Building a Real-time App with React, Flux, Webpack, and Firebase

Introduction

Hendrik Swanepoel

tagtree.io | @hendrikswan

A Real World Stack for React Apps

Introduction

Hendrik Swanepoel

tagtree.io | @hendrikswan

The Issues Addressed by This Stack

Builds and Packaging

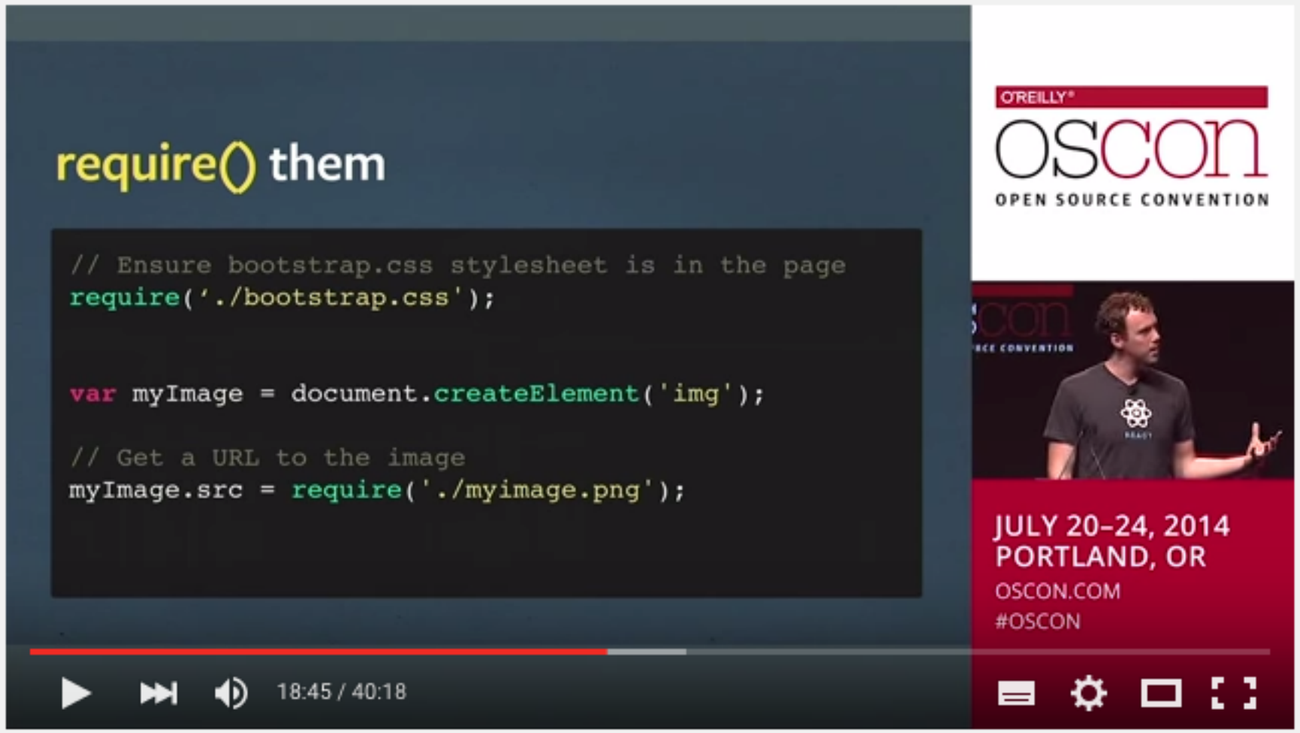
Material Design

Flux

Realtime Backend

ES7

localhost:8080/#/chat
OSCON 2014: How Instagr
https://www.youtube.com/watch?v=VkTCL6Nqm6Y



OSCON 2014: How Instagram.com Works; Pete Hunt

Facebook Developers

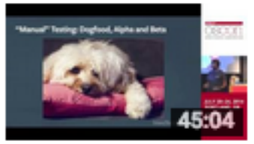
Subscribed 55,324

34,664

Add to Share More 590 8

Published on 4 Sep 2014

Up next Autoplay



OSCON 2014: How Open Source Powers Facebook on Android; Simon Stewart
by Facebook Developers
2,610 views

Getting Started with webpack
by Kyle Robinson Young
5,062 views

React.js Conf 2015 - Full Stack Flux
by Facebook Developers
38,030 views

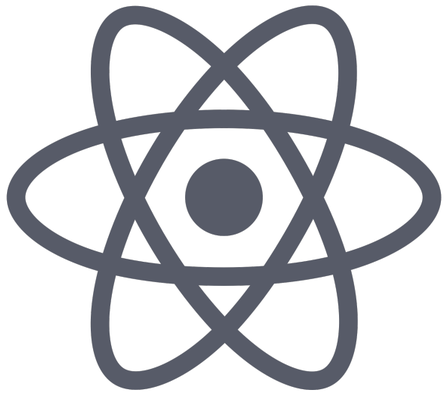
Hacker Way: Facebook's High Performance Server Infrastructure
by Facebook Developers
21,386 views

"React: RESTful UI Rendering" by Pete Hunt
by Strange Loop
30,568 views

Introduction to Webpack by Jeremy Lund
by Workfront – Front End Development
5,397 views

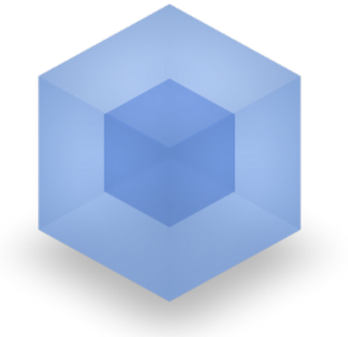
CS 294-101 01 Pete Hunt: React vs The

React Is a Library



It needs to be supported by a strong stack for builds, ui, design, and routing

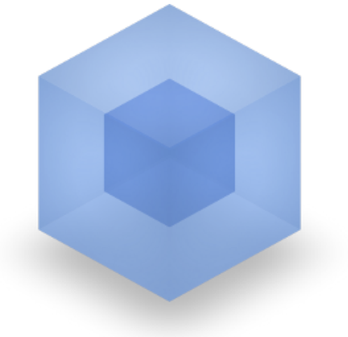
Builds



webpack
MODULE BUNDLER

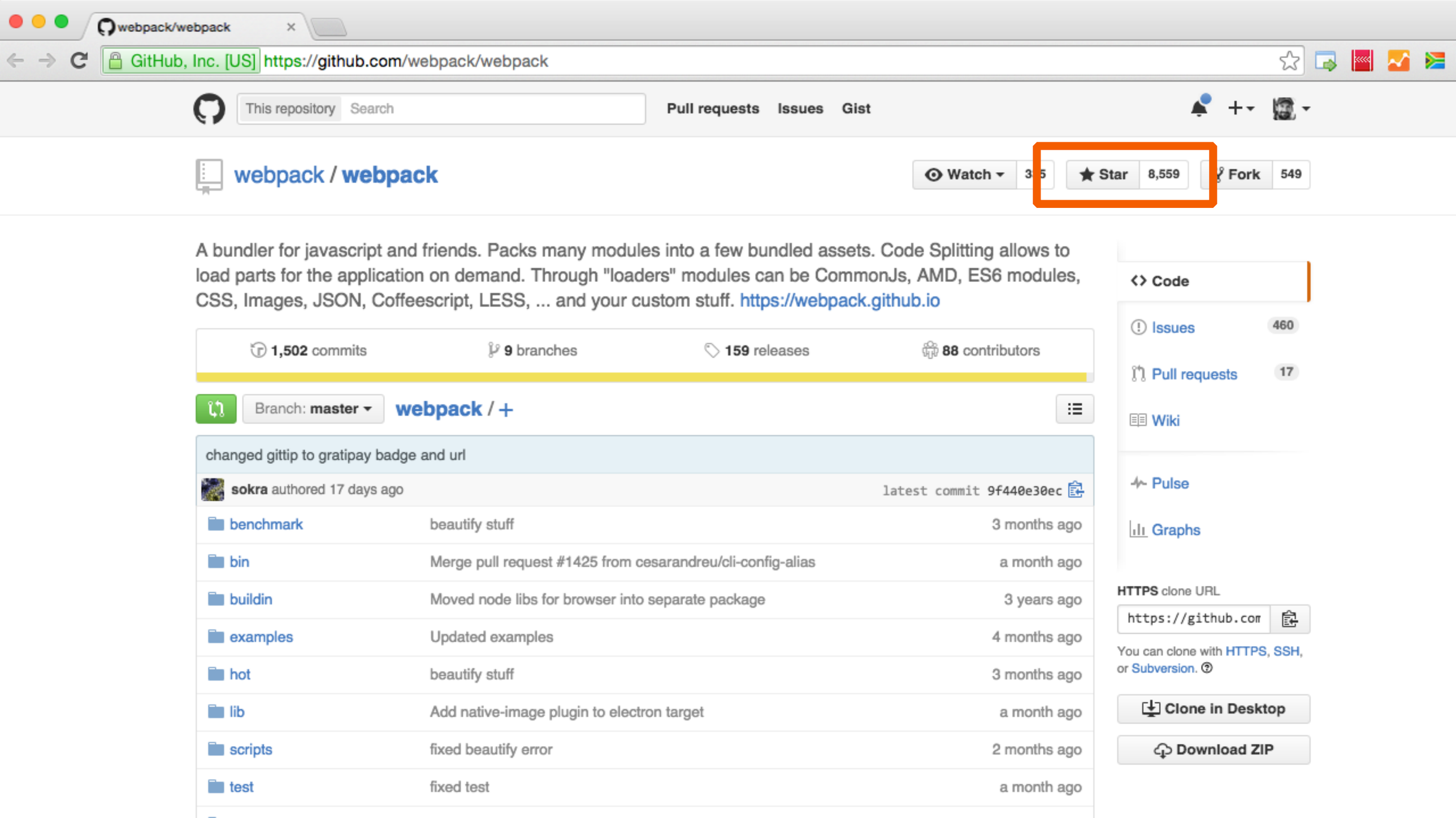
"Packs many modules into a few bundled assets" - webpack.github.io

Builds

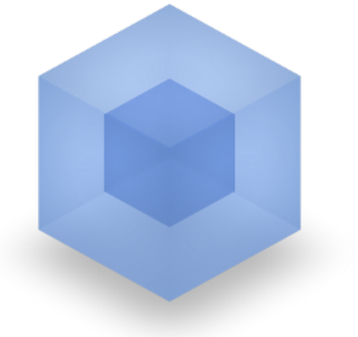


webpack
MODULE BUNDLER

Over 8,500 stars on github


webpack/webpack
GitHub, Inc. [US] https://github.com/webpack/webpack
This repository Search
Pull requests
Issues
Gist
webpack / webpack
Watch
Star 8,559
Fork 549
A bundler for javascript and friends. Packs many modules into a few bundled assets. Code Splitting allows to load parts for the application on demand. Through "loaders" modules can be CommonJs, AMD, ES6 modules, CSS, Images, JSON, Coffeescript, LESS, ... and your custom stuff. https://webpack.github.io
1,502 commits
9 branches
159 releases
88 contributors
Branch: master
webpack / +
changed gittip to gratipay badge and url
sokra authored 17 days ago
latest commit 9f440e30ec
benchmark beautify stuff 3 months ago
bin Merge pull request #1425 from cesarandreu/cli-config-alias a month ago
buildin Moved node libs for browser into separate package 3 years ago
examples Updated examples 4 months ago
hot beautify stuff 3 months ago
lib Add native-image plugin to electron target a month ago
scripts fixed beautify error 2 months ago
test fixed test a month ago
Code
Issues 460
Pull requests 17
Wiki
Pulse
Graphs
HTTPS clone URL
https://github.com
You can clone with HTTPS, SSH, or Subversion.
Clone in Desktop
Download ZIP

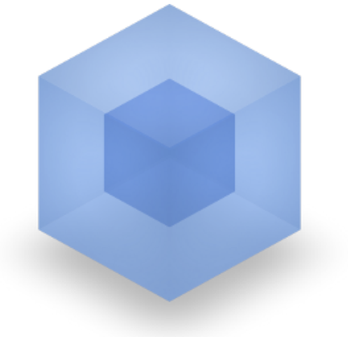
Builds



webpack
MODULE BUNDLER

Packs JS, images, and CSS into the same file!

Builds



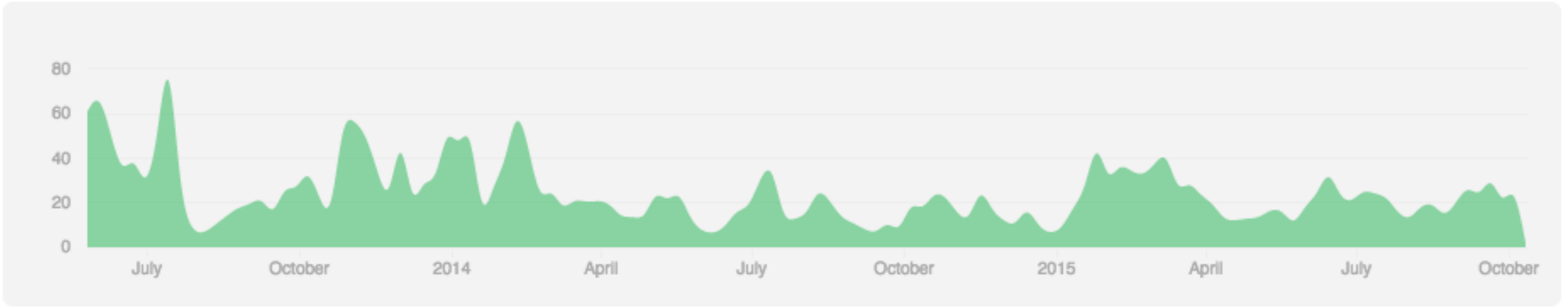
webpack
MODULE BUNDLER

ES7 through the babel loader

Contributors to facebook/r

GitHub, Inc. [US] https://github.com/facebook/react/graphs/contributors?from=2013-05-26&to=2015-10-12&type=c

Contributions to master, excluding merge commits



zpao #1

626 commits / 68,201 ++ / 108,543 --

spicyj #2

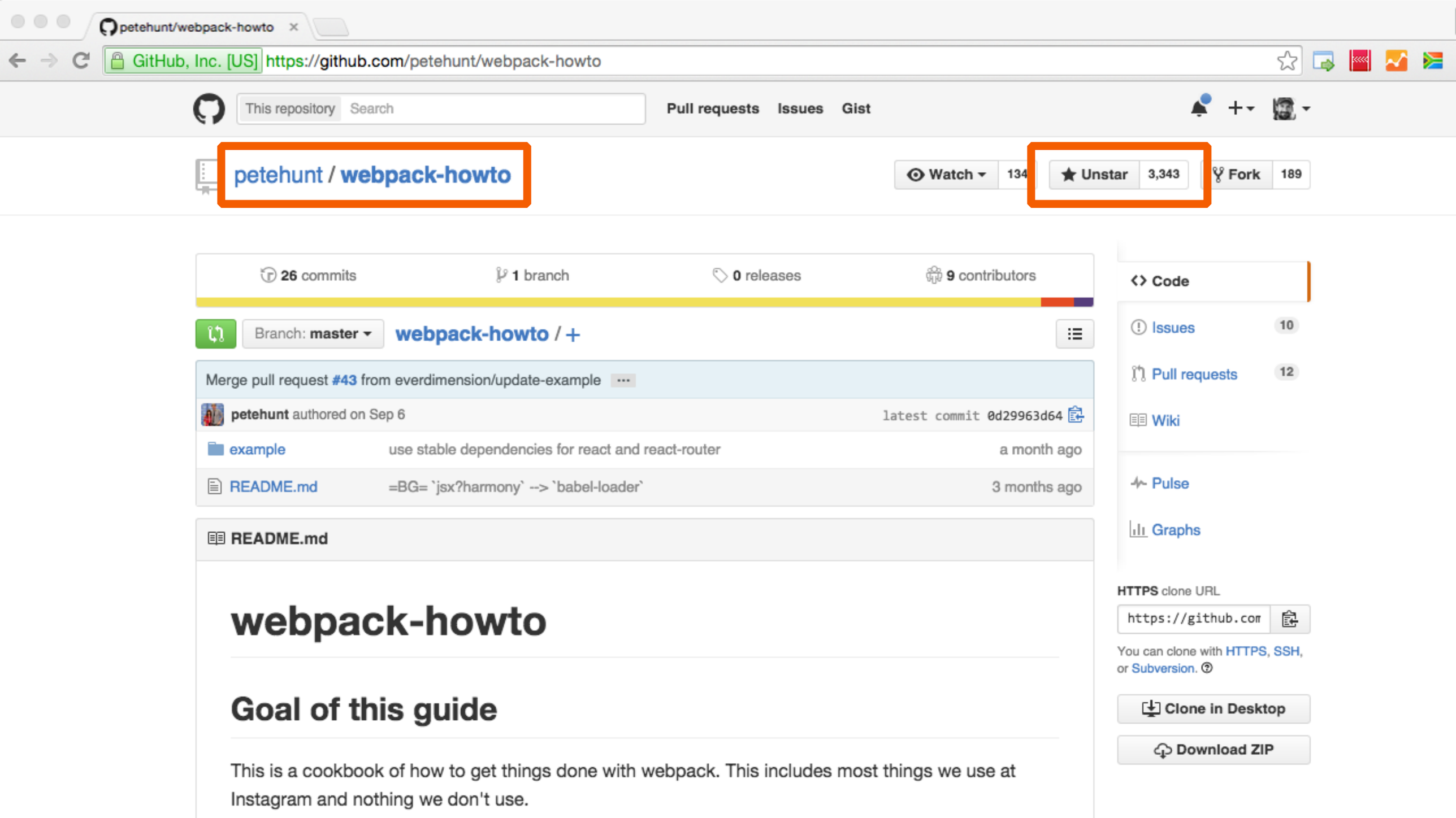
590 commits / 64,568 ++ / 18,409 --

petehunt #3

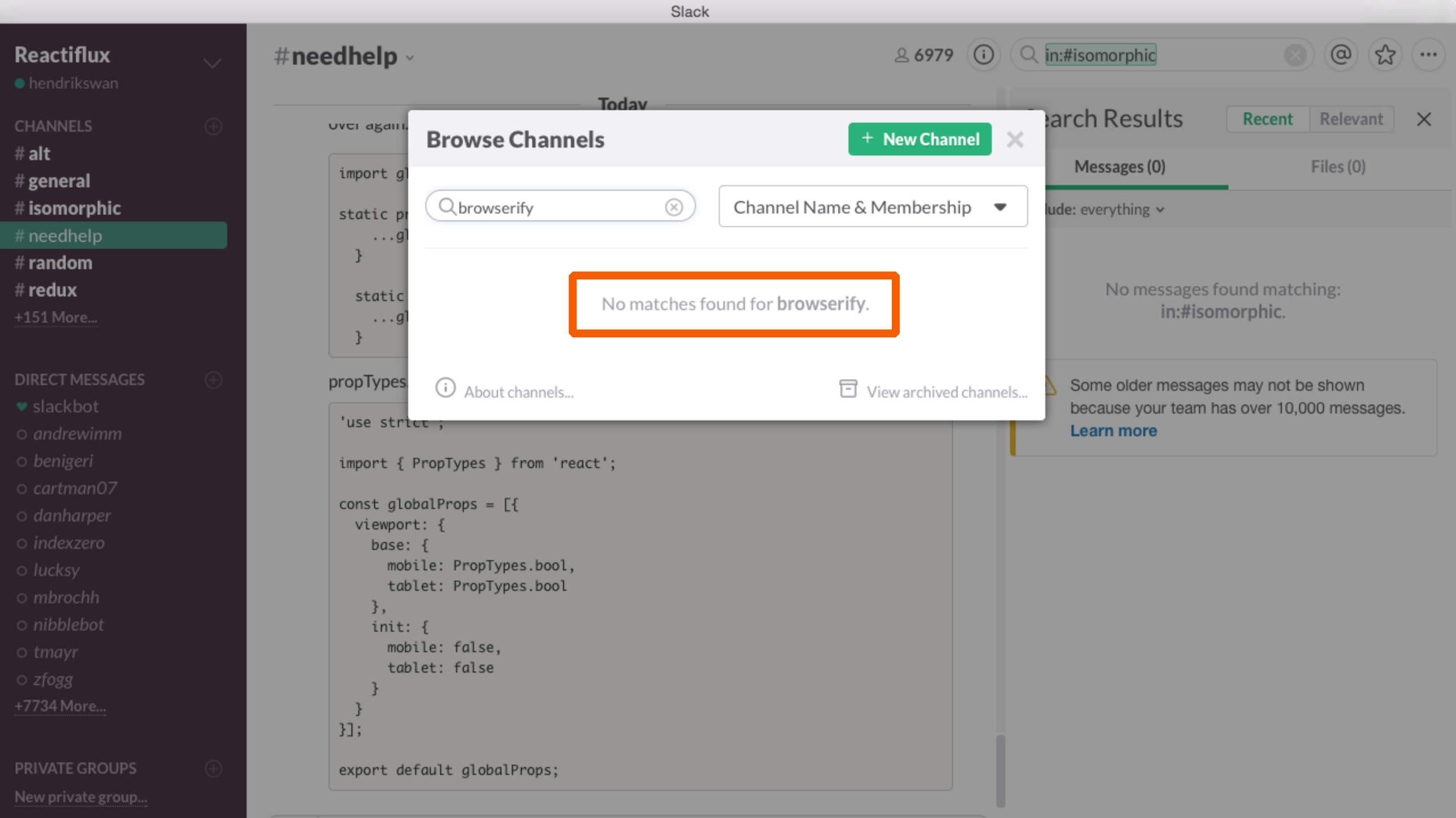
205 commits / 86,685 ++ / 30,811 --

sebmarkbage #4

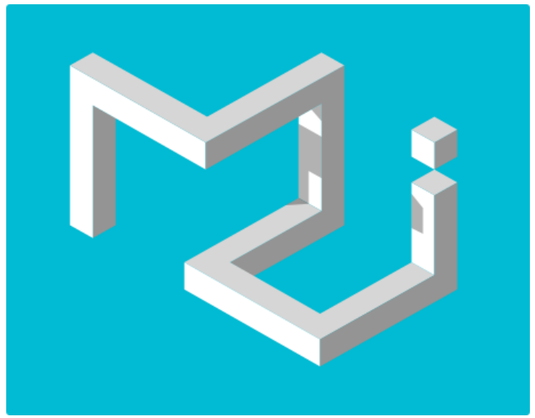
158 commits / 71,238 ++ / 64,750 --


petehunt/webpack-howto
GitHub, Inc. [US] https://github.com/petehunt/webpack-howto
This repository Search
Pull requests Issues Gist
petehunt / webpack-howto
Watch 134
Unstar 3,343
Fork 189
26 commits
1 branch
0 releases
9 contributors
Branch: master
webpack-howto / +
Merge pull request #43 from everdimension/update-example
petehunt authored on Sep 6
latest commit 0d29963d64
example
use stable dependencies for react and react-router
a month ago
README.md
=BG= `jsx?harmony` --> `babel-loader`
3 months ago
README.md
webpack-howto
Goal of this guide
This is a cookbook of how to get things done with webpack. This includes most things we use at Instagram and nothing we don't use.
Code
Issues 10
Pull requests 12
Wiki
Pulse
Graphs
HTTPS clone URL
https://github.com
You can clone with HTTPS, SSH, or Subversion.
Clone in Desktop
Download ZIP

Slack
Reactiflux
hendrikswan
CHANNELS
alt
general
isomorphic
needhelp
random
redux
+151 More...
DIRECT MESSAGES
slackbot
andrewimm
benigeri
cartman07
danharper
indexzero
lucksy
mbrochh
nibblebot
tmayr
zfogg
+7734 More...
PRIVATE GROUPS
New private group...
#needhelp
6979
in:#isomorphic
Today
Browse Channels
New Channel
webpack
Channel Name & Membership
#webpack
883
Created by ericclemmons on March 9th, 2015
React <3s webpack, so we do too!
#react-native-webpack
23
Created by elliottsj on September 17th, 2015
A place to discuss https://github.com/mjohnston/react-native-webpack-server
About channels...
View archived channels...
Search Results
Recent
Relevant
Messages (0)
Files (0)
No messages found matching:
in:#isomorphic.
Some older messages may not be shown because your team has over 10,000 messages.
Learn more
propTypes
'use strict';
import {
const globalProps = [{
viewport: {
base: {
mobile: PropTypes.bool,
tablet: PropTypes.bool
},
init: {
mobile: false,
tablet: false
}
}
}];
export default globalProps;

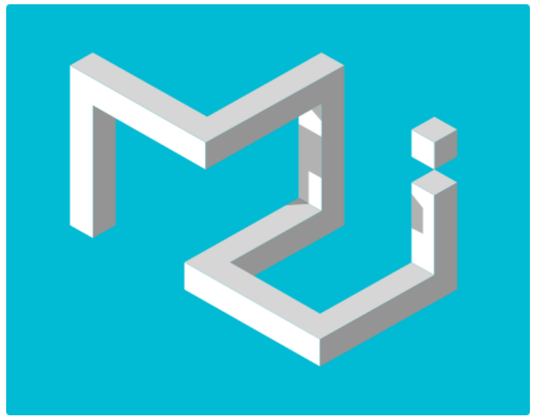

Slack
Reactiflux
hendrikswan
CHANNELS
alt
general
isomorphic
needhelp
random
redux
+151 More...
DIRECT MESSAGES
slackbot
andrewimm
benigeri
cartman07
danharper
indexzero
lucksy
mbrochh
nibblebot
tmayr
zfogg
+7734 More...
PRIVATE GROUPS
New private group...
#needhelp
6979
in:#isomorphic
Today
Browse Channels
New Channel
browserify
Channel Name & Membership
No matches found for browserify.
About channels...
View archived channels...
Search Results
Recent
Relevant
Messages (0)
Files (0)
No messages found matching:
in:#isomorphic.
Some older messages may not be shown because your team has over 10,000 messages.
Learn more
propTypes
'use strict';
import { PropTypes } from 'react';
const globalProps = [{
viewport: {
base: {
mobile: PropTypes.bool,
tablet: PropTypes.bool
},
init: {
mobile: false,
tablet: false
}
}
}];
export default globalProps;

Material Design



"A Set of React Components that Implement Google's Material Design" - material-ui.com

Material Design



10,984 stars on github!

callemall/material-ui

Hendrik

GitHub, Inc. [US] https://github.com/callemall/material-ui

This repository Search

Pull requests Issues Gist

callemall / material-ui

Watch 54 Star 10,984 Fork 1,697

React Components that Implement Google's Material Design. http://material-ui.com

2,406 commits 3 branches 34 releases 187 contributors

Branch: master material-ui / +

Merge pull request #1841 from shaurya947/theme-decorator-props-fix ...

shaurya947 authored 4 days ago latest commit 2b6c3f7b66

docs	V0.12.3 release	5 days ago
examples	Add babel runtime to enable ES6 polyfills	13 days ago
icon-builder	[SvgIcons] Added PureRenderMixin to svg icons	3 months ago
src	ThemeDecorator now supports props	4 days ago
test	Put all the tests for the previous month butotn into it own describe …	6 days ago
.editorconfig	Editorconfig change tabs to spaces	10 months ago
.eslintignore	[eslint] add a gulp task and continue linting	3 months ago
.eslintrc	[eslint] Move .eslintr to YAML	17 days ago
.gitattributes	Add gitattributes	10 months ago
.gitignore	Start of unit test framework	2 months ago

Code

Issues 427

Pull requests 65

Wiki

Pulse

Graphs

HTTPS clone URL

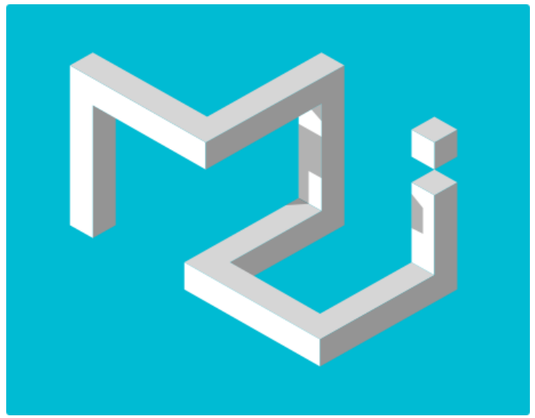
https://github.com

You can clone with HTTPS, SSH, or Subversion.

Clone in Desktop

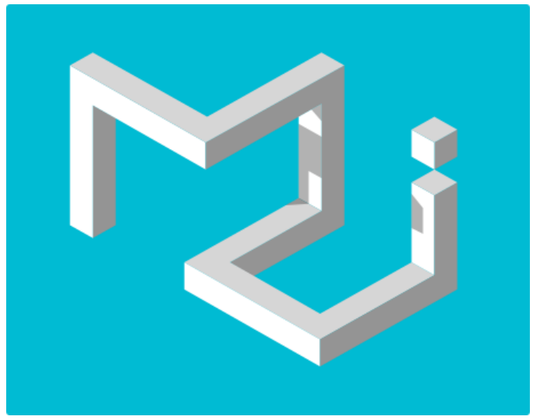
Download ZIP

Material Design



22 Components with loads of configuration options

Material Design



Theming

Realtime Data

Backend in the cloud - firebase.com

Realtime Data

Acquired by Google

Realtime Data

Extremely easy to consume

Realtime Data

Excellent documentation

Flux

Alt

A user friendly implementation of the Flux architecture - alt.js.org

Flux

Alt

2,138 stars on github

Flux

Alt

Convention over… boilerplate

Flux

Alt

Liberal use of ES7 decorators

Routing

Most popular router out there

Routing

Integrating with Flux/Alt

Recap

- Builds/Packaging with Webpack
  - Replaces gulp/grunt
  - Packages everything
  - Gives us ES7
- Material design with Material-UI
- Backend with Firebase
  - Realtime backend in the cloud
  - Supports Authentication
- Flux with Alt
  - Less boilerplate
  - Elegance through ES7 decorators
- Routing with React-Router
  - Specifically in a React/Alt environment