Maintainable React

<geekle>

photo by Matías Santan

Who am I

Charly POLY

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- Sr. Software Engineer at Double
- Former Tech lead at Algolia

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- Former Tech lead at Algolia

- Passionate about web-engineering for 15 years
- Write on Medium and honest.engineering
- Speak at meetups and conferences

A quick look to front-end history

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<2000

JQuery /Prototype
Cross-browsers API
Animations

A quick look to front-end history

<2000	2000-2010'
JQuery /Prototype	**Backbone**
Cross-browsers API	MVP
Animations	Component State management
	Templating

A quick look to front-end history

<2000	2000-2010'	2010-2020'
JQuery /Prototype	**Backbone**	**Angular / React**
Cross-browsers API	MVP	MVV, MV*
Animations	Component State management	Separation of Concerns
	Templating	Application State management
		modules
		DI

“ Modern front-end is complex software

What is "Maintainable"?

Maintainable React app is about code that is:

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Maintainable React app is about code that is:

Easy to navigate 🧭

What is ”Maintainable”?

Maintainable React app is about code that is:

Easy to navigate 🧭

Easy to change 🔧

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Maintainable React app is about code that is:

Easy to navigate 🧭

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Easy to test 📏

Stable 🏗️

Make your React app easy to navigate 🧭

React app easy to navigate 🧭

React app easy to navigate 🧭

Project:

- Project chat title
- Project header
- Project listing item
- Project shortlist item
- Project thumbnail
- Project actions buttons

React app easy to navigate 🧭

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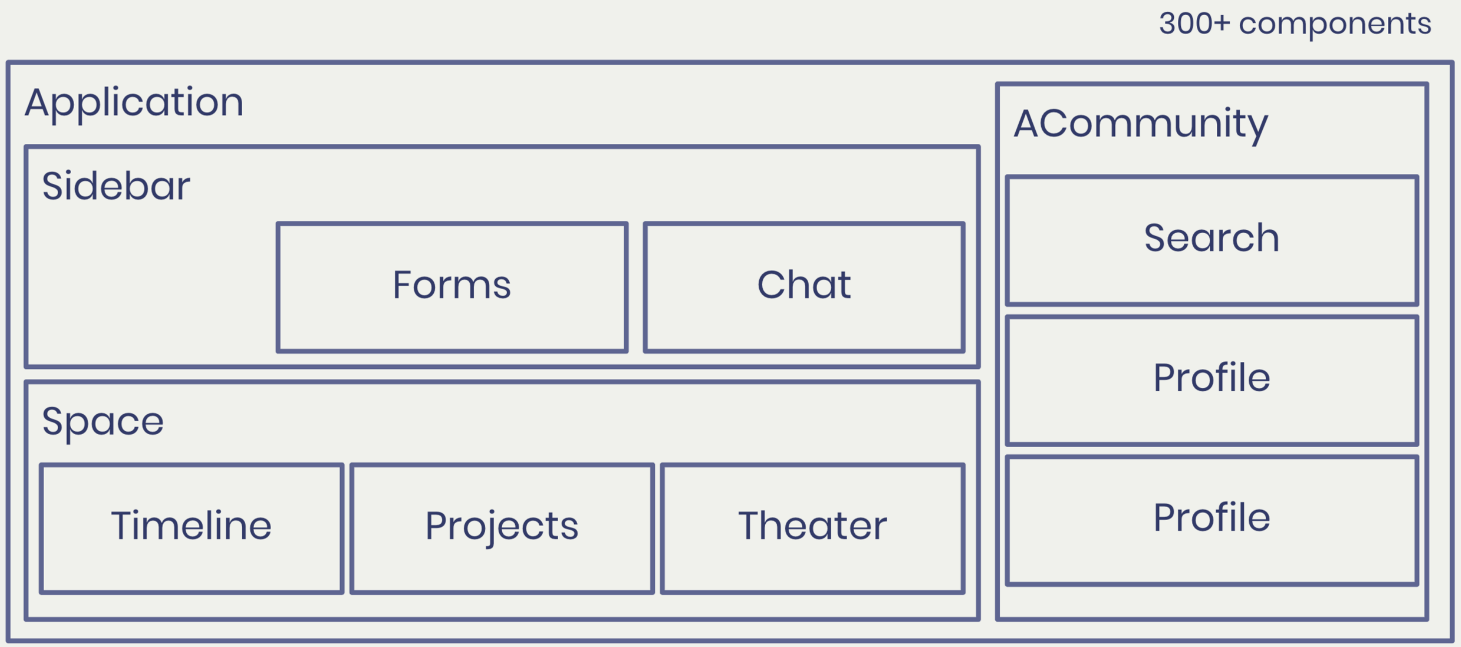

React app easy to navigate 🧭

```
[Domain]|[Page/Context]|ComponentName|[Type]
```

Part surrounded by "[]" are optional.

React app easy to navigate 🧭

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- **Domain:** "Which product owns this component?"

React app easy to navigate 🧭

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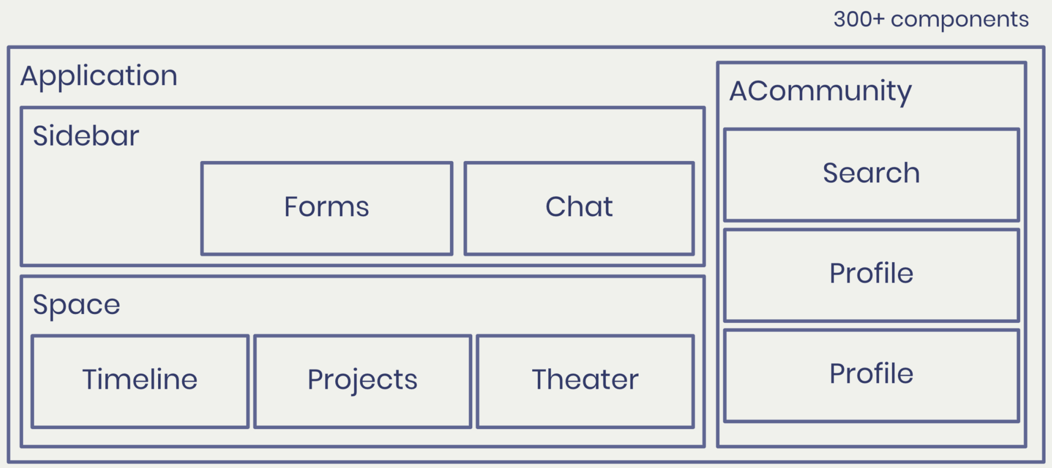

- **Domain:** "Which product owns this component?"
- **Context/Page**:
  "what is the parent component?"
  "Which product subpart/page does this component belong to?"

React app easy to navigate 🧭

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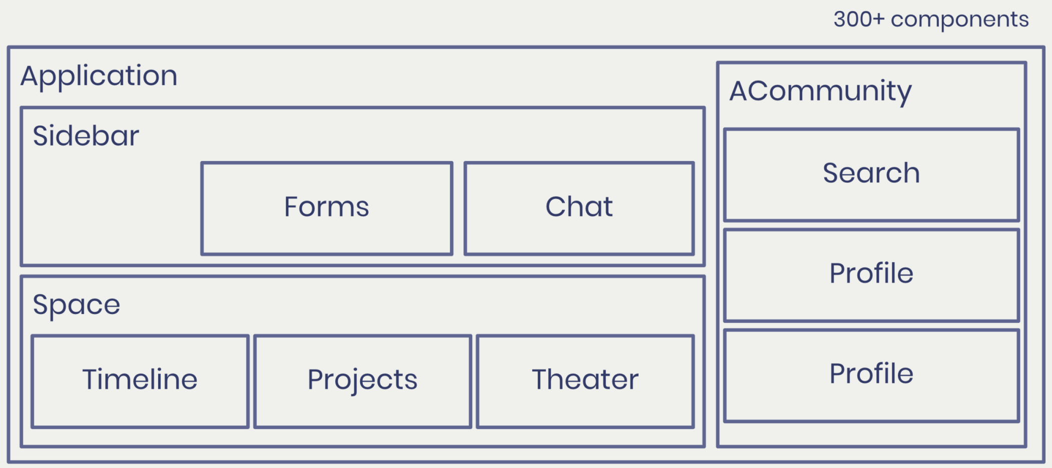

- **Domain:** "Which product owns this component?"
- **Context/Page**:
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- **Component's name:**
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React app easy to navigate 🧭

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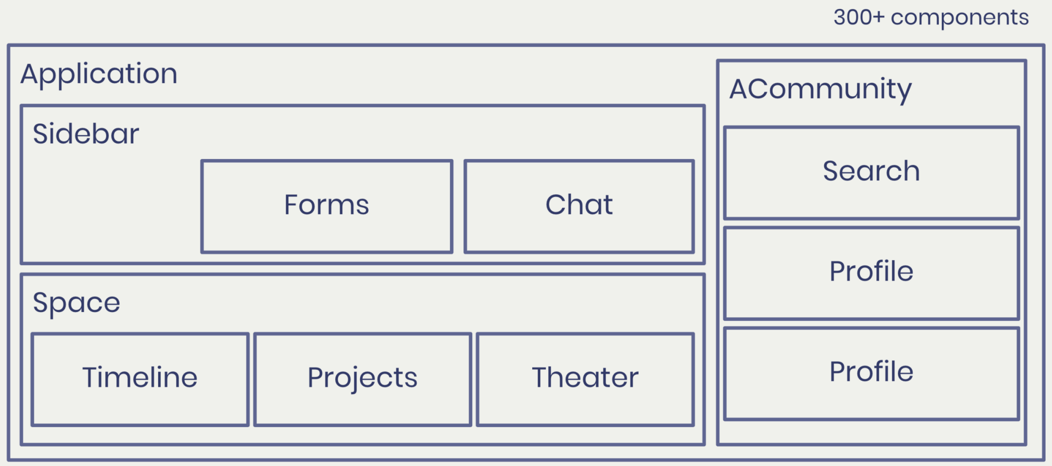
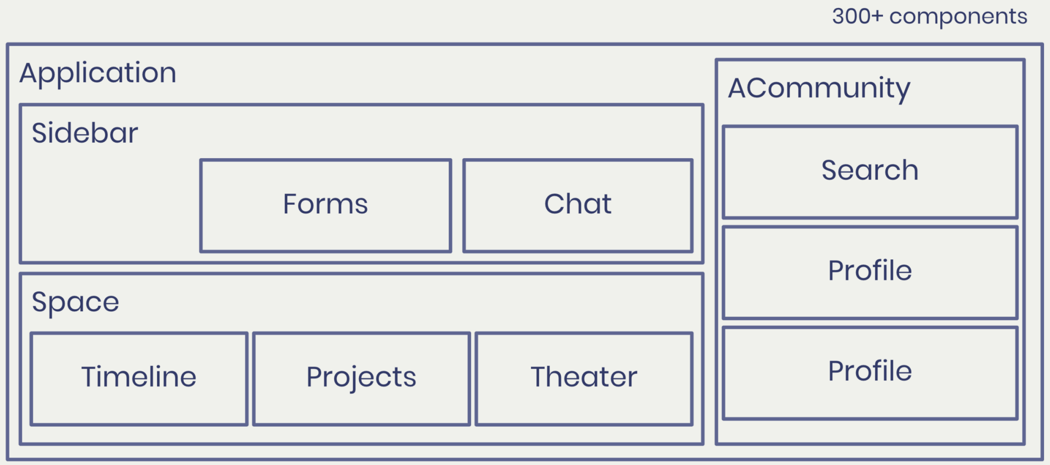


- **Domain:** "Which product owns this component?"
- **Context/Page**:
  "what is the parent component?"
  "Which product subpart/page does this component belong to?"
- **Component's name:**
  "What does this component do?"
- **Type:** Form (Input, ...), View, Button
  When missing, we assume that a component is a View component by default.

React app easy to navigate 🧭



Domain, Page/Context, Component, Type

ACommunityAddToShortListButton

Sidebar

SidebarSwitch

ChatConversation

ChatConversationName

React app easy to navigate 🧭

File-based	Folders-based
ACommunityAddToShortListButton.tsx	ACommunity/AddToShortList/Button/index.tsx
Sidebar.tsx	Sidebar/index.tsx
SidebarSwitch.tsx	Sidebar/Switch/index.tsx

React app easy to navigate 🧭

🧭 Good naming convention will force you to divide your app in meaningful pieces

Make your React app easy to change 🔧

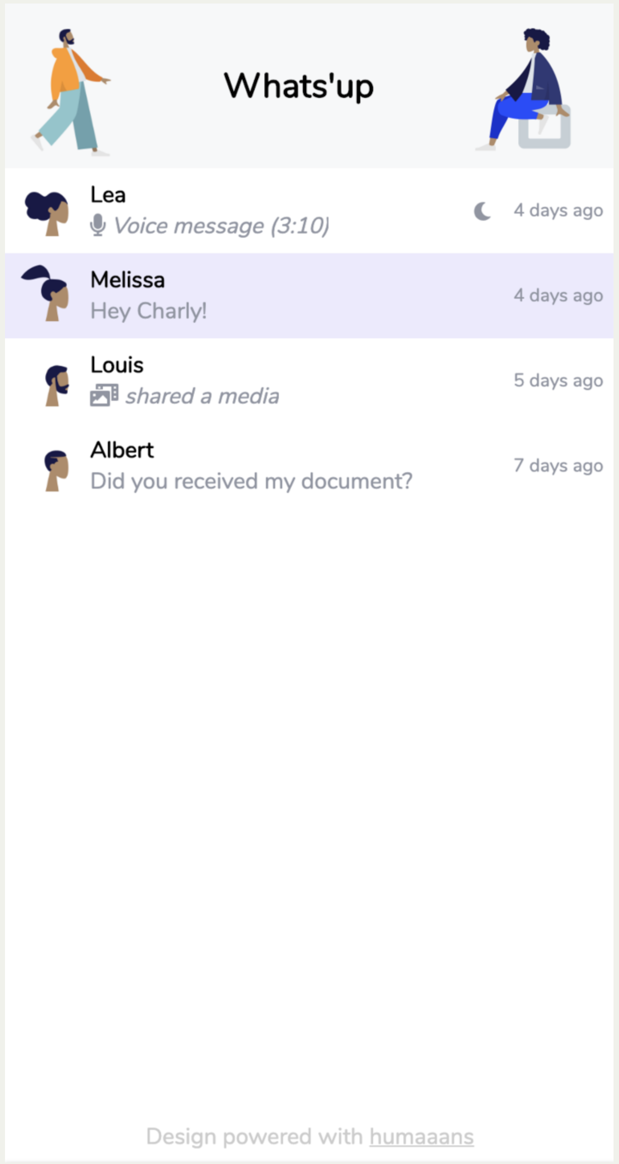
React app easy to change 🔧

Reference version

https://codesandbox.io/s/maintainable-react-geekle-april-2020-94pq1

Refactored version

https://codesandbox.io/s/maintainable-react-geekle-april-2020-dkx1h



Whats'up

Lea
Voice message (3:10) — 4 days ago

Melissa
Hey Charly! — 4 days ago

Louis
shared a media — 5 days ago

Albert
Did you received my document? — 7 days ago

Design powered with humaaans

React app easy to change 🔧

React app easy to change 🔧

🔧 Hooks doesn’t means that container/view pattern is dead

React app easy to change 🔧

🔧 Hooks doesn’t means that container/view pattern is dead

🔧 “A good line of debt is easy to remove”

Make your React app easy to test 📏

React app easy to test 📏

Tests makes refactoring easier

React app easy to test 📏

Tests makes refactoring easier

1. Choose a testing strategy
2. Make your components testable

React app easy to test 📏

Choose a testing strategy

React app easy to test 📏

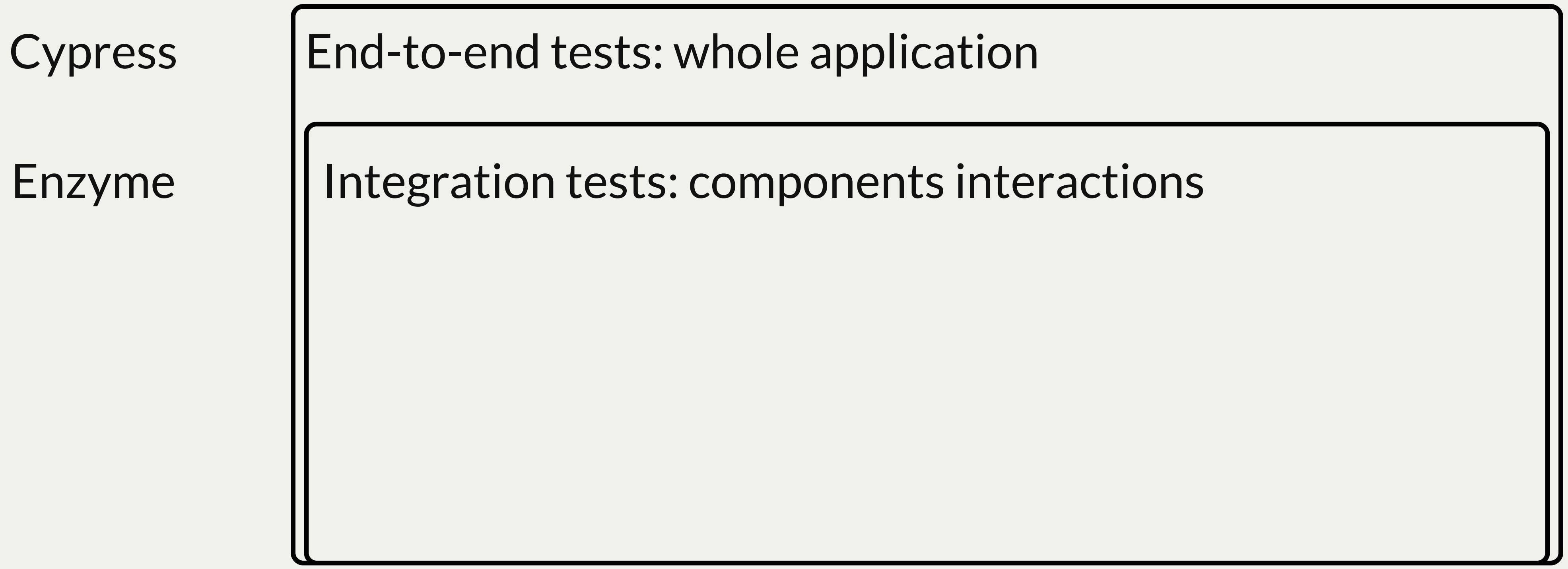
Choose a testing strategy

Cypress

End-to-end tests: whole application

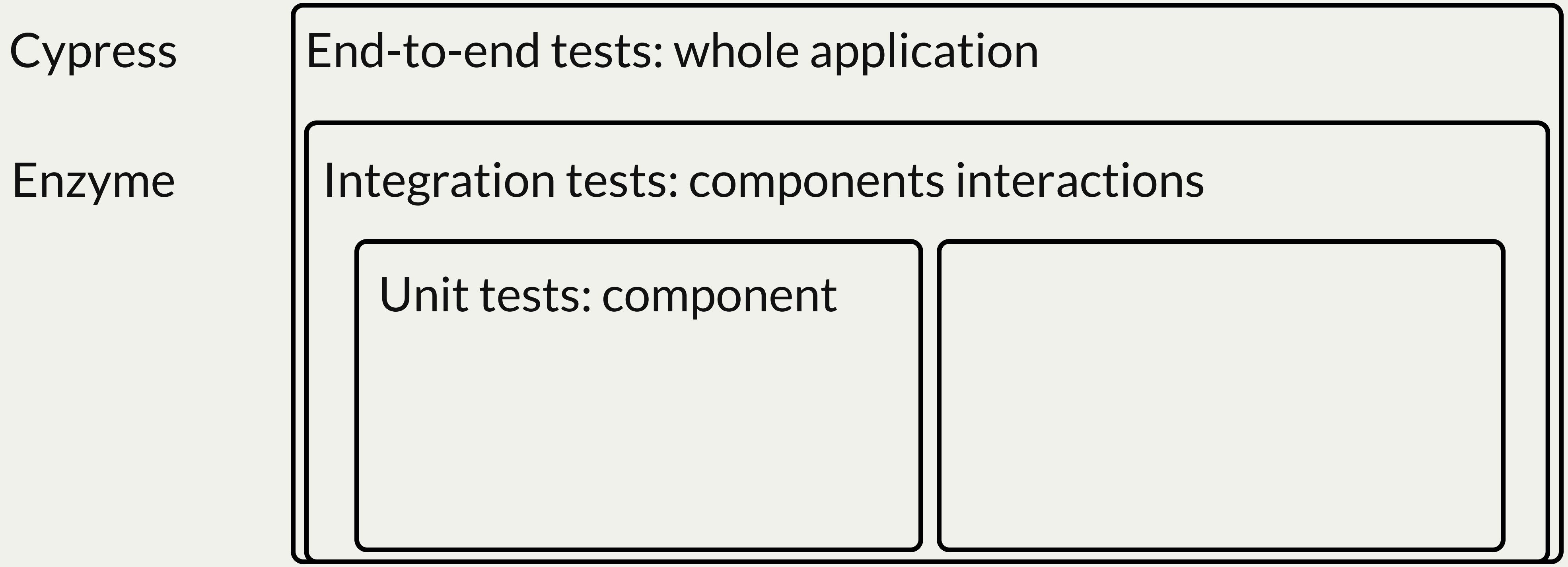
React app easy to test 📏

Choose a testing strategy


Cypress
End-to-end tests: whole application
Enzyme
Integration tests: components interactions

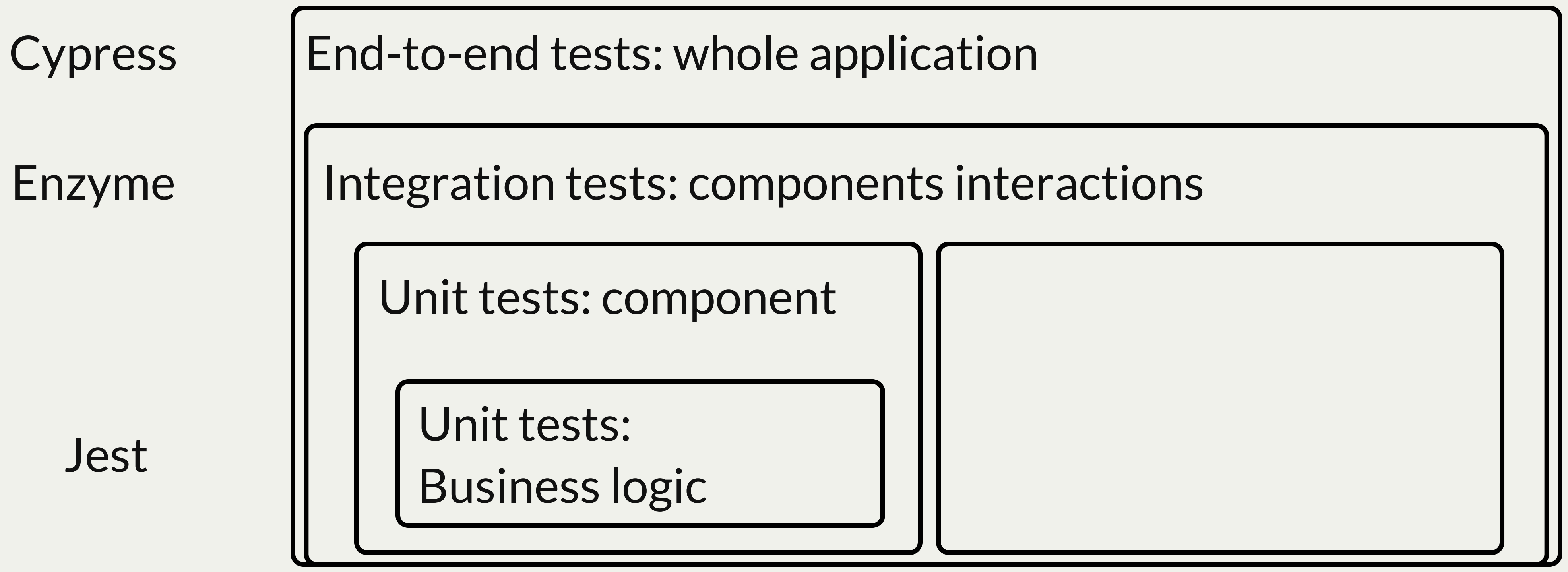
React app easy to test 📏

Choose a testing strategy


Cypress
Enzyme
End-to-end tests: whole application
Integration tests: components interactions
Unit tests: component

React app easy to test 📏

Choose a testing strategy


Cypress
Enzyme
Jest
End-to-end tests: whole application
Integration tests: components interactions
Unit tests: component
Unit tests:
Business logic

React app easy to test 📏

A good testing strategy

React app easy to test 📏

A good testing strategy

1. Test critical business logic

React app easy to test 📏

A good testing strategy

1. Test critical business logic
2. Add test when fixing regression

React app easy to test 📏

A good testing strategy

1. Test critical business logic
2. Add test when fixing regression
3. E2E tests for critical paths

React app easy to test 📏

Make your components testable

An example

https://codesandbox.io/s/maintainable-react-geekle-april-2020-tests-xw27n

React app easy to test 📏

Make your components testable

React app easy to test 📏

Make your components testable

- Extract business logic and helpers

React app easy to test 📏

Make your components testable

- Extract business logic and helpers
- Complex view complex should get data from props

React app easy to test 📏

React app easy to test 📏

- 📏 Make your important logic accessible

React app easy to test 📏

📏 Make your important logic accessible

📏 Test the critical part of your apps will facilitate refactoring

Keep your React app stable 🏗️

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Make your React app stable on 3 levels:

Keep your React app stable 🏗️

Make your React app stable on 3 levels:

- **on the code level:** by leveraging TypeScript

Keep your React app stable 🏗️

Make your React app stable on 3 levels:

- **on the code level:** by leveraging TypeScript
- **on the tools level**: by leveraging automation

Keep your React app stable 🏗️

Make your React app stable on 3 levels:

- **on the code level:** by leveraging TypeScript
- **on the tools level**: by leveraging automation
- **on human level**: proper reviews

Keep your React app stable 🏗️

By using TypeScript at its full power

- Using types partially actually brings *noise* and false confidence
- Use TypeScript strict mode

OR

Keep your React app stable 🏗️

By using TypeScript at its full power

- Using types partially actually brings *noise* and false confidence
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  OR

- Type your data and let the inference do the magic

Keep your React app stable 🏗️

By using TypeScript at its full power

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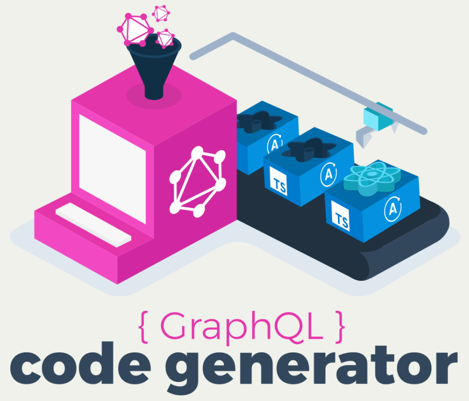
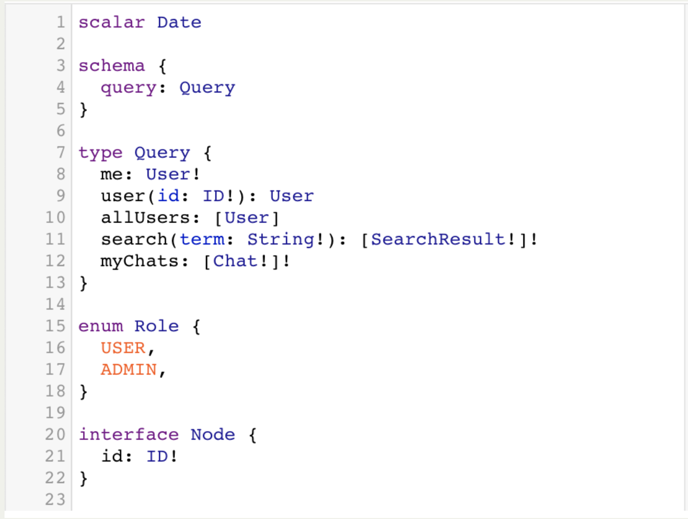




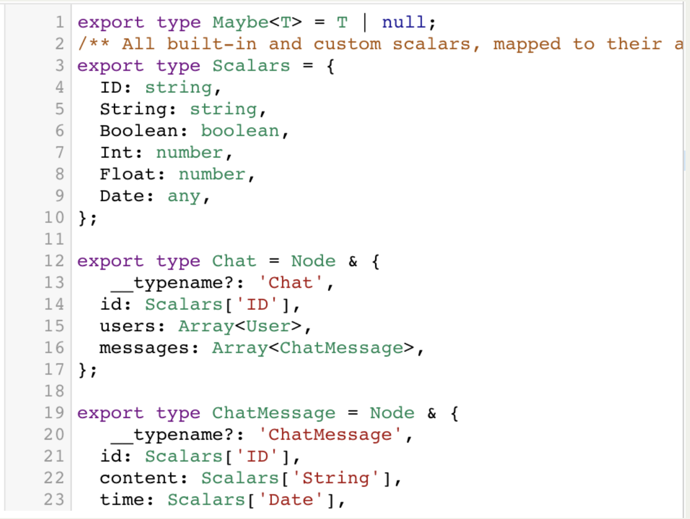
```graphql
scalar Date

schema {
  query: Query
}

type Query {
  me: User!
  user(id: ID!): User
  allUsers: [User]
  search(term: String!): [SearchResult!]!
  myChats: [Chat!]!
}

enum Role {
  USER,
  ADMIN,
}

interface Node {
  id: ID!
}
```



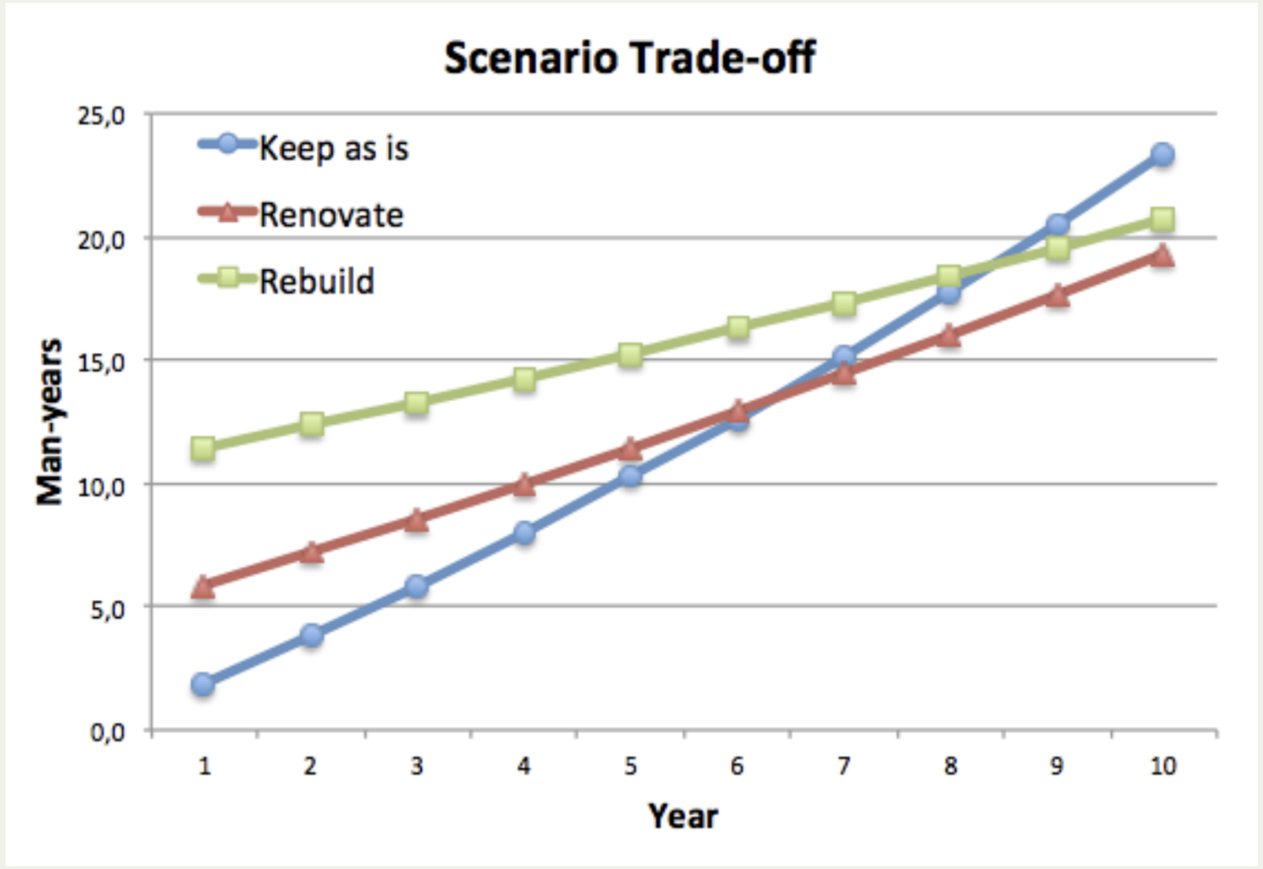
```typescript
export type Maybe<T> = T | null;
/** All built-in and custom scalars, mapped to their a
export type Scalars = {
  ID: string,
  String: string,
  Boolean: boolean,
  Int: number,
  Float: number,
  Date: any,
};

export type Chat = Node & {
   __typename?: 'Chat',
  id: Scalars['ID'],
  users: Array<User>,
  messages: Array<ChatMessage>,
};

export type ChatMessage = Node & {
   __typename?: 'ChatMessage',
  id: Scalars['ID'],
  content: Scalars['String'],
  time: Scalars['Date'],
```

Keep your React app stable 🏗️

By using tools to stay up-to-date

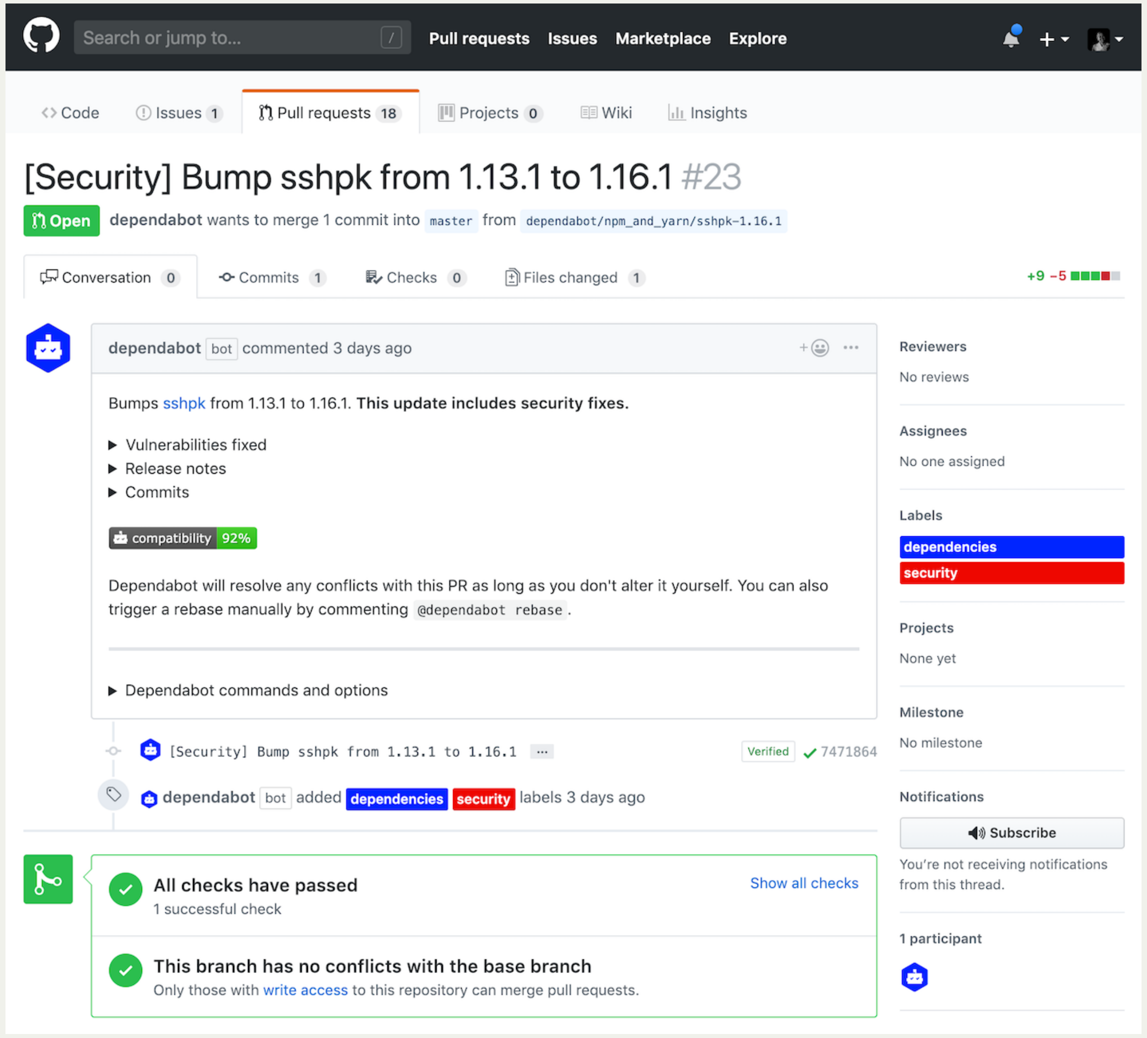


“An Empirical Model of Technical Debt and Interest”, SIG

Keep your React app stable 🏗️

By using tools to stay up-to-date

- Dependabot 🤖
- Renovate your code
- Update, break things often and move fast



Search or jump to... Pull requests Issues Marketplace Explore

Code | Issues 1 | Pull requests 18 | Projects 0 | Wiki | Insights

[Security] Bump sshpk from 1.13.1 to 1.16.1 #23

Open **dependabot** wants to merge 1 commit into `master` from `dependabot/npm_and_yarn/sshpk-1.16.1`

Conversation 0 | Commits 1 | Checks 0 | Files changed 1 | +9 −5

dependabot bot commented 3 days ago

Bumps sshpk from 1.13.1 to 1.16.1. **This update includes security fixes.**

▶ Vulnerabilities fixed
▶ Release notes
▶ Commits

compatibility 92%

Dependabot will resolve any conflicts with this PR as long as you don't alter it yourself. You can also trigger a rebase manually by commenting `@dependabot rebase`.

▶ Dependabot commands and options

`[Security] Bump sshpk from 1.13.1 to 1.16.1` … Verified ✓ 7471864

dependabot bot added dependencies security labels 3 days ago

All checks have passed
1 successful check
Show all checks

This branch has no conflicts with the base branch
Only those with write access to this repository can merge pull requests.

Reviewers
No reviews

Assignees
No one assigned

Labels
dependencies
security

Projects
None yet

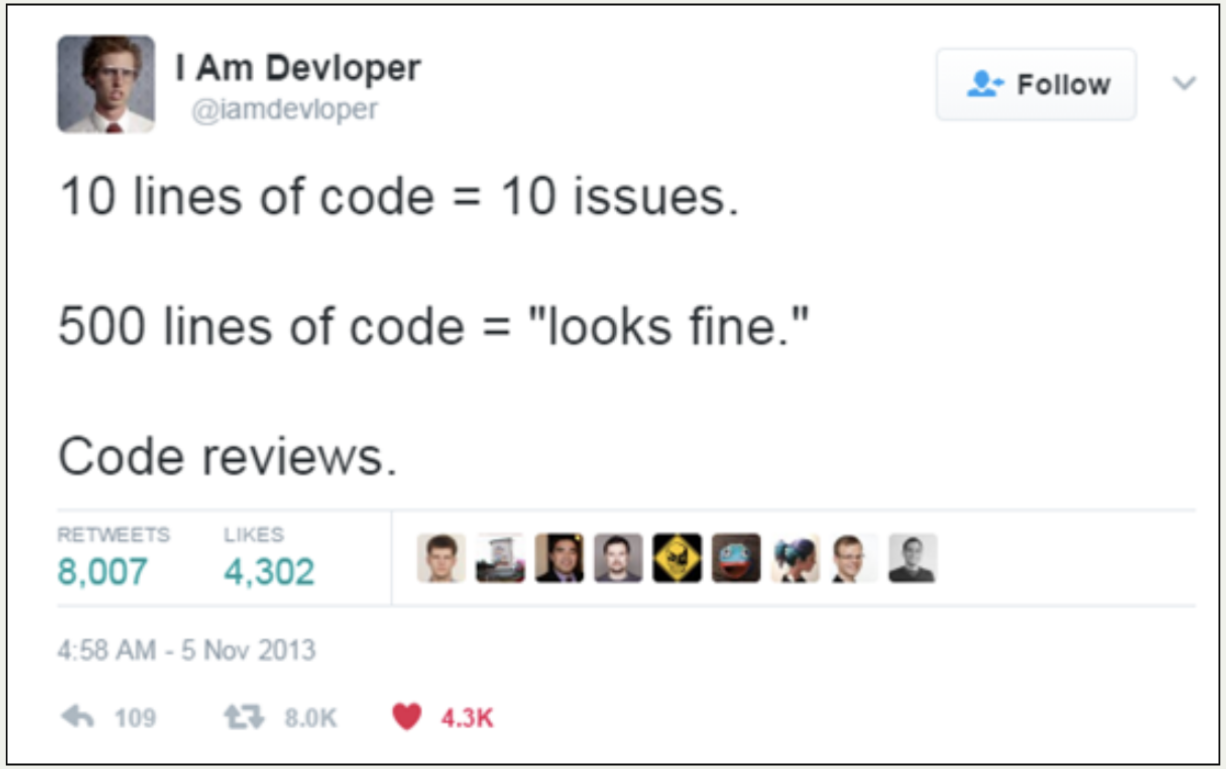
Milestone
No milestone

Notifications
Subscribe
You're not receiving notifications from this thread.

1 participant

Keep your React app stable 🏗️

By properly reviewing your contributions



I Am Devloper
@iamdevloper

Follow

10 lines of code = 10 issues.

500 lines of code = "looks fine."

Code reviews.

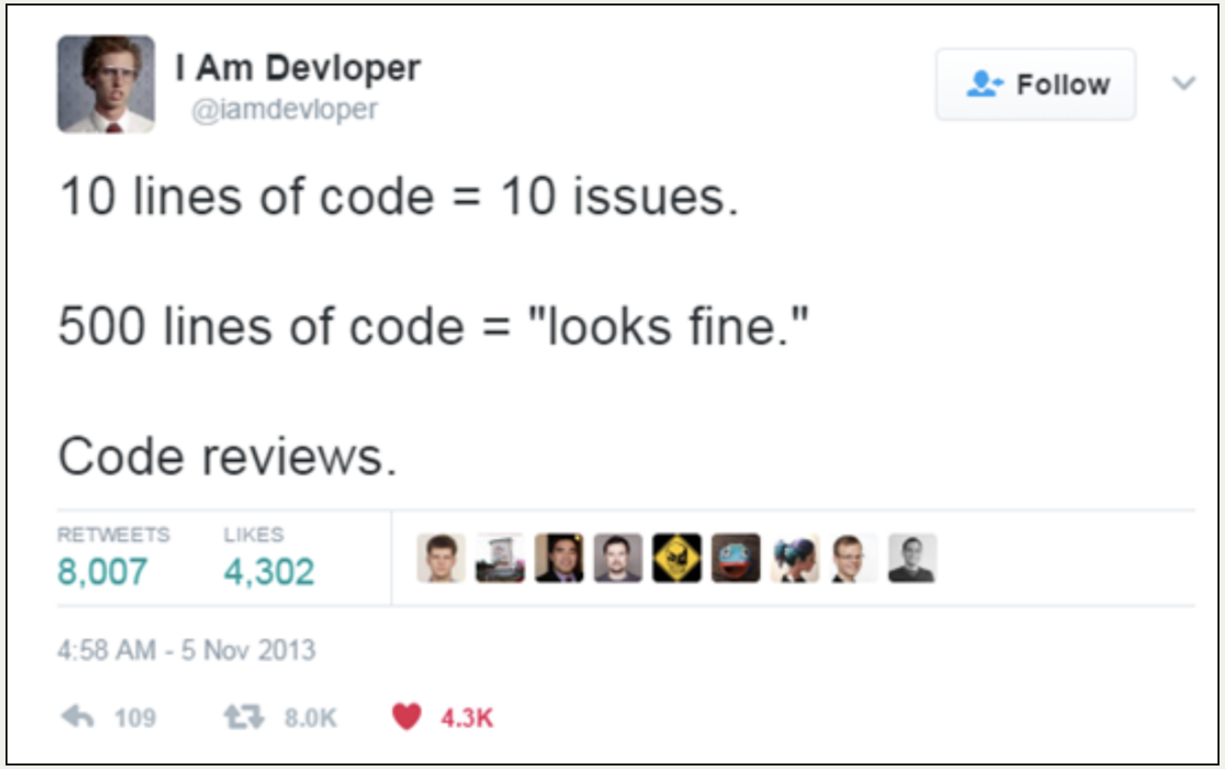
RETWEETS 8,007 LIKES 4,302

4:58 AM - 5 Nov 2013

109 8.0K 4.3K

Keep your React app stable 🏗️

By properly reviewing your contributions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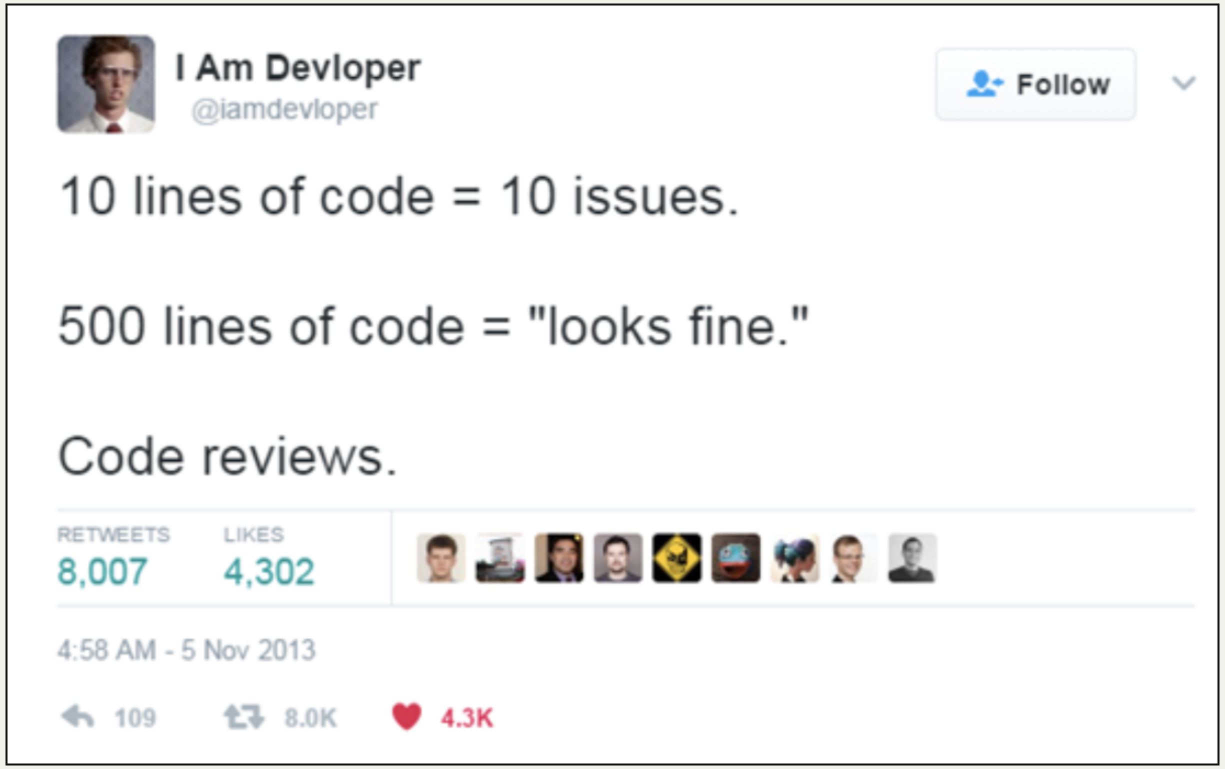

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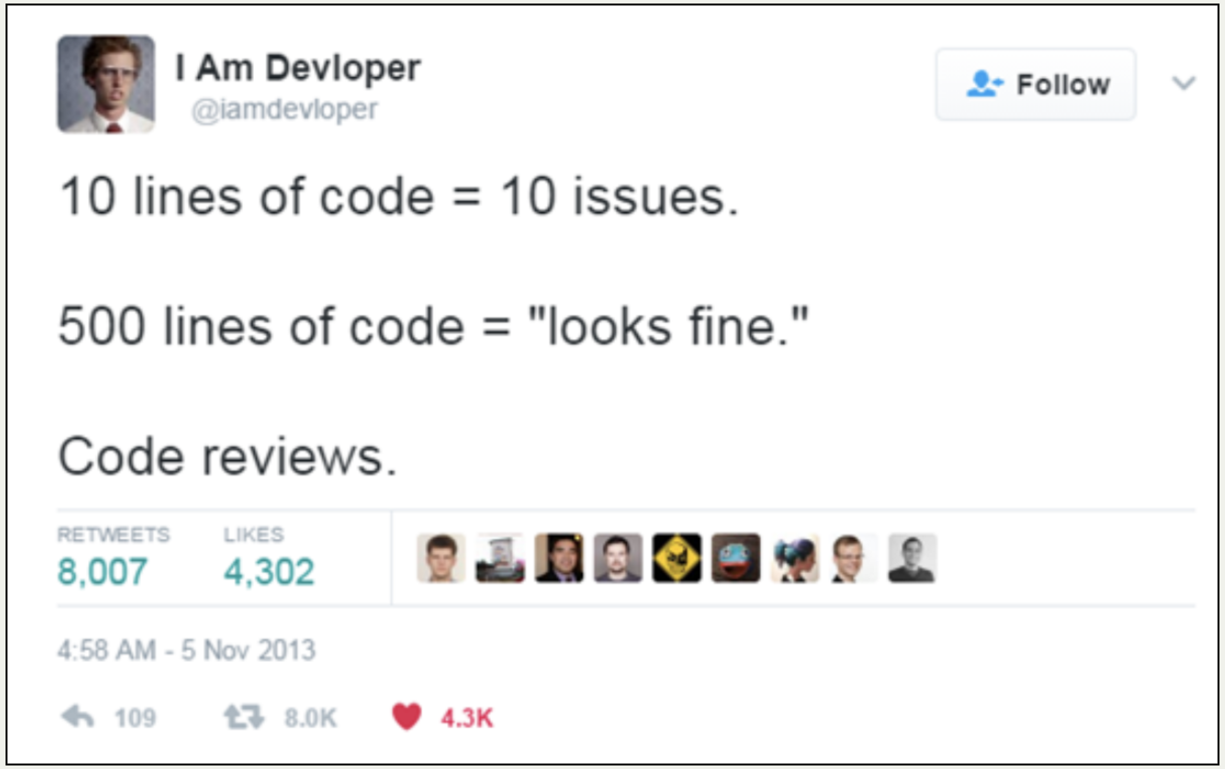

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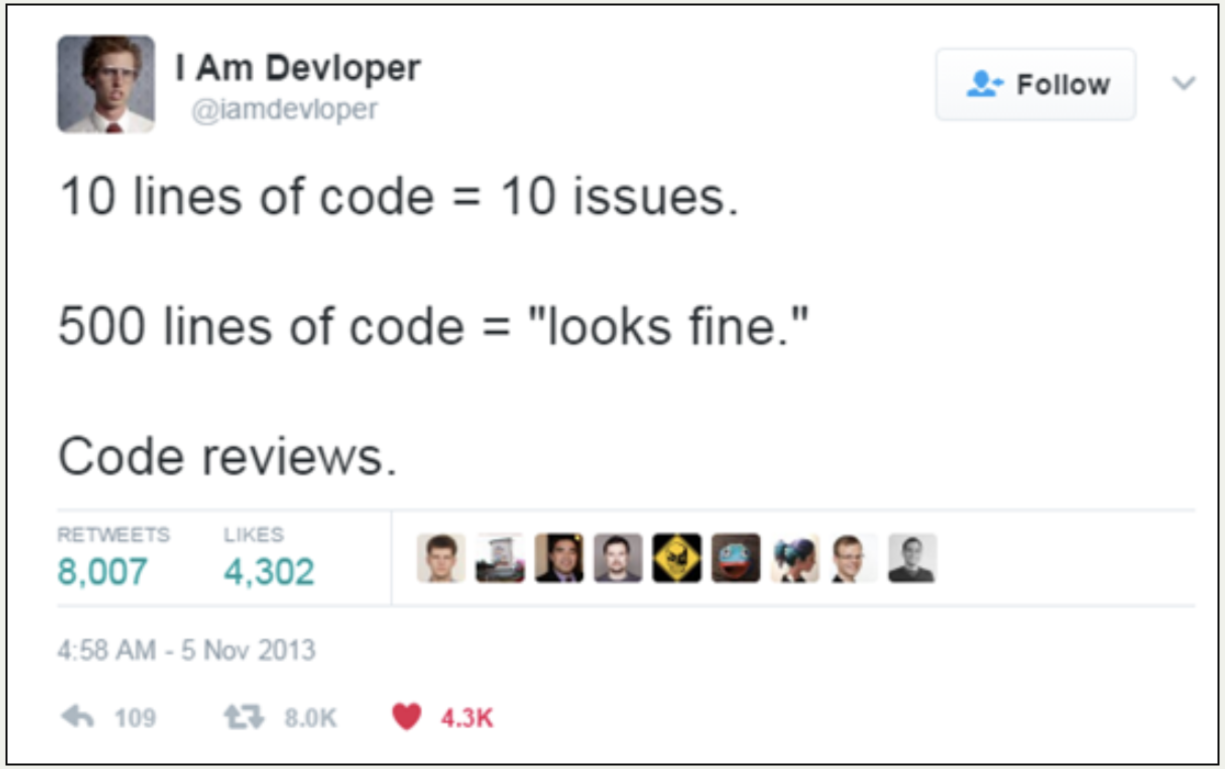

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- **Review at most 500 LOC at a time, otherwise review fatigue can kick in.**
- Well defined components means smaller changes
- Refactors should be done in dedicated branches

Conclusion

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- 🧭 Naming is a good exercice to help divide your app in meaningful components

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- 🔧 Hooks doesn't mean "fat components", factorise your components wisely
- 📏 Make your component testable and choose a test strategy to enhance refactorings

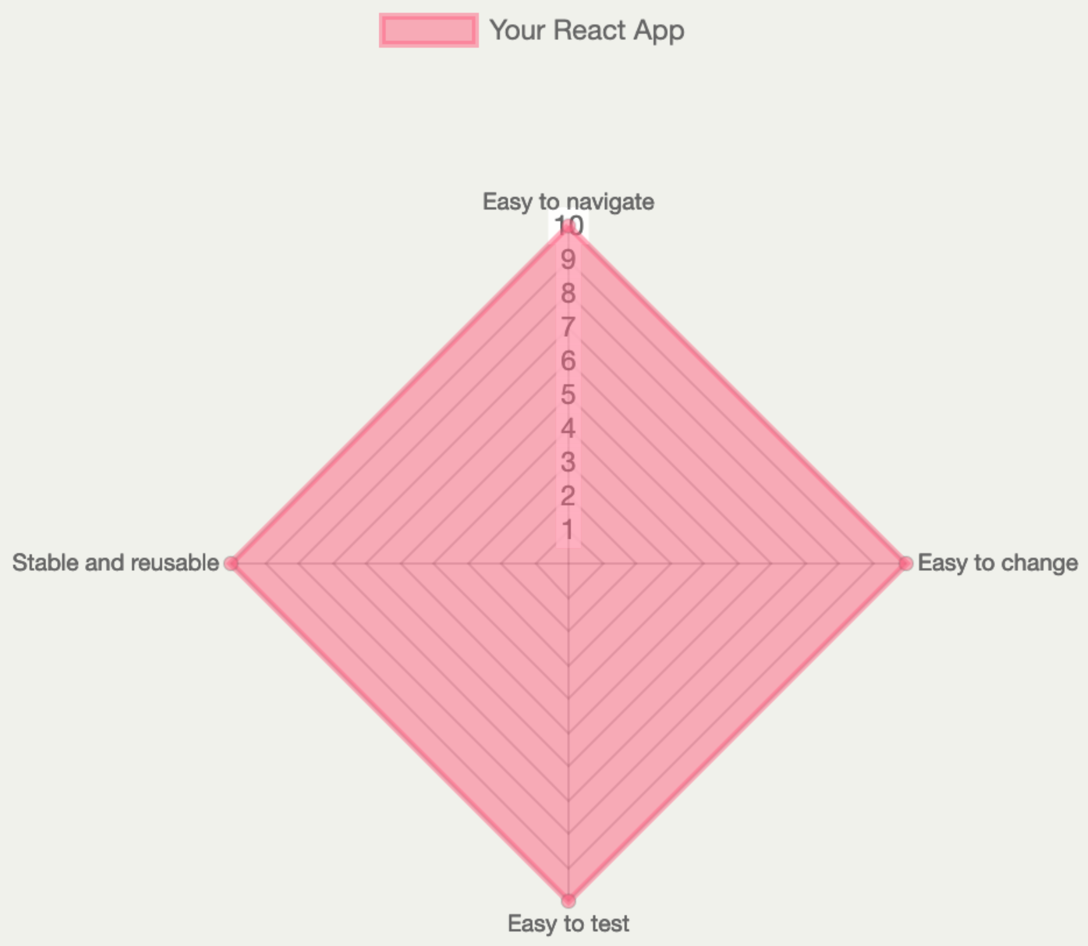
Conclusion

- 🧭 Naming is a good exercice to help divide your app in meaningful components
- 🔧 Hooks doesn't mean "fat components", factorise your components wisely
- 📏 Make your component testable and choose a test strategy to enhance refactorings
- 🏗️ Keep your app stable by stay up-to-date and leveraging types and good team-work

Side-note

Side-note

- No silver bullet, no perfect solution



Side-note

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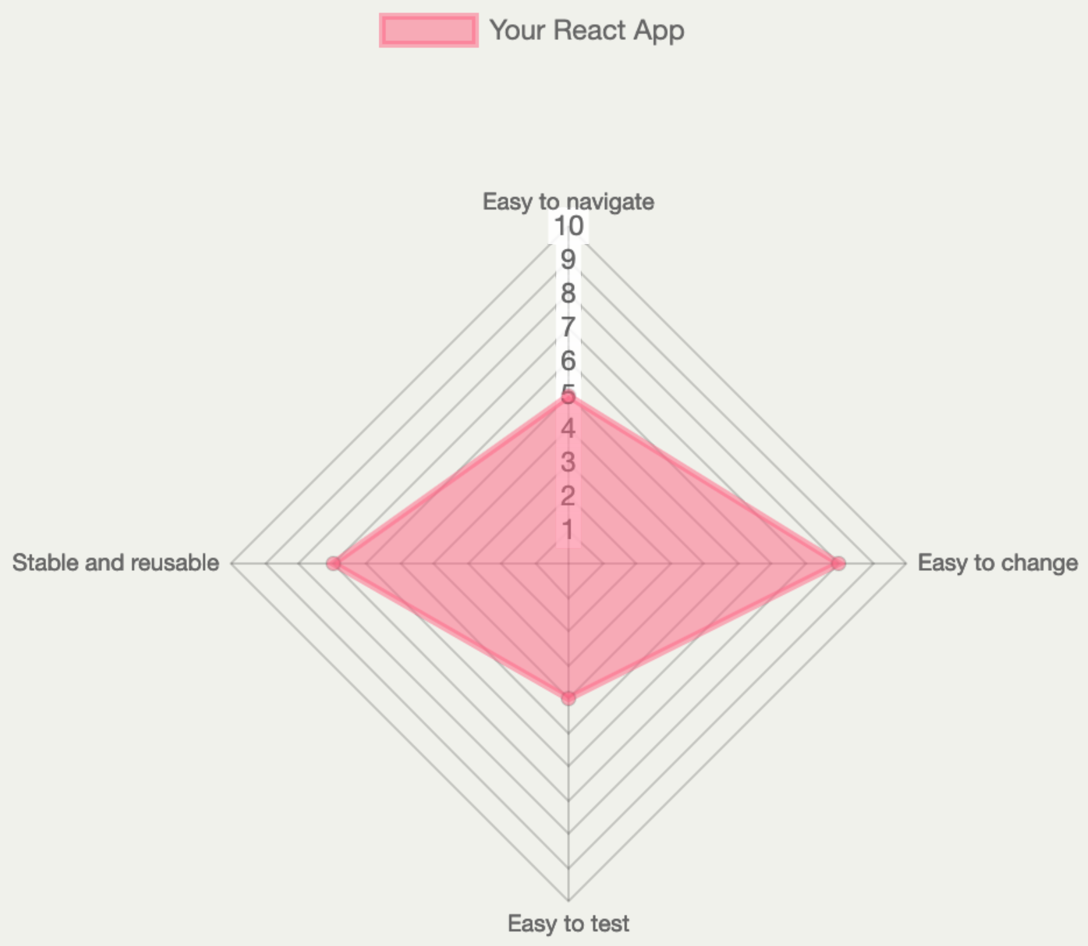

Side-note

The best solution fits your business needs

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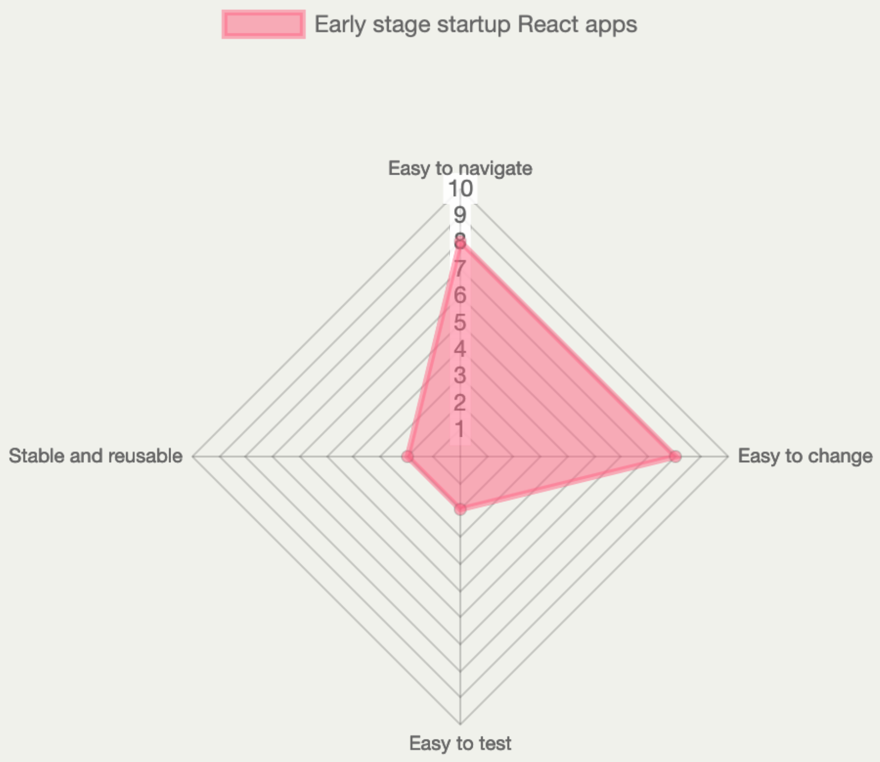

Side-note

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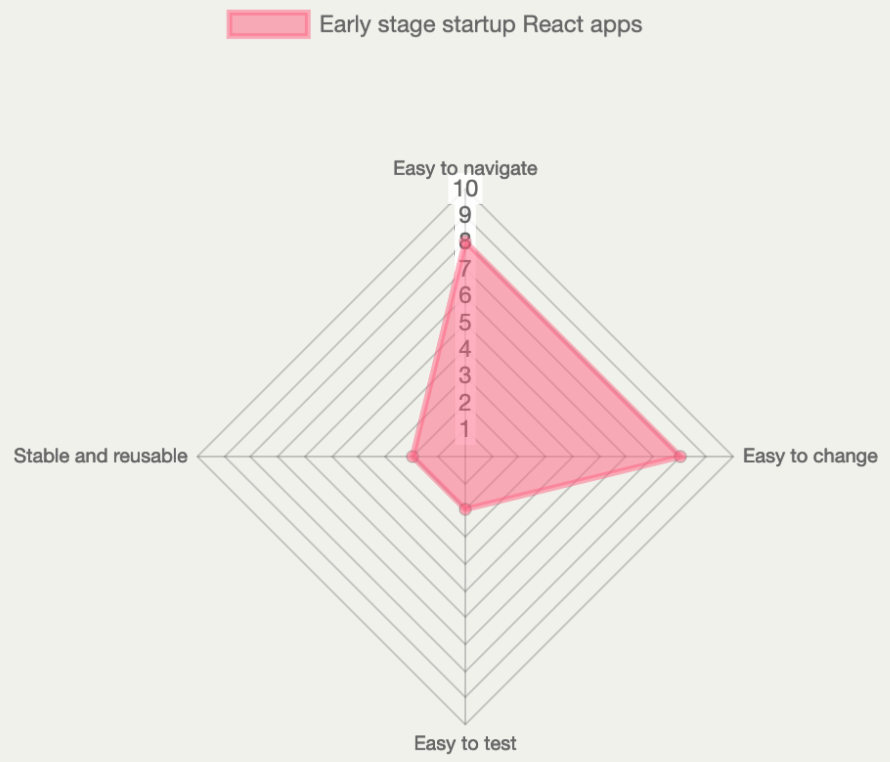

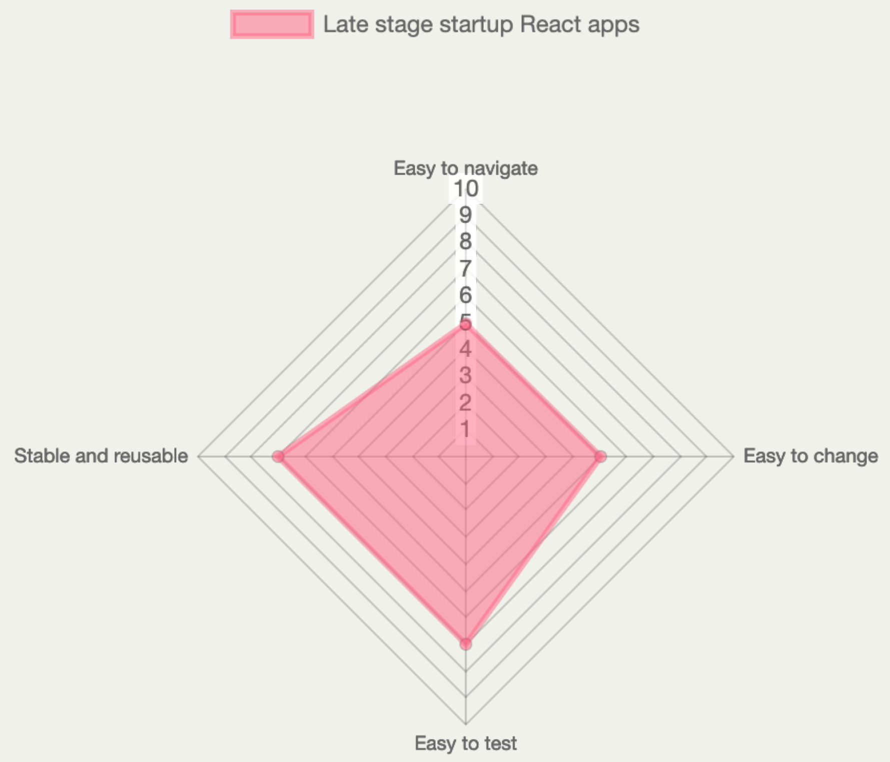

Thank you!

slides on noti.st/charlypoly

withdouble.com

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@wittydeveloper