# Building Open Source Communities: Lessons Learned

Christine Abernathy
@abernathyca

# Why does Facebook open source?

# Why does Facebook open source?

It’s good for the company

Why does Facebook open source?

It’s good for the company

**Accelerates innovation**

Why does Facebook open source?

It’s good for the company

**Accelerates innovation**

**We write better software**

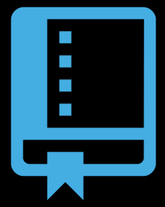
Why does Facebook open source?

It's good for the company

**Accelerates innovation**

**We write better software**

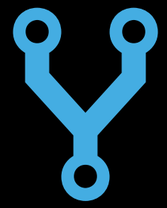
**We share our challenges**



# 349 repos

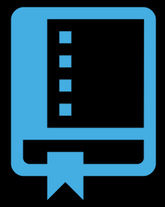
Facebook
Open Source

349 repos

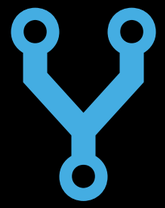


65k forks

Facebook
Open Source



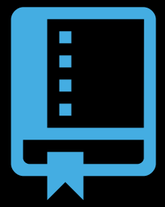
349 repos



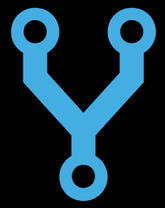
65k forks

141k commits

Facebook
Open Source



349 repos

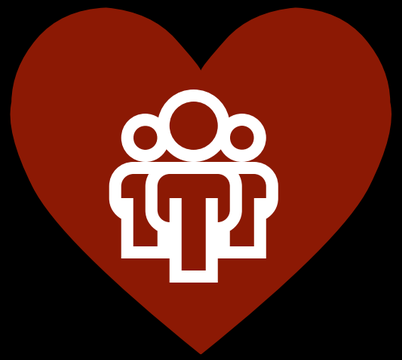


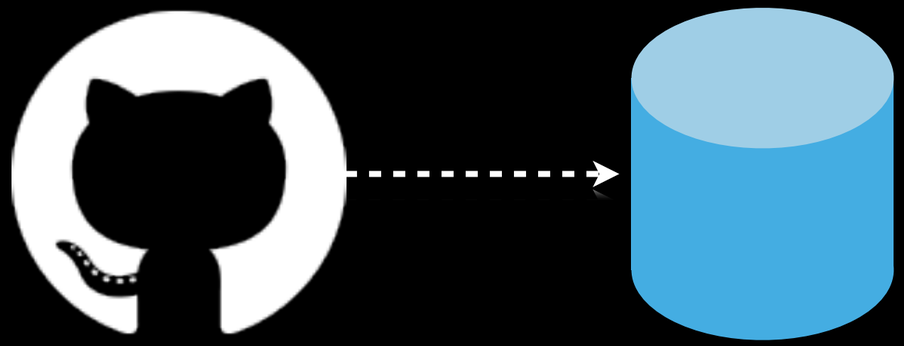
65k forks

141k commits

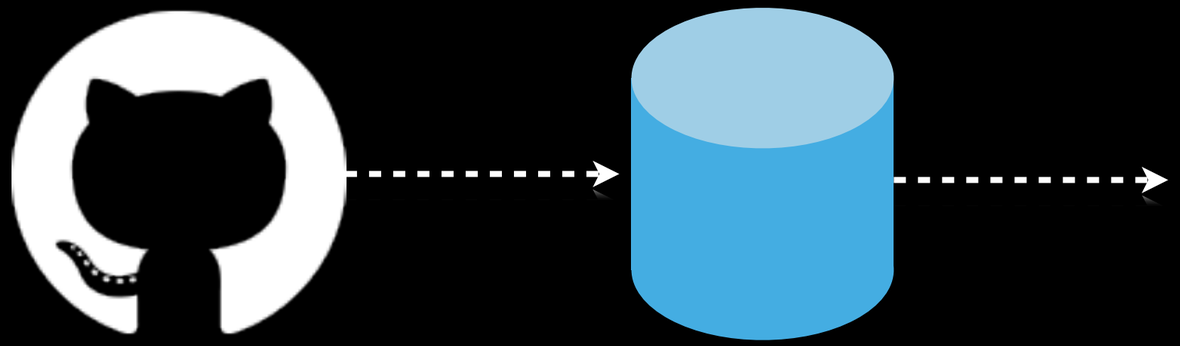
370k followers

Facebook
Open Source





forks
issues
commits
followers
pull requests



forks
issues
commits
followers
pull requests

**react**
3701 forks · 25237 stars · 4908 commits · 587 open issues
A declarative, efficient, and flexible JavaScript library for building user interfaces.

**react-native**
2010 forks · 15953 stars · 2598 commits · 418 open issues
A framework for building native apps with React.

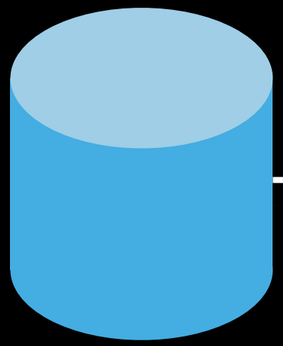
**hhvm**
2191 forks · 12237 stars · 15974 commits · 909 open issues
A virtual machine designed for executing programs written in Hack and PHP.

**AsyncDisplayKit**
666 forks · 5321 stars · 631 commits · 87 open issues
Smooth asynchronous user interfaces for iOS apps.

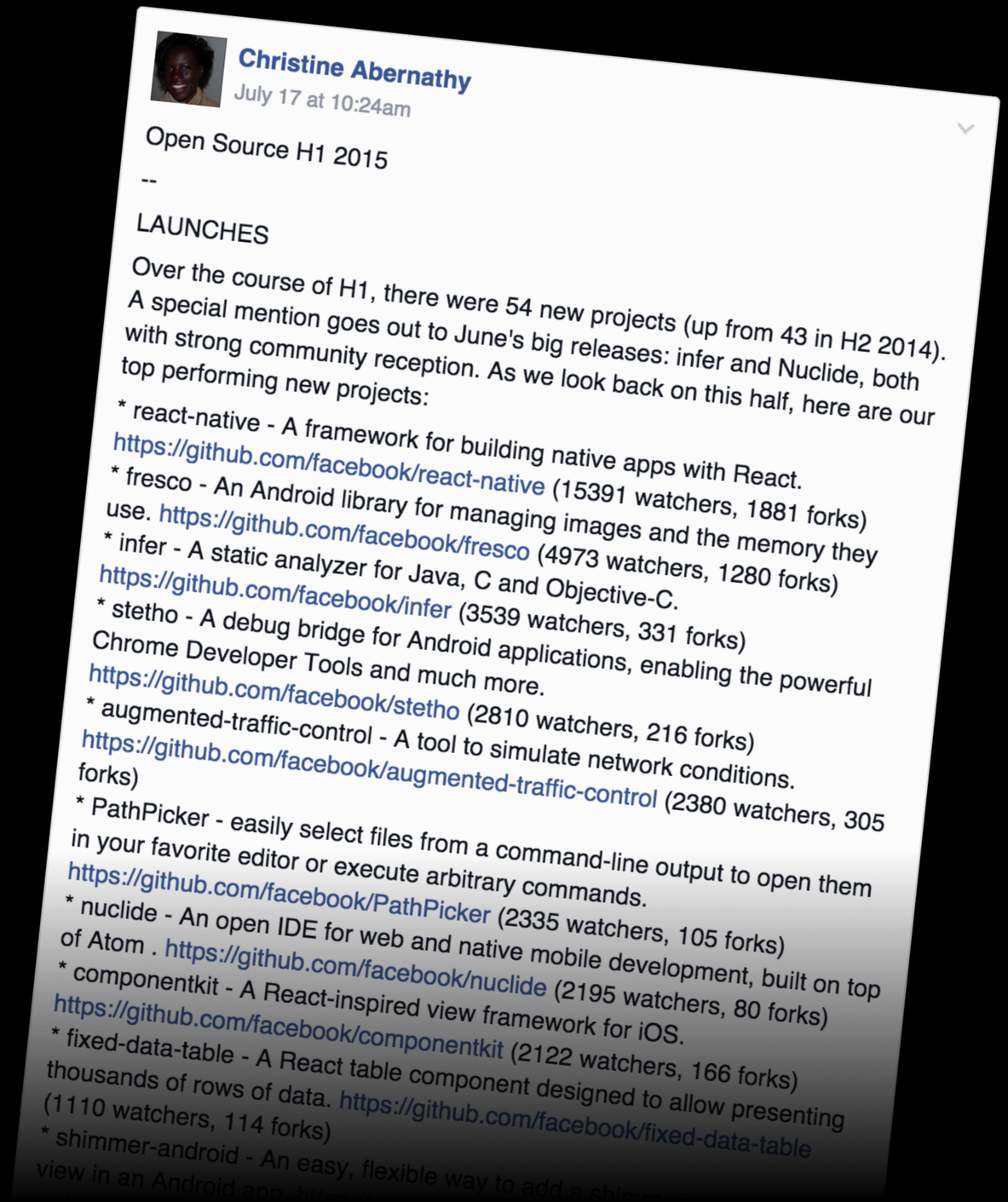
**presto**
915 forks · 3642 stars · 5422 commits · 309 open issues
Distributed SQL query engine for running interactive analytic queries against big data

**nuclide**
96 forks · 2448 stars · 658 commits · 55 open issues
An open IDE for web and native mobile development, built on top of Atom

pop



forks
issues
commits
followers
pull requests



**Christine Abernathy**
July 17 at 10:24am

Open Source H1 2015
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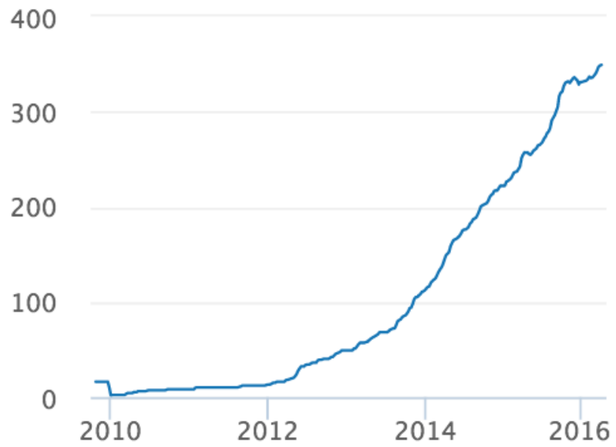
LAUNCHES

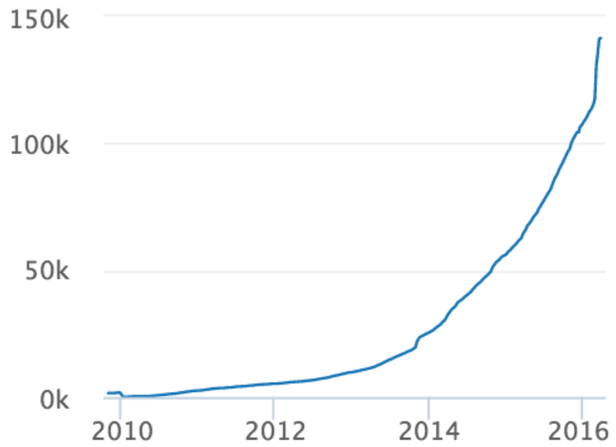
Over the course of H1, there were 54 new projects (up from 43 in H2 2014). A special mention goes out to June's big releases: infer and Nuclide, both with strong community reception. As we look back on this half, here are our top performing new projects:

* react-native - A framework for building native apps with React. https://github.com/facebook/react-native (15391 watchers, 1881 forks)
* fresco - An Android library for managing images and the memory they use. https://github.com/facebook/fresco (4973 watchers, 1280 forks)
* infer - A static analyzer for Java, C and Objective-C. https://github.com/facebook/infer (3539 watchers, 331 forks)
* stetho - A debug bridge for Android applications, enabling the powerful Chrome Developer Tools and much more. https://github.com/facebook/stetho (2810 watchers, 216 forks)
* augmented-traffic-control - A tool to simulate network conditions. https://github.com/facebook/augmented-traffic-control (2380 watchers, 305 forks)
* PathPicker - easily select files from a command-line output to open them in your favorite editor or execute arbitrary commands. https://github.com/facebook/PathPicker (2335 watchers, 105 forks)
* nuclide - An open IDE for web and native mobile development, built on top of Atom . https://github.com/facebook/nuclide (2195 watchers, 80 forks)
* componentkit - A React-inspired view framework for iOS. https://github.com/facebook/componentkit (2122 watchers, 166 forks)
* fixed-data-table - A React table component designed to allow presenting thousands of rows of data. https://github.com/facebook/fixed-data-table (1110 watchers, 114 forks)
* shimmer-android - An easy, flexible way to add a shi
view in an Android app. ht

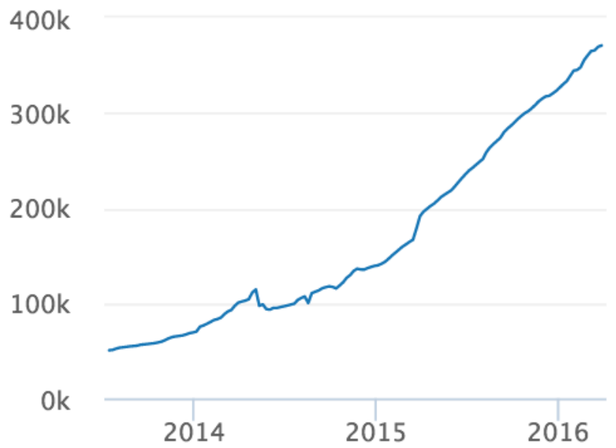
## Total GitHub repos (349)



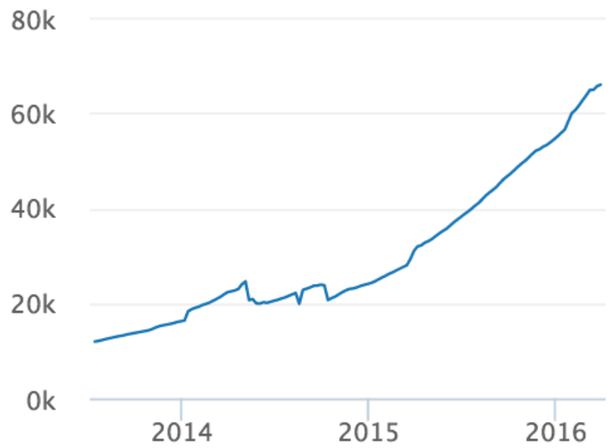

## Total GitHub commits (141K)




## Total GitHub watchers (370K)




## Total GitHub forks (65K)



# GitHub Repo ▸ flow - summary

Summary

## Basic info

On Github flow
Homepage http://flowtype.org/
Description Adds static typing to JavaScript to improve developer productivity and code quality.

Owner Jeff Morrison
Oncall
Team
GitHub teams

Heroes Recent · All time
Elsewhere RSS · Twitter · Hashtag · Stack Overflow · IRC

Tags web · infra · language · languages · javascript
Language OCaml
Size 125983
Watchers 5550
Forks 318
Issues 294
Non-PR Issues 290
Pull requests 5
Commits 1444

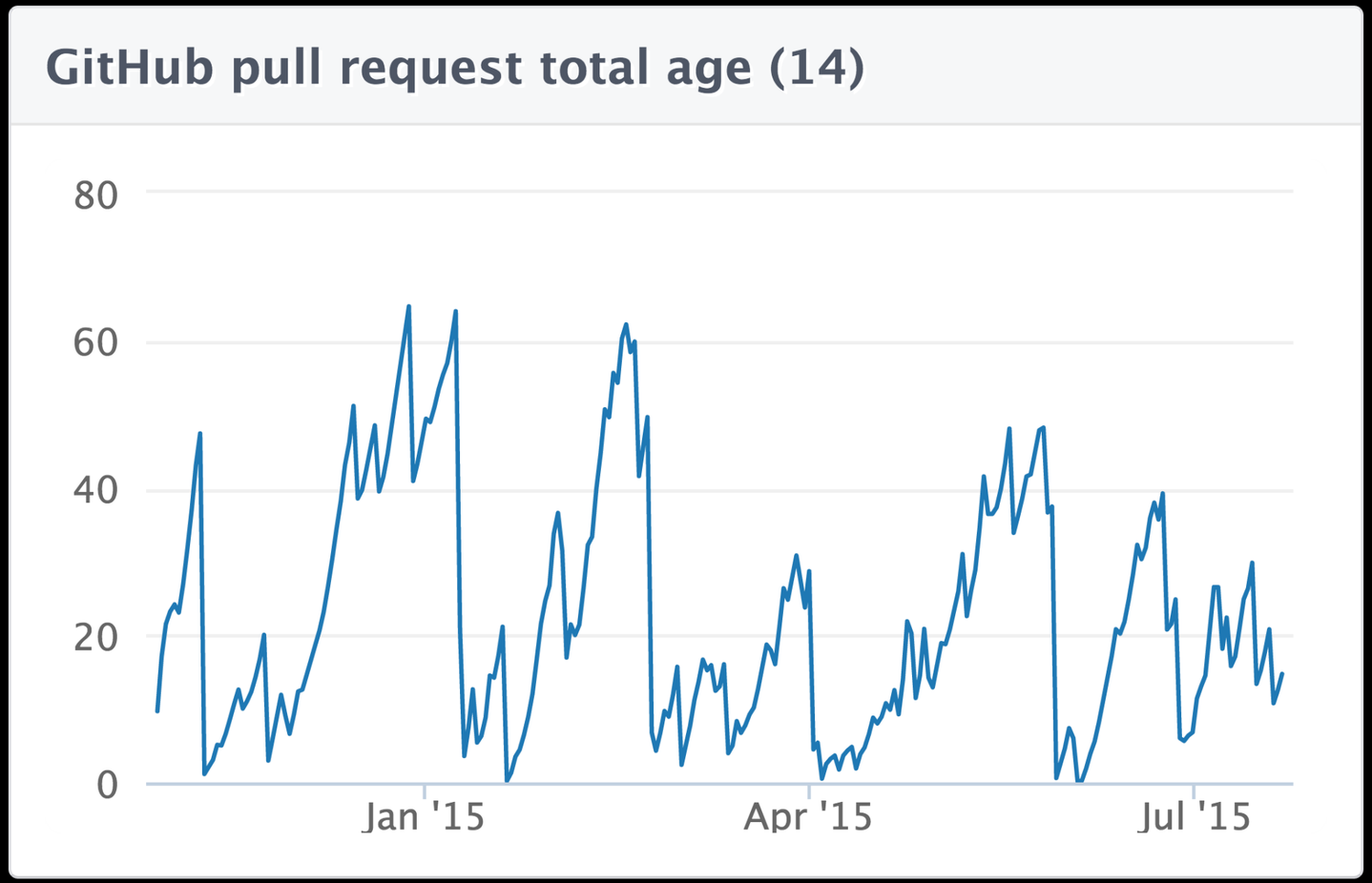
Created 2014-10-28
Public 2014-11-18
Updated 2015-10-16
Pushed 2015-10-16

## All 5 open pull requests

| CLA | # | Contributor | Author | Name | Created | Updated | Task | Lint | Phab (Int) |
|---|---|---|---|---|---|---|---|---|---|
| ✓ | 903 | Marshall Roch | mroch | Make flow opt-out by default, ... | 2015-10-05 | 2015-10-09 | #8619920 | | Diff |
| ✓ | 878 | Sam Goldman | samwgoldman | Generator improvements: workin... | 2015-09-30 | 2015-09-30 | #8553439 | OK | Import |
| ✓ | 872 | Sam Goldman | samwgoldman | Default param values can refer... | 2015-09-29 | 2015-10-02 | #8542217 | OK | Import |
| ✗ | 861 | Christian Legnitto | LegNeato | Create `esproposal.class_prope... | 2015-09-25 | 2015-10-13 | #8505977 | OK | Import |
| ✓ | 760 | Gregoire Henry | OCamlPro-Henry | Restore state on slave after ... | 2015-08-28 | 2015-09-22 | #8172464 | | Review 1 Update |

## 20 most recent open non-pull-request issues

| # | Contributor | Author | Name | Labels | Comments | Last Commenter | Created | Updated | Task |
|---|---|---|---|---|---|---|---|---|---|
| 947 | Sam Goldman | samwgoldman | Singleton-typed object propert... | | | | 2015-10-15 | 2015-10-15 | #8732003 |
| 946 | Dan Vanderkam | danvk | Functions should not match `{[... | | 1 | danvk | 2015-10-15 | 2015-10-15 | #8731236 |
| 945 | Evan Huus | eapache | Flow doesn't recognize platfor... | | | | 2015-10-14 | 2015-10-14 | #8722416 |
| 942 | | deian | Using type name `Class` introd... | | 2 | gabelevi | 2015-10-13 | 2015-10-15 | #8722320 |
| 940 | Ludovico Fischer | ludovicofischer | Support additional export-from... | | 3 | samwgoldman | 2015-10-13 | 2015-10-13 | #8722490 |
| 939 | Irakli Gozalishvili | Gozala | flow does not seem to support ... | | 1 | samwgoldman | 2015-10-12 | 2015-10-12 | #8722471 |
| 938 | Irakli Gozalishvili | Gozala | Allow importing types from flo... | | 13 | Gozala | 2015-10-12 | 2015-10-13 | #8722479 |
| 937 | Irakli Gozalishvili | Gozala | Fatal error: exception End_of_... | | 8 | samwgoldman | 2015-10-12 | 2015-10-15 | #8722480 |
| 935 | Cheng Lou | chenglou | Type of object value not infer... | | 3 | samwgoldman | 2015-10-10 | 2015-10-10 | #8678603 |
| 932 | Irakli Gozalishvili | Gozala | Support flow.base property for... | | 1 | Gozala | 2015-10-09 | 2015-10-09 | #8674649 |
| 928 | Irakli Gozalishvili | Gozala | flow is confused when function... | | | | 2015-10-09 | 2015-10-09 | #8673880 |
| 927 | Irakli Gozalishvili | Gozala | Parametrizing function invocat... | | 1 | samwgoldman | 2015-10-09 | 2015-10-09 | #8673270 |

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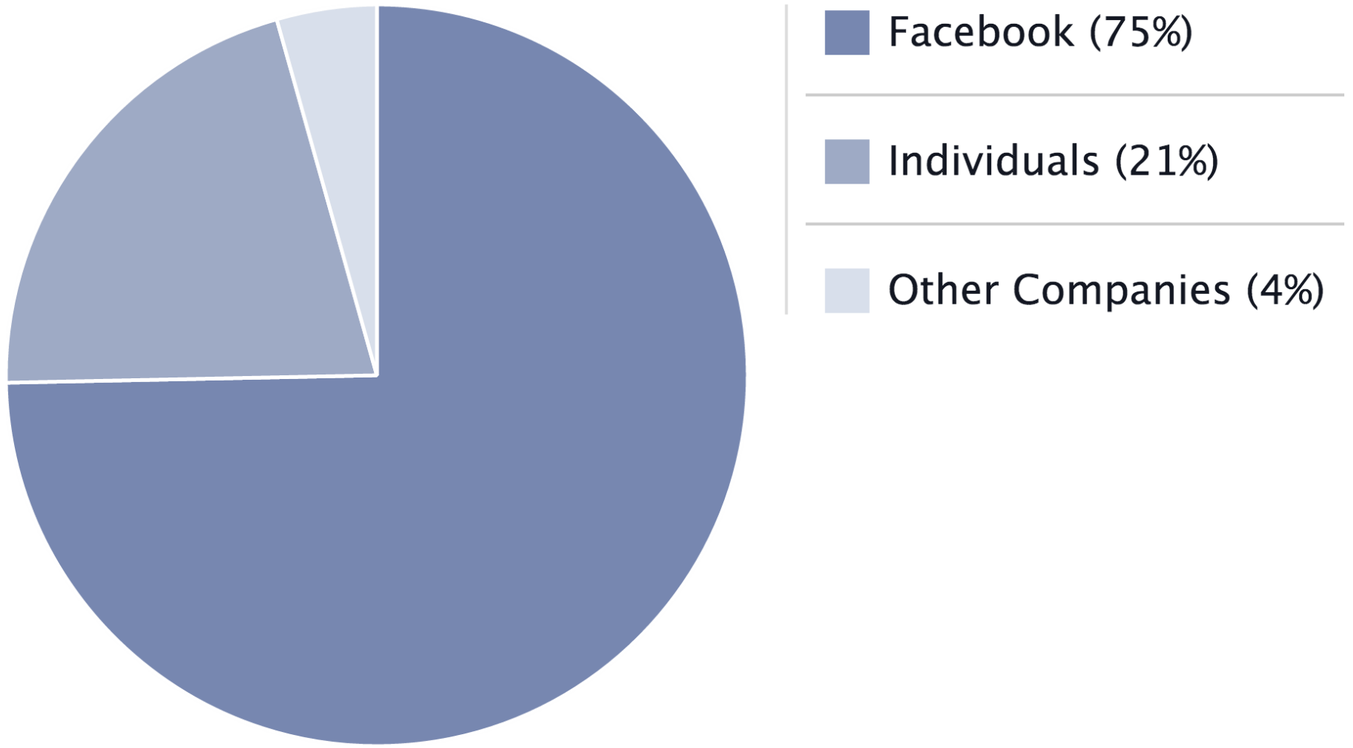
## GitHub commits this week




Facebook
Open Source

| CLA | # | Contributor | Name | Task | Lint | Phabricator |
|---|---|---|---|---|---|---|
| ✓ | 136 | Edvin Erikson | **Added alt-click functionality ...** | #7631449 | OK | Import |
| ✓ | 132 | Keno Fischer | **Fix nuclide-start-server certi...** | #7620837 | OK | Diff |
| ✓ | 117 | Massimiliano Torromeo | **Restore behavior of python<2.7...** | #7567943 | OK | Import |
| ✓ | 94 | Massimiliano Torromeo | **Use mv instead of fs.rename so...** | #7510471 | OK | Diff |
| ✓ | 64 | Dan Miller | **Enable Nuclide Server to liste...** | #7451676 | | Diff |
| ✓ | 61 | Denny Trebbin | **Added update section** | #7396893 | | Import |

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# Open Source Heroes for react-native

## Configure

Repo [?] react-native

Contributors [?] external

Start [?] 5/1/2015

End [?] End of period

Update

## External react-native contributors from 1st May 15

| # | Name | Org | Commits |
|---|---|---|---|
| 1 | Brent Vatne | | 49 |
| 2 | Joe Stanton | | 10 |
| 3 | Zhao Han | | 6 |
| 4 | Christopher Dro | | 4 |
| 5 | Joshua Sierles | | 4 |
| 6 | Dave Sibiski | | 3 |
| 7 | John Days | | 3 |
| 8 | Nick Hudkins | | 3 |
| 9 | प्रथमेश | | 3 |
| 10 | akrell | | 2 |

January

## Facebook Open Source Summit

Thursday, January 28, 2016 at 2 PM

Christopher Chedeau and 313 other guests

Facebook
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# Presto

## Distributed SQL query engine for big data

#1

Facebook
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# Presto

## Distributed SQL query engine for big data

`4.6K followers - 1.3K forks - 7K commits - 122 contributors`

#1

Facebook
Open Source

# Presto

## Distributed SQL query engine for big data

`4.6K followers - 1.3K forks - 7K commits - 122 contributors`

#1

NETFLIX

airbnb

GREE

JD.京东 .COM

Facebook
Open Source

# Presto

## Distributed SQL query engine for big data

4.6K followers - 1.3K forks - 7K commits - 122 contributors

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NETFLIX

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TERADATA

Facebook Open Source

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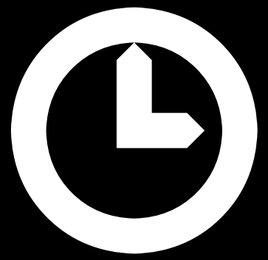
## Distributed SQL query engine for big data

#1



Impress Me

Facebook
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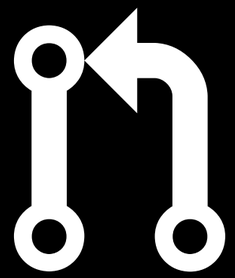
# Presto

## Distributed SQL query engine for big data

#1



Guide Me

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# Presto

## Distributed SQL query engine for big data

#1

change array, map and row type encoding #2240

Closed **miniway** wants to merge 2 commits into `prestodb:master` from `treasure-data:array_map_encoding`

**cberner** commented on Jan 26, 2015 — Presto member

I wrote a quick benchmark (#2274) and tried your PR. It makes the benchmark more than 2x faster 👍

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# Presto

## Distributed SQL query engine for big data

#1

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# Presto

## Distributed SQL query engine for big data

- Releases should just work

#1

Facebook
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# Presto

## Distributed SQL query engine for big data

- Releases should just work
- Design software to eliminate common bugs

#1

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# Presto

## Distributed SQL query engine for big data

#1

- Releases should just work
- Design software to eliminate common bugs
- Use the same tools as your community

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# Presto

## Distributed SQL query engine for big data

#1

- Releases should just work
- Design software to eliminate common bugs
- Use the same tools as your community
- Keep people informed about pull requests

Facebook
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# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

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# osquery

## SQL powered OS instrumentation, monitoring & analytics

`5.9K followers - 592 forks - 2.9K commits - 83 contributors`

#2

Facebook
Open Source

# osquery

## SQL powered OS instrumentation, monitoring & analytics

5.9K followers - 592 forks - 2.9K commits - 83 contributors

#2

## Part of a family of Facebook security tools

Facebook
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# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

`commit 73a32b`

"Initial commit"

June 30, 2014

Release day!

Oct 28, 2014

First massive external-contributor feature

Apr 1, 2015

5000 followers

Sep 7, 2015

today!

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# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

How do we have **5.9K** followers on Github with only 83 contributors?

*“ is this expected? ”*

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# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

- acpi_tables
- arp_cache
- crontab
- file_events
- kernel_info
- listening_ports
- logged_in_users
- mounts
- pci_devices
- processes
- routes
- shell_history
- smbios_tables
- suid_bin
- system_controls
- usb_devices
- users
- groups
- rpm_packages
- apt_sources
- deb_packages
- homebrew_packages
- kernel_modules
- memory_map
- shared_memory
- browser_plugins
- startup_items

most developers and administrators know SQL

and will contribute more tables!?

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# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

We now measure engagement differently!

❤️ 🔑

**Private trusted** communities also contribute,
just not using pull requests on Github

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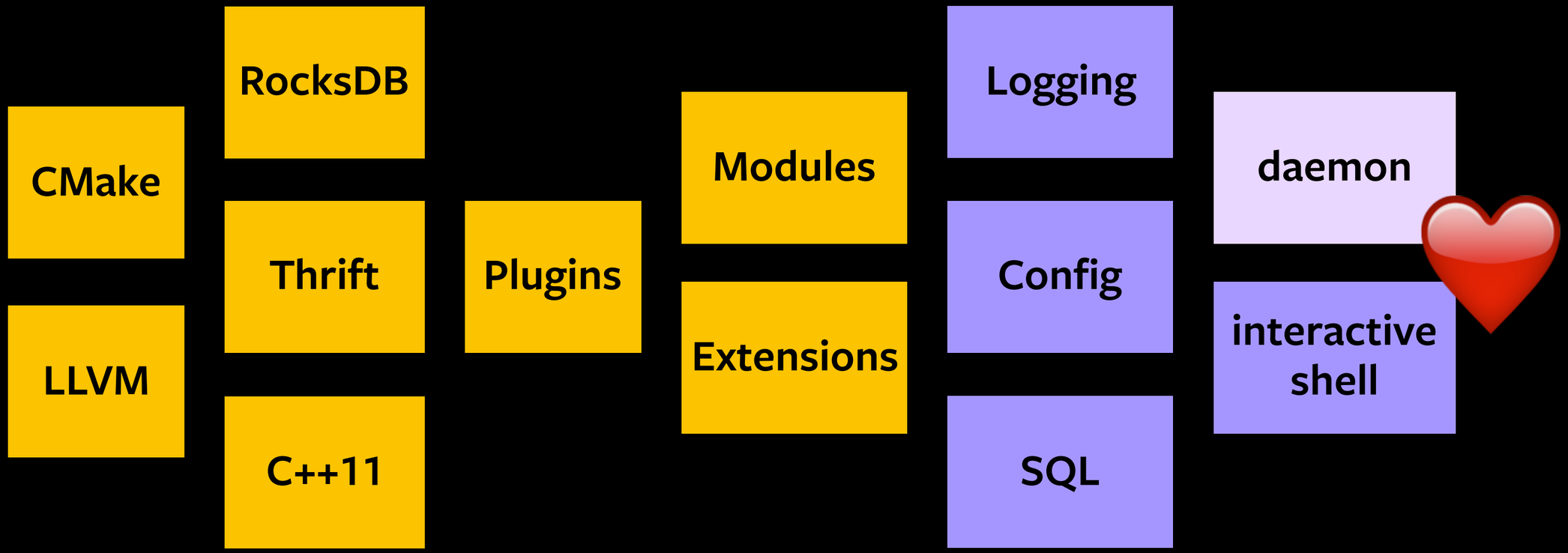
# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

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# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

It is OK to focus on a core
contributor community!

Create a NUX that encourages
collaboration and self guides!

*That may mean tooling to **encourage** forks* 🍴

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# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

Facebook
Open Source

# osquery

## SQL powered OS instrumentation, monitoring & analytics

- Analyze your community

#2

Facebook
Open Source

# osquery

## SQL powered OS instrumentation, monitoring & analytics

- Analyze your community
- Optimize for your community's needs

#2

Facebook
Open Source

# osquery

## SQL powered OS instrumentation, monitoring & analytics

- Analyze your community
- Optimize for your community's needs
- Create a great initial experience

#2

Facebook
Open Source

# osquery

## SQL powered OS instrumentation, monitoring & analytics

#2

- Analyze your community
- Optimize for your community's needs
- Create a great initial experience
- Take time to mentor new contributors

Facebook
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# Fresco

## Image loading library for Android

#3

Facebook
Open Source

# Fresco

## Image loading library for Android

`8.5K followers - 2.5K forks - 494 commits - 28 contributors`

#3

Facebook
Open Source

# Fresco

## Image loading library for Android

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#3

**REDFIN**

90% reduction
loading errors

Facebook
Open Source

# Fresco

## Image loading library for Android

`8.5K followers - 2.5K forks - 494 commits - 28 contributors`

#3

REDFIN

90% reduction
loading errors

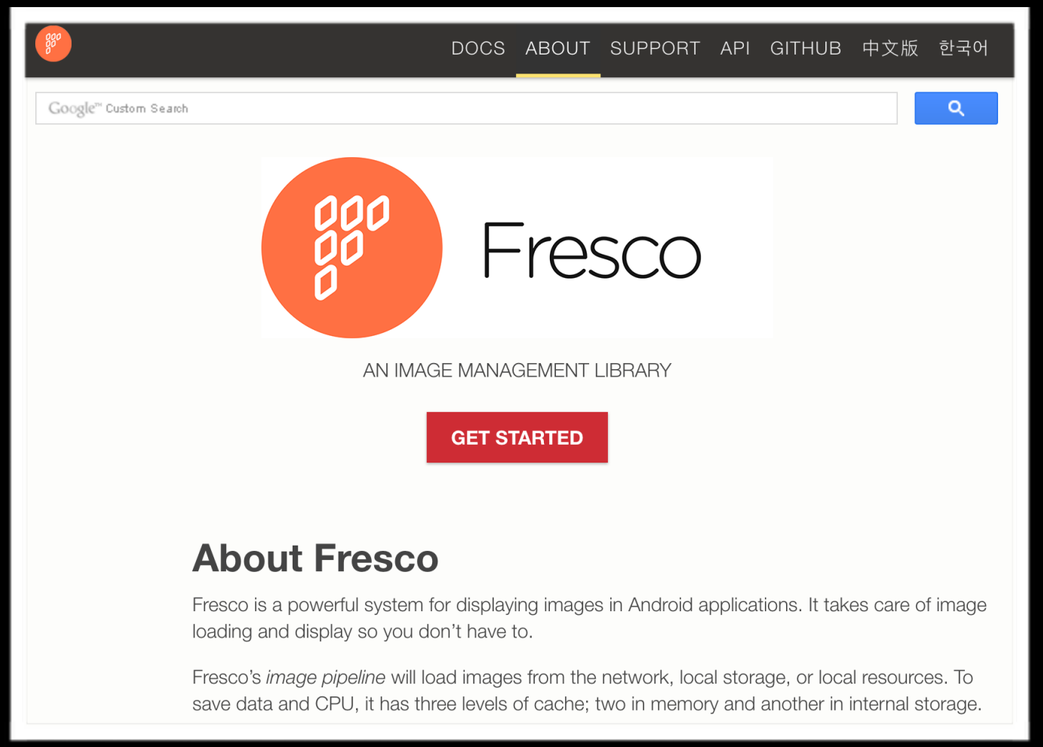
73% drop
failure rates

Facebook
Open Source

# Fresco

## Image loading library for Android

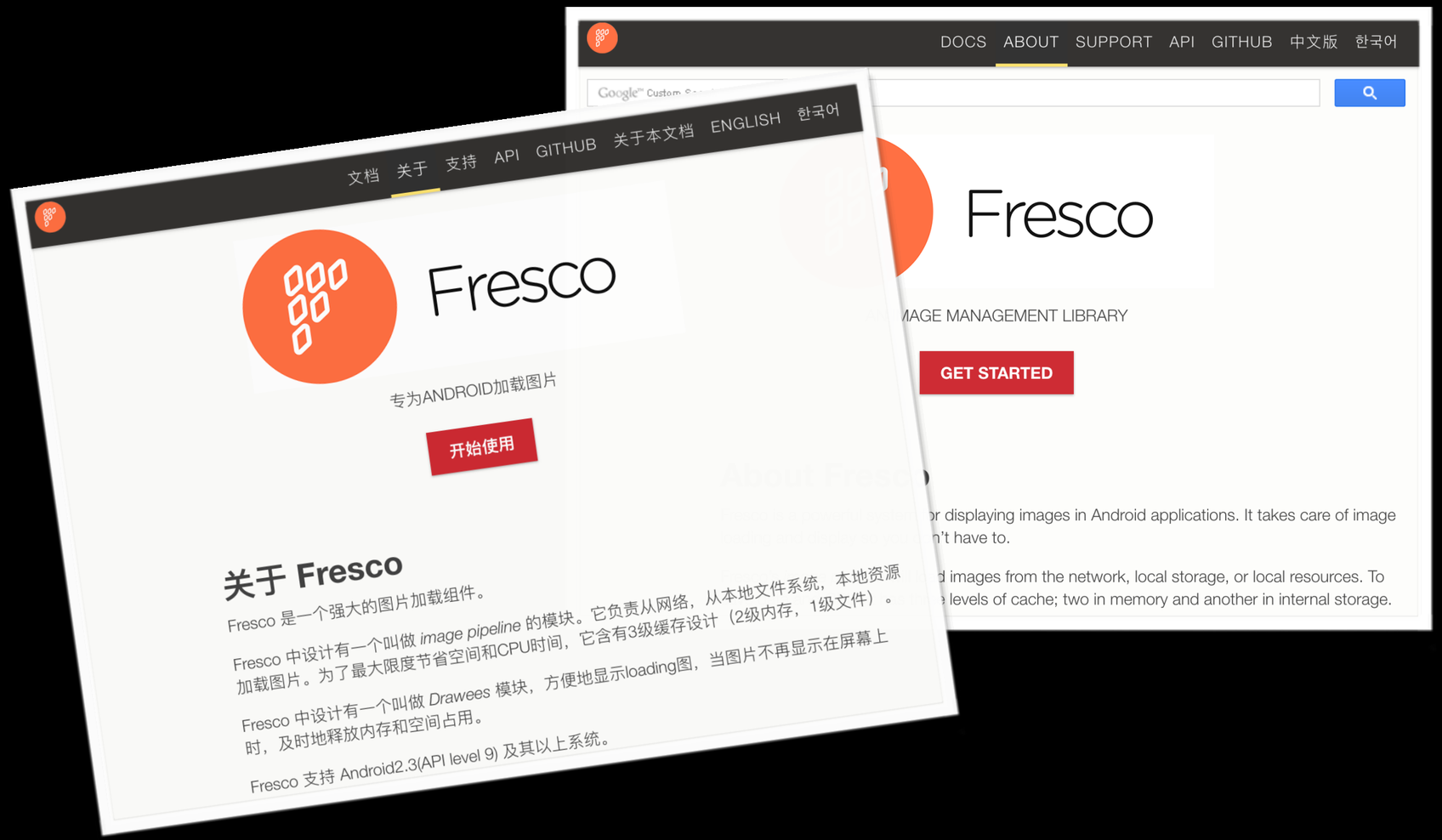
#3



# Fresco

## Image loading library for Android

#3



# Fresco

## Image loading library for Android

#3

# Fresco

## Image loading library for Android

#3

编译不通过 #36

Closed **appledong** opened this issue on Mar 30, 2015 · 15 comments

**appledong** commented on Mar 30, 2015

大家好：
我下载一份代码，在android studio中编译不通过，报的是下面错误，麻烦帮忙看一下，解决一下，谢谢！
错误代码：
Execution failed for task ‘：imagepipeline：ndk_build_gifimage',
>A problem occurred starting process ' command' ndk-build''

**kongnanlive** commented on Mar 30, 2015

建议你发问题先看看是否已经有类似问题了！去 issue #5找答案。

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# Fresco

## Image loading library for Android

#3

Facebook
Open Source

# Fresco

## Image loading library for Android

#3

ON CALL

BUG BASH

Facebook
Open Source

# Fresco

## Image loading library for Android

#3

GitHub

Facebook
Open Source

# Fresco

## Image loading library for Android

#3

GitHub → stack overflow

EXPERTS

Facebook
Open Source

# Fresco

## Image loading library for Android

#3

**QUICK START**

Adding Fresco to your Project
Getting started with Fresco
Concepts
Supported URIs

**DRAWEE GUIDE**

Using Drawees in XML
Using Drawees in Code
Drawee Branches
Progress Bars
Scaling
Rounded Corners and Circles

### Adding Fresco to your Project

Here's how to add Fresco to your Android project.

#### Android Studio or Gradle

Edit your `build.gradle` file. You must add the following line to the `de`

```
dependencies {
  // your app's other dependencies
  compile 'com.facebook.fresco:fresco:0.9.0+'
}
```

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Open Source

# Fresco

## Image loading library for Android

#3

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dependencies {
  // your app's other dependencies
  compile 'com.facebook.fresco:fresco:0.9.0+'
}
```

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# Fresco

## Image loading library for Android

#3

CONTRIBUTORS

*Why?*

Motivation - Goals - Design Decisions

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# Fresco

## Image loading library for Android

#3

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# Fresco

## Image loading library for Android

- Be prepared post-launch

#3

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# Fresco

## Image loading library for Android

- Be prepared post-launch
- Be prepared for translation

#3

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# Fresco

## Image loading library for Android

- Be prepared post-launch
- Be prepared for translation
- Build community experts

#3

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# Fresco

## Image loading library for Android

#3

- Be prepared post-launch
- Be prepared for translation
- Build community experts
- Build docs for users and contributors

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# React Native

## A framework for building native apps with React

#4

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# React Native

## A framework for building native apps with React

29K followers - 5.6K forks - 6.2K commits - 637 contributors

#4

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# React Native

## A framework for building native apps with React

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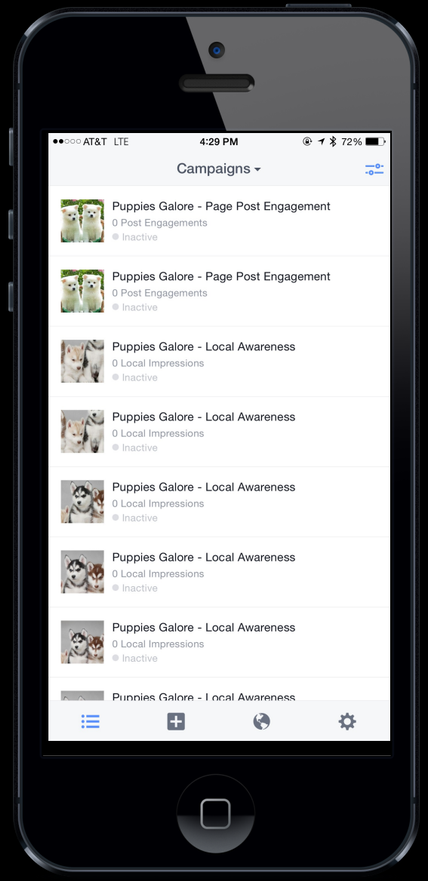


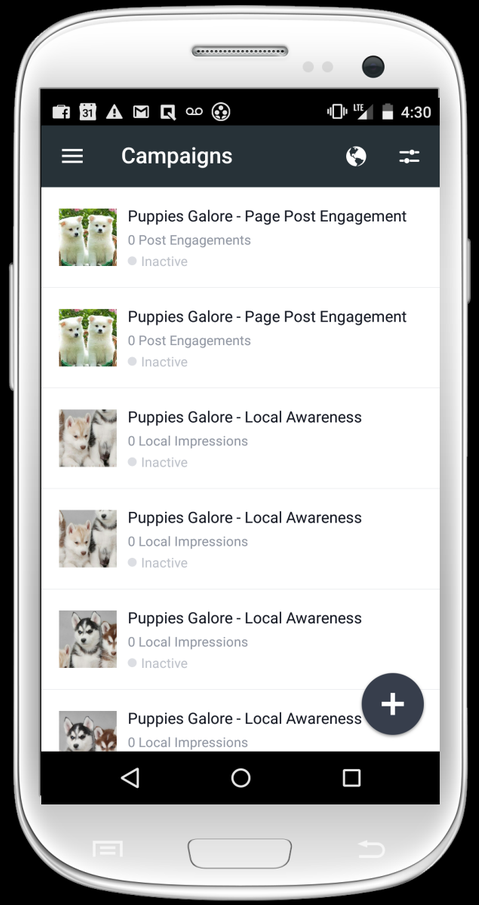

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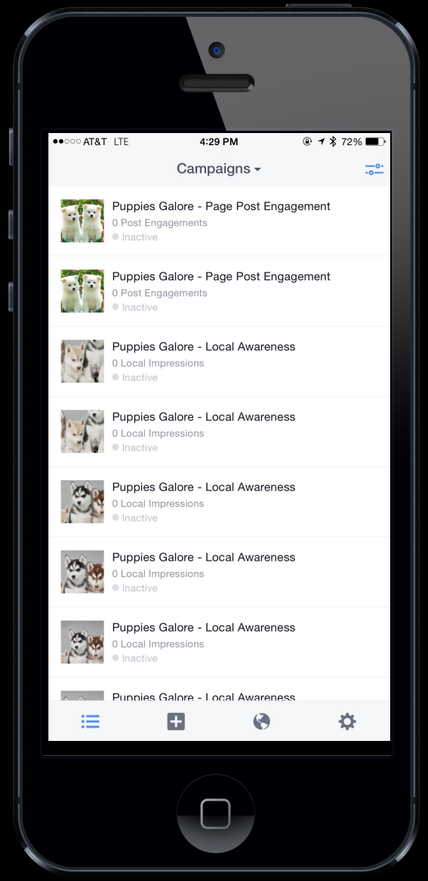
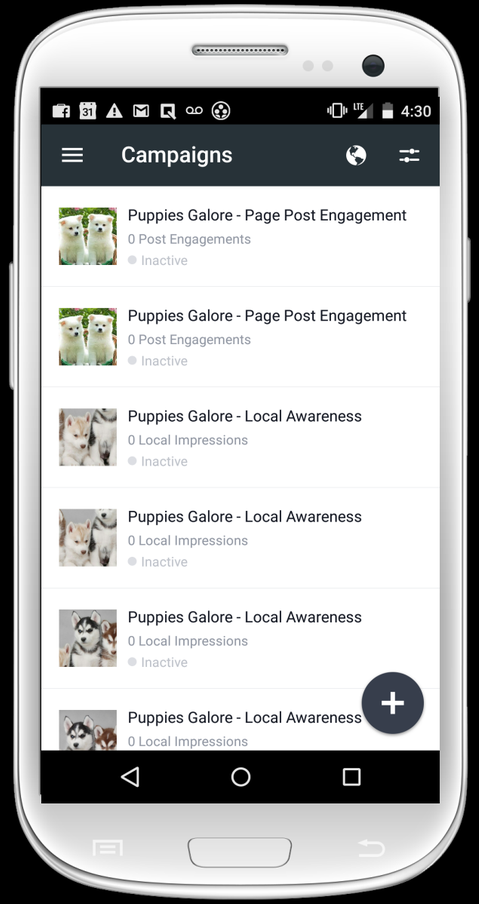



85%
code shared



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# React Native

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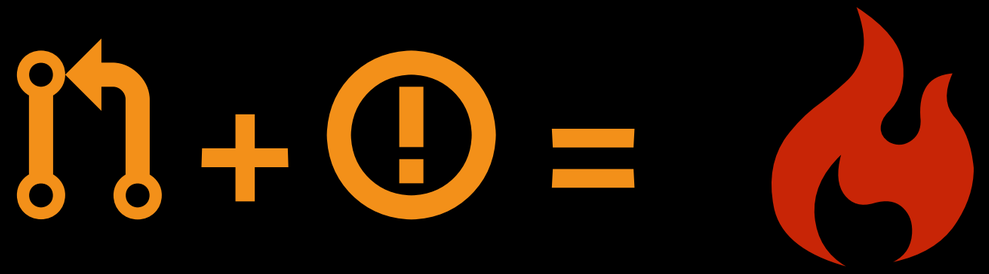

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# React Native

## A framework for building native apps with React

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# React Native

## A framework for building native apps with React

Community

#4

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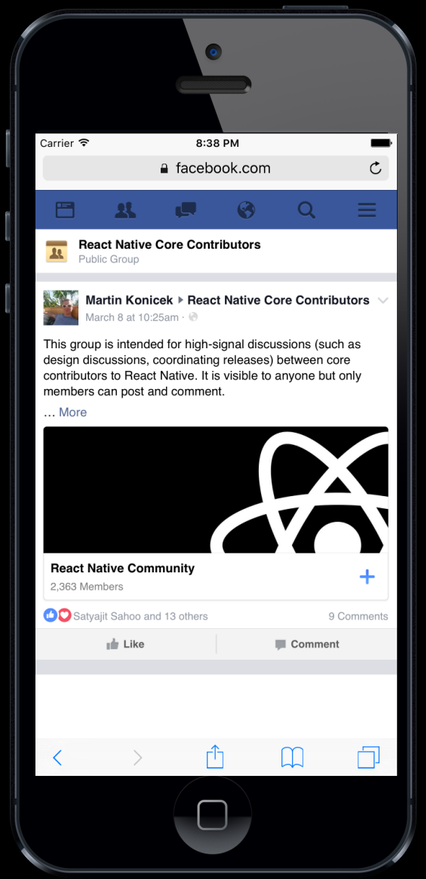
# React Native

## A framework for building native apps with React

#4



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# React Native

## A framework for building native apps with React

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Issue #31

React Native Newsletter

ASSORTED GOOD THINGS

### React.js Conf 2016 is done! (YouTube Playlist)

OK OK I know what you're thinking, this was *a while* ago. Yeah, well, it's also right now! And every moment in the future until the destruction of

### React Native Scheduling (A must-read!)

Andy Street (FB London) summarizes internal discussions exploring how to make react native apps performant by default. Not only will it give you clear

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# React Native

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Community

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Community

Tooling

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# React Native

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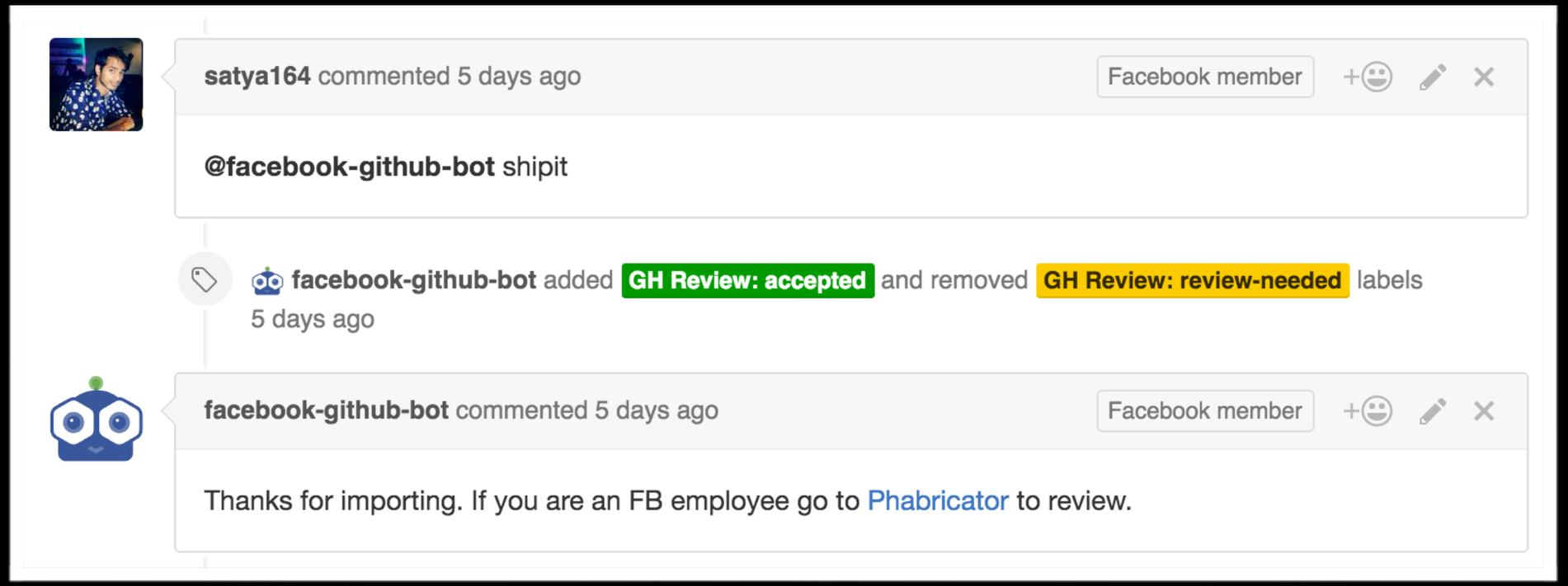

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# React Native

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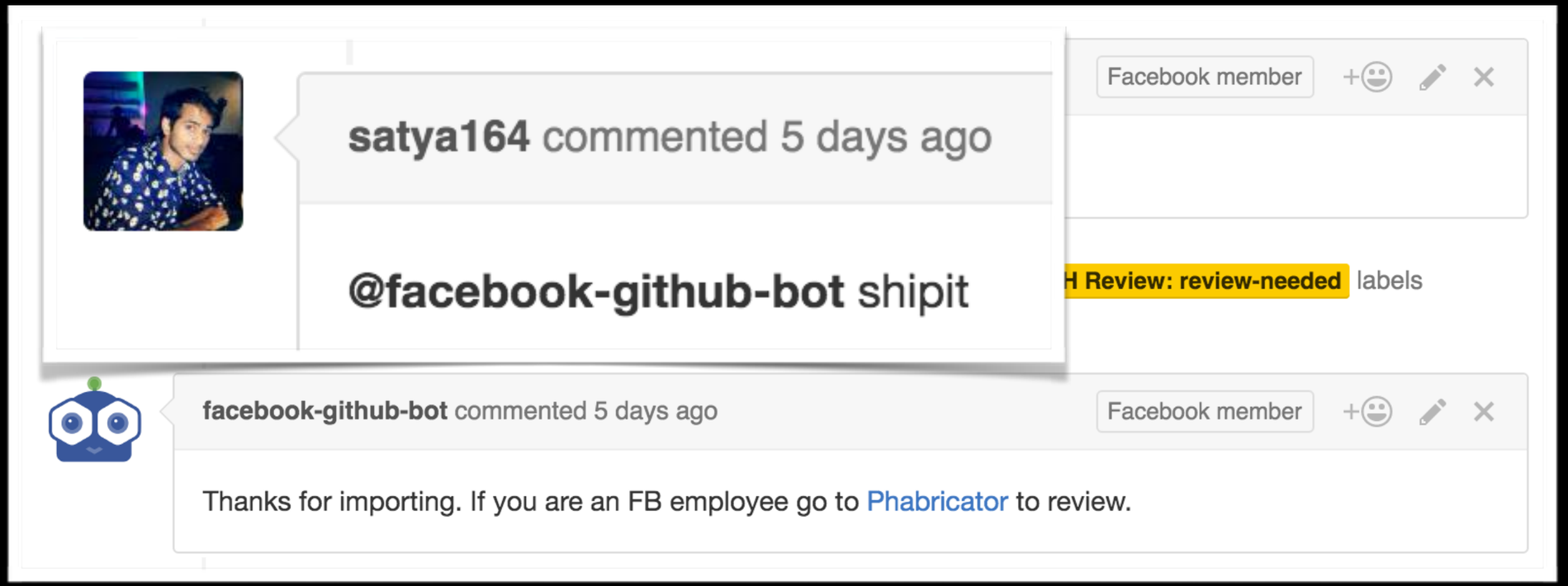

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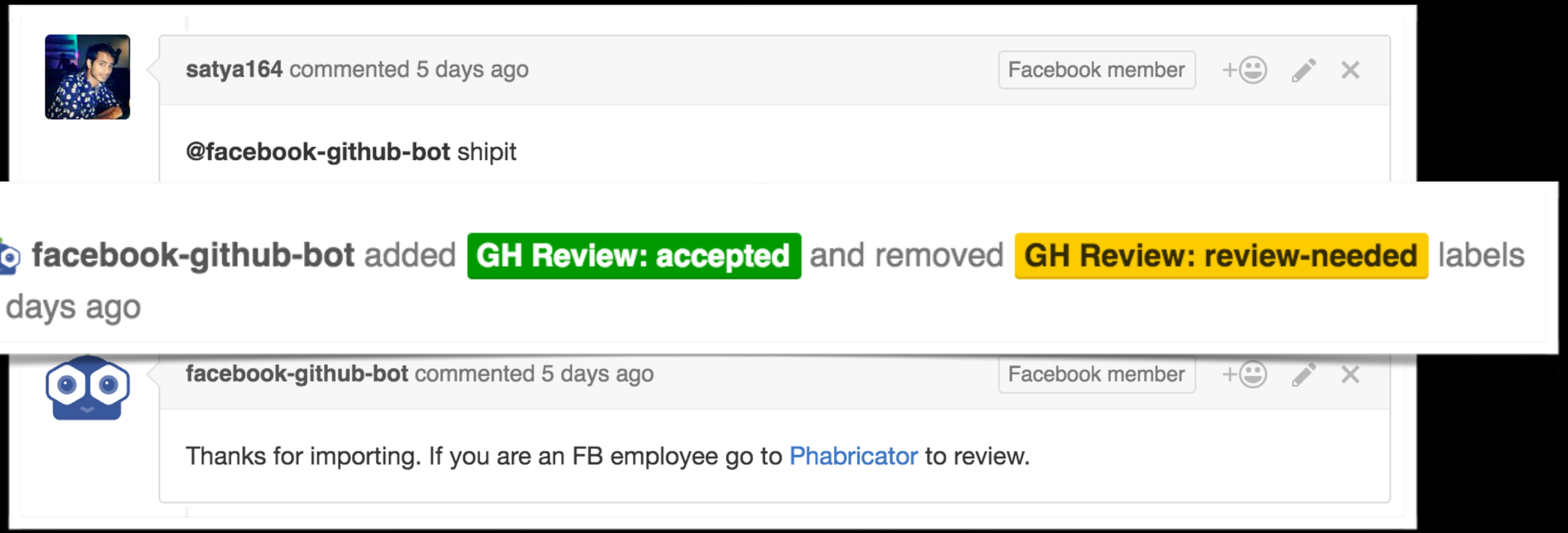

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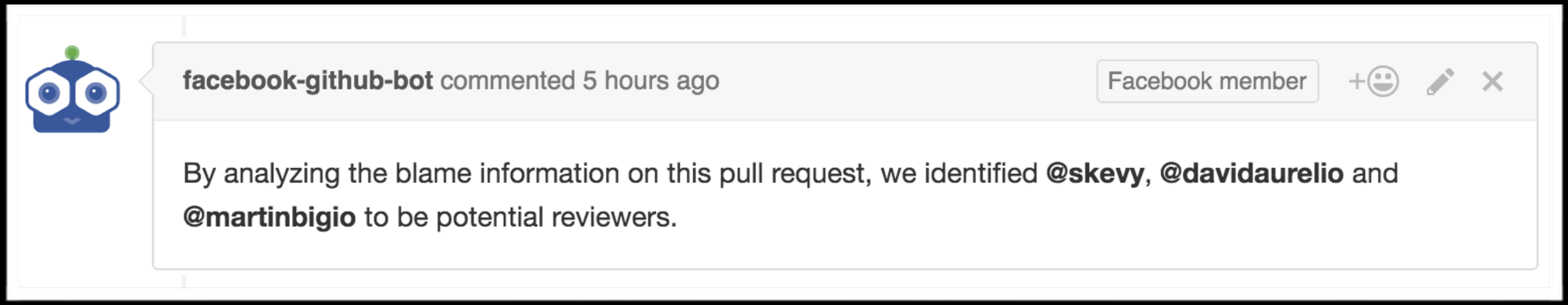


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# React Native

## A framework for building native apps with React

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**facebook-github-bot-1** commented 4 days ago — Facebook member

**@adrienthiery** do you have any updates for this pull request? It's been a while so we wanted to check in and see if you've looked at the requested changes.

**facebook-github-bot-4** commented a day ago — Facebook member

**@mkonicek** would you mind taking a look at this pull request? It's been a while since the last commit was reviewed.

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# React Native

## A framework for building native apps with React

#4

Community

Tooling

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# React Native

## A framework for building native apps with React

#4

Community

Tooling

Communication

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# React Native

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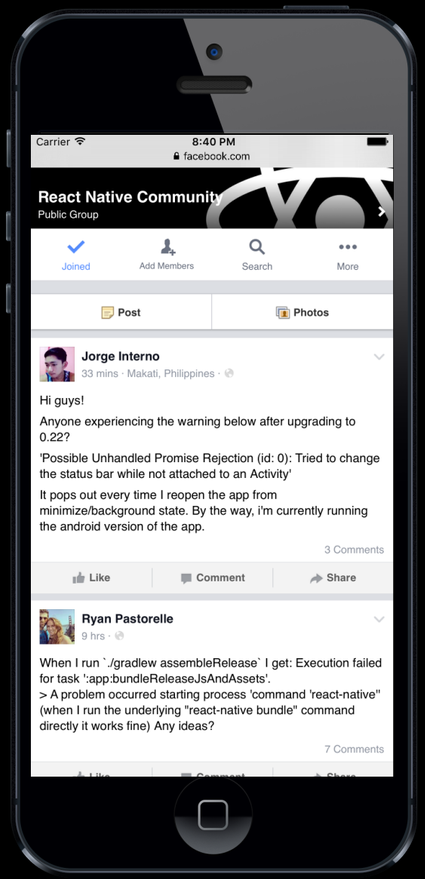

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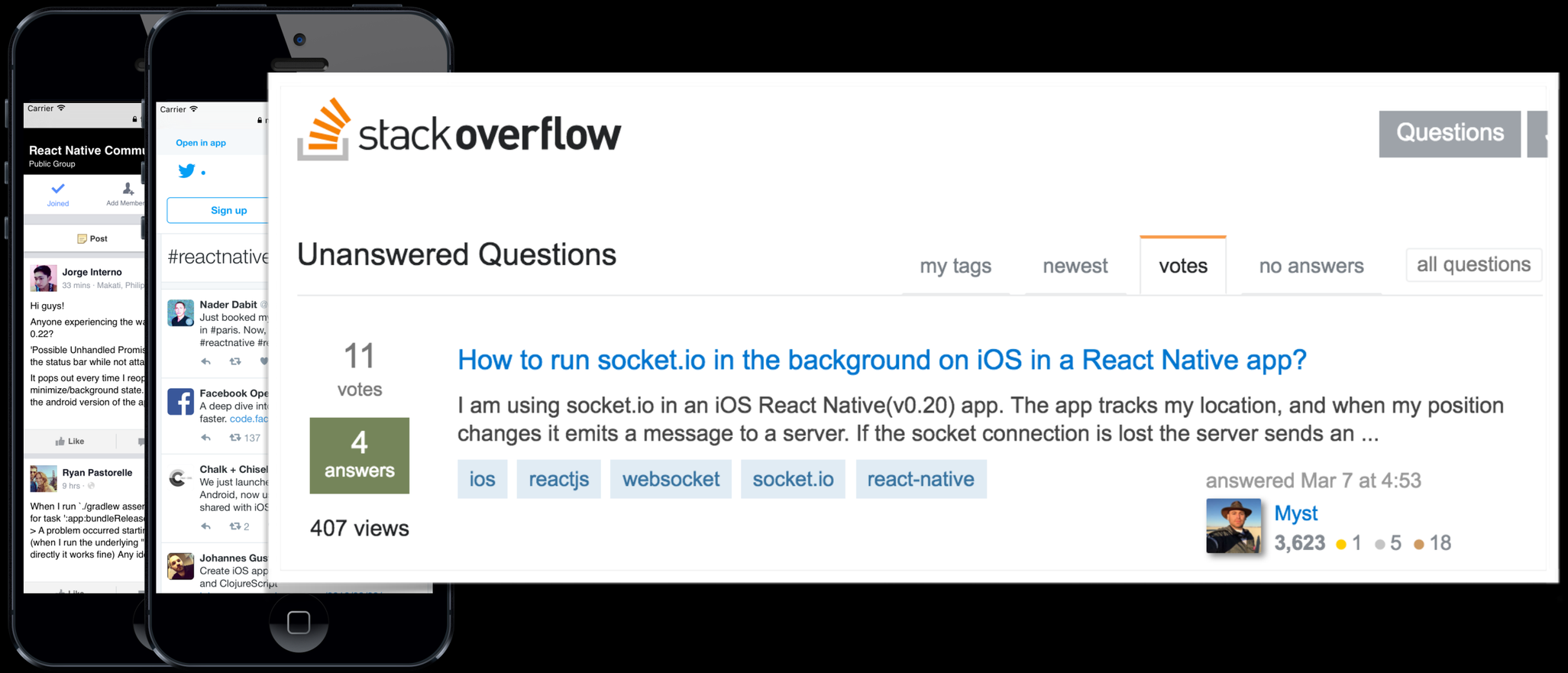

# React Native

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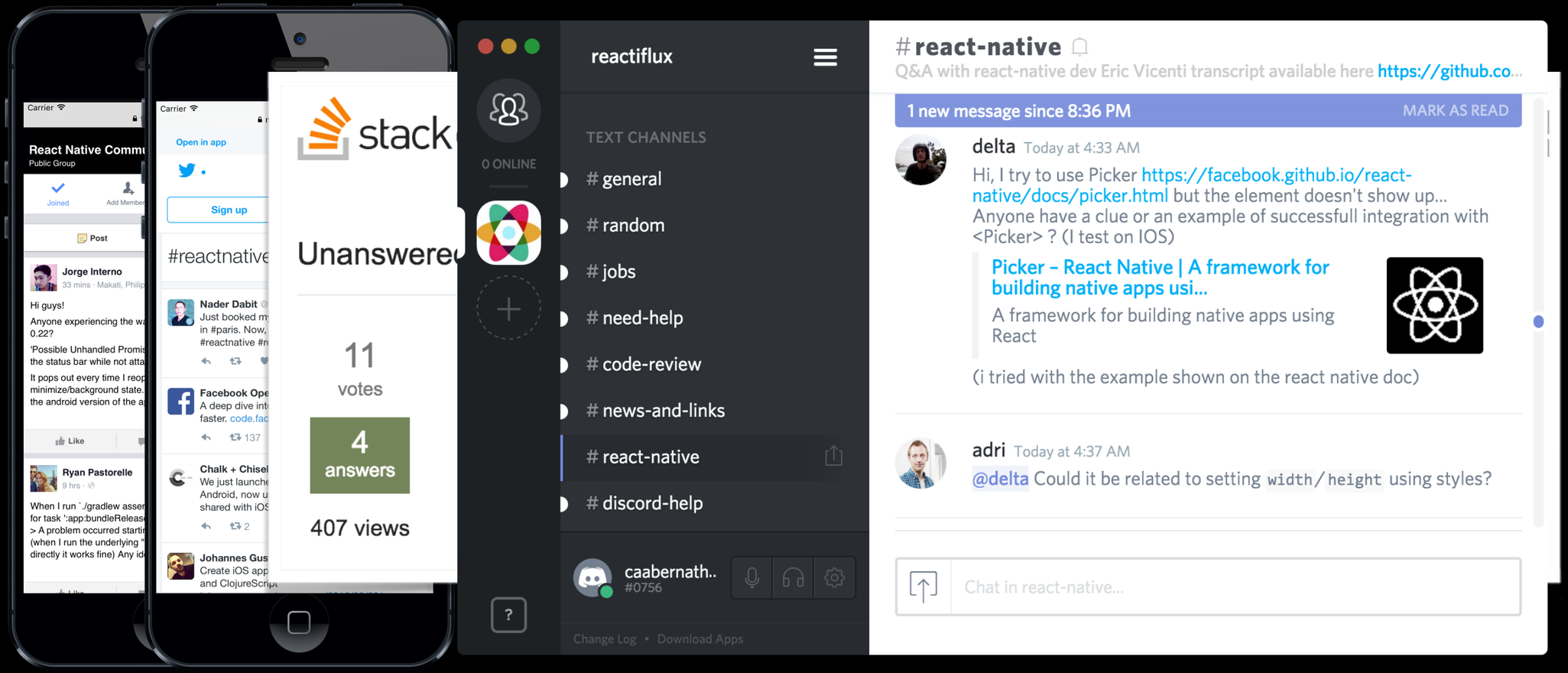

# React Native

## A framework for building native apps with React

#4

| | | | |
|---|---|---|---|
| 1 | | React.js Conf 2016 - Nick Schrock - Keynote<br>by Facebook Developers | 29:48 |
| 2 | | React.js Conf 2016 - Ben Alpert - What Lies Ahead<br>by Facebook Developers | 27:45 |
| 3 | | React.js Conf 2016 - Isaac Salier-Hellendag - Rich Text Editing with React<br>by Facebook Developers | 25:13 |

# React Native

## A framework for building native apps with React

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# React Native

## A framework for building native apps with React

- Promote your contributors

#4

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# React Native

## A framework for building native apps with React

- Promote your contributors
- Be super responsive and open

#4

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# React Native

## A framework for building native apps with React

- Promote your contributors
- Be super responsive and open
- Leverage tooling for efficient workflows

#4

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# React Native

## A framework for building native apps with React

#4

- Promote your contributors
- Be super responsive and open
- Leverage tooling for efficient workflows
- Market your project

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# Best Practices

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# Understand your community

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Understand your community

Create a great initial experience

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Understand your community

Create a great initial experience

Be responsive

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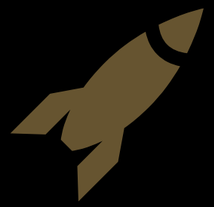
Understand your community

Create a great initial experience



Be responsive

Leverage tooling

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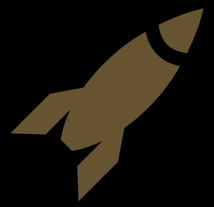
Understand your community

Create a great initial experience



Be responsive

Leverage tooling

Motivate, promote, and graduate

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# Thank You!

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CHRISTINE ABERNATHY
@abernathyca