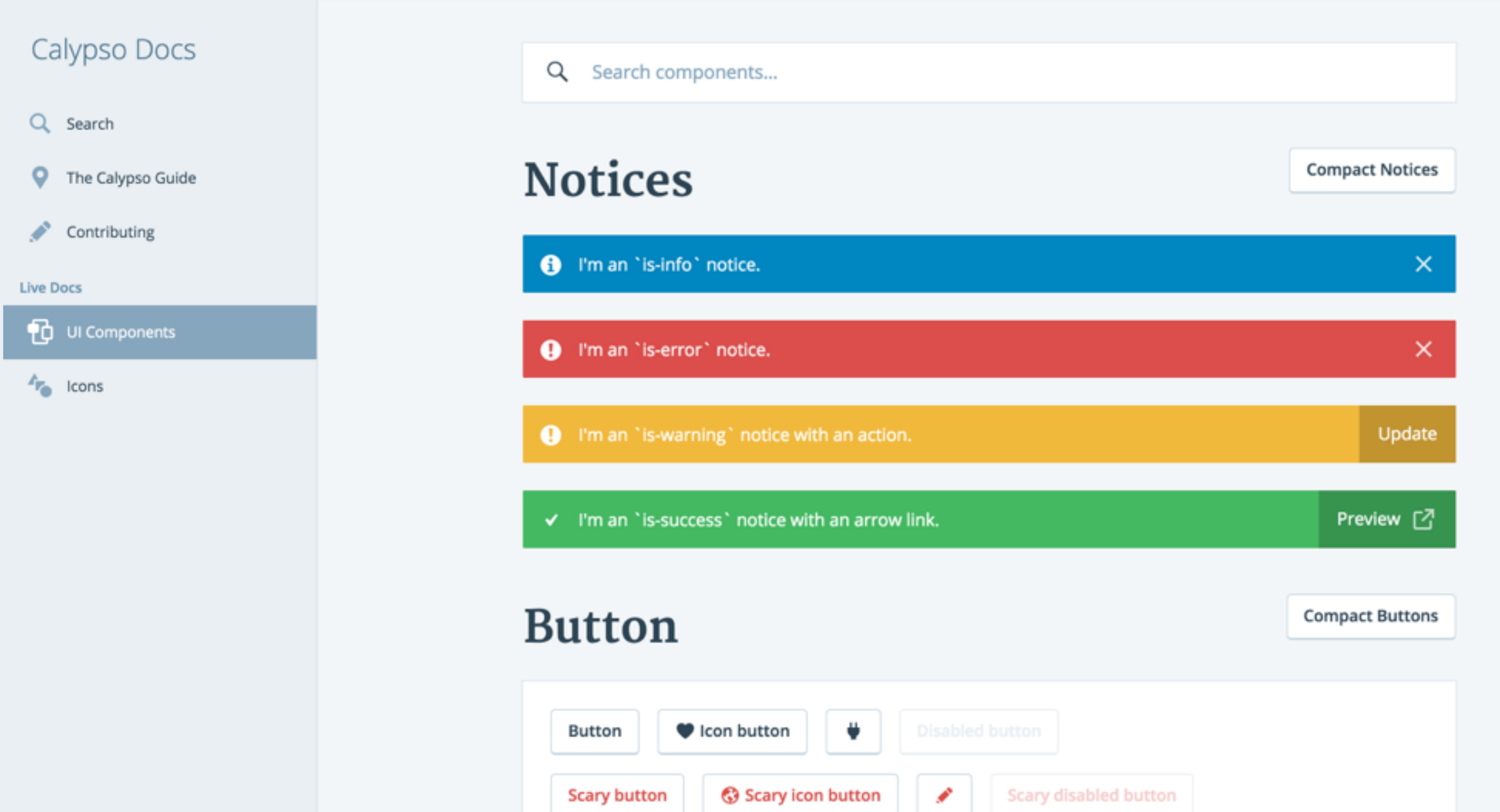
JSX + Sass



Branch: **master** ▾ wp-calypso / client / **components** /

accordion	Initial commit of wp-calypso
add-new-button	Initial commit of wp-calypso
author-selector	Initial commit of wp-calypso
bulk-select	fix "failed propType" warning for BulkS
button-group	Initial commit of wp-calypso
button	Initial commit of wp-calypso
chart	Initial commit of wp-calypso
comment-button	Initial commit of wp-calypso
count	Initial commit of wp-calypso
data	Purchases: Add `CancelPurchasePla
date-picker	Initial commit of wp-calypso
dialog	Framework: Use classnames in place
domains	Initial commit of wp-calypso
drop-zone	Initial commit of wp-calypso
email-verification	Initial commit of wp-calypso
emojify	Initial commit of wp-calypso
external-link	fix unique key warning for ExternalLin
flag	Initial commit of wp-calypso

Live components gallery



Notices

I'm an `is-info` notice.

I'm an `is-error` notice.

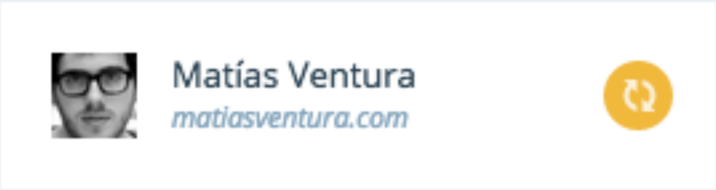
I'm an `is-warning` notice with an action.

I'm an `is-success` notice with an arrow link.

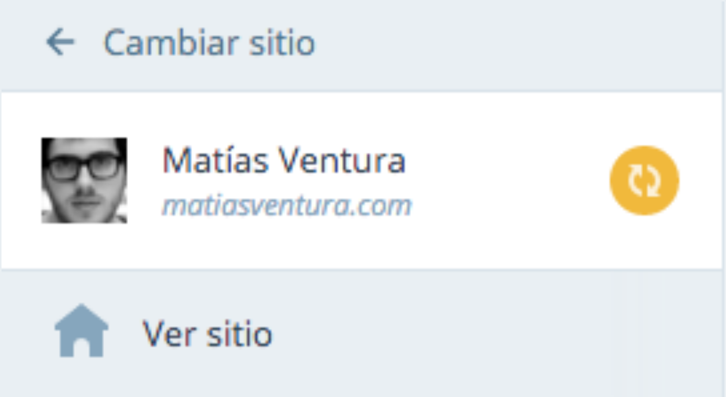
Button

Composition

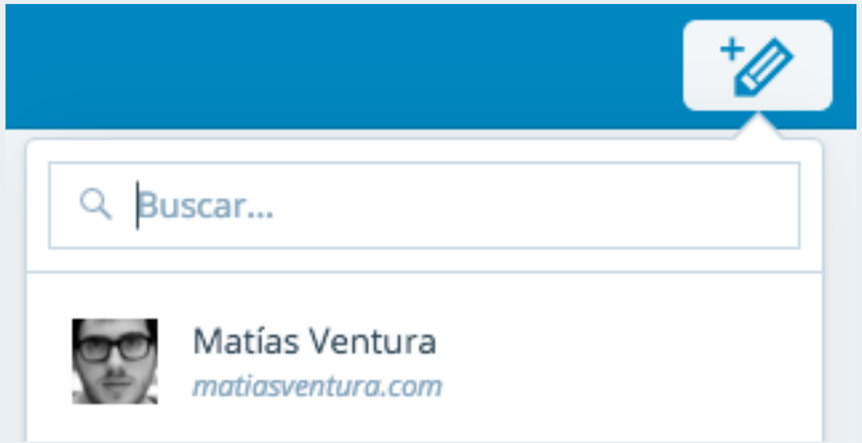
<Site>



<Sidebar>



<SitePopover>



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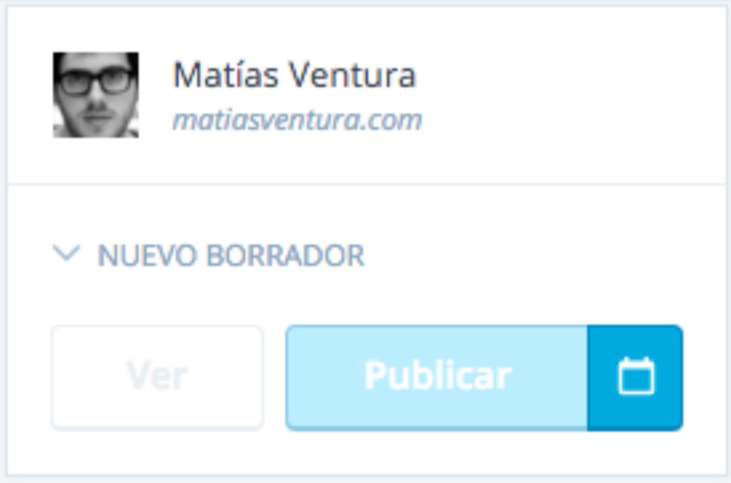

Components begin to define app level **semantics**.

NATIVE HTML

<header>

APP

<Site>

Defines a language that
transcends the medium,
one which can be applied to
mobile, the **web**, and **desktop**.

This is just the **beginning**…

github.com/Automattic/wp-calypso

Using React in

Plugins & Themes

{ WP React Boilerplate }

github.com/gcorne/wp-react-boilerplate

Thoughts

- Library of WP UI components?
- A new WP Admin UI powered by components?
- React Native WordPress apps that are pluggable and accessible to more contributors?
- How do plugins look when they can be API focused, client focused, or both?

do()

- Install **Calypso** and play around with it.
- If you consider yourself a **PHP** developer that knows jQuery, consider investing in learning more **JavaScript**.
- Try dipping your toes in the water using **React** for something.
- Take a look at React Native.

Thank you.

Gregory Cornelius

@gcorne

Matías Ventura

@matias_ventura