React to Svelte

Story of one migration or how I spent last weekend

infobip

@hadoocken

@v_hadoocken

Infobip SPB

Infobip Frontend
===
React

React is:

a. Need to follow best practices of this year
b. Count of packages is limitless
c. Codebase is not consistent without control

How about Svelte?

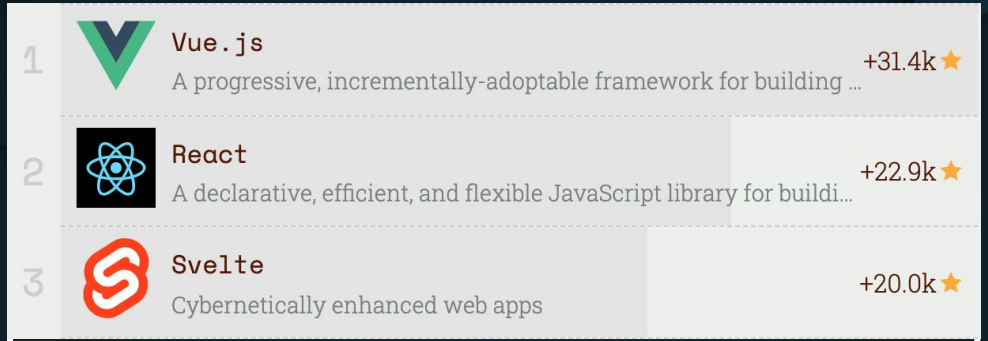
Svelte? Svelte!

03

Prediction Award

Awarded to up-and-coming technology that might take over... or not?

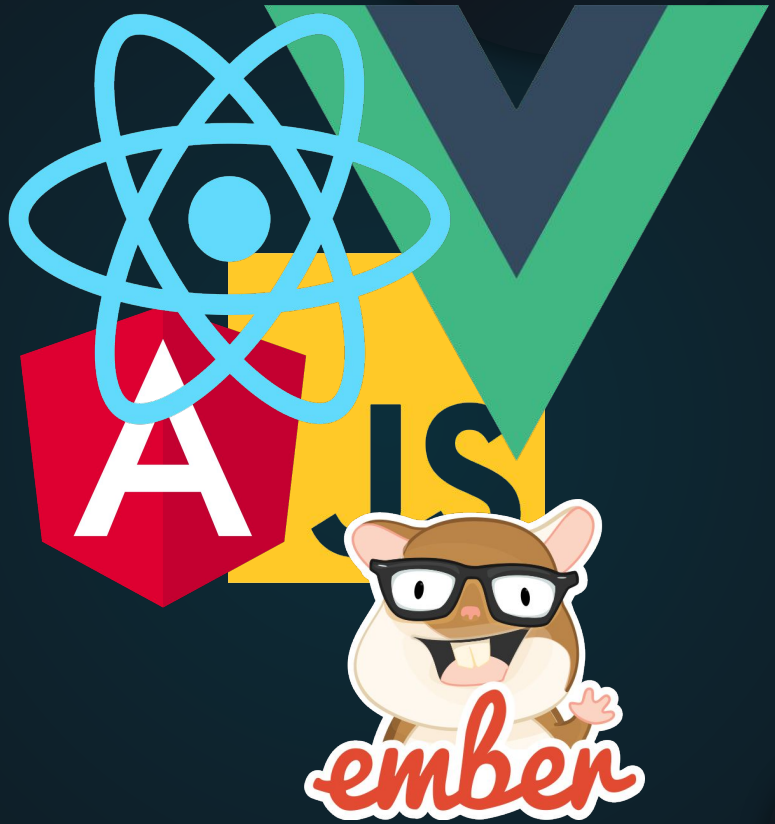
State of JS 2019 / awards



In 2019, Svelte disrupted the category of the UI frameworks, taking the 3rd position behind Vue.js and React but before Angular.

Rising Stars 2019

Back to ~~2007~~ 2010s...


A
JS
ember

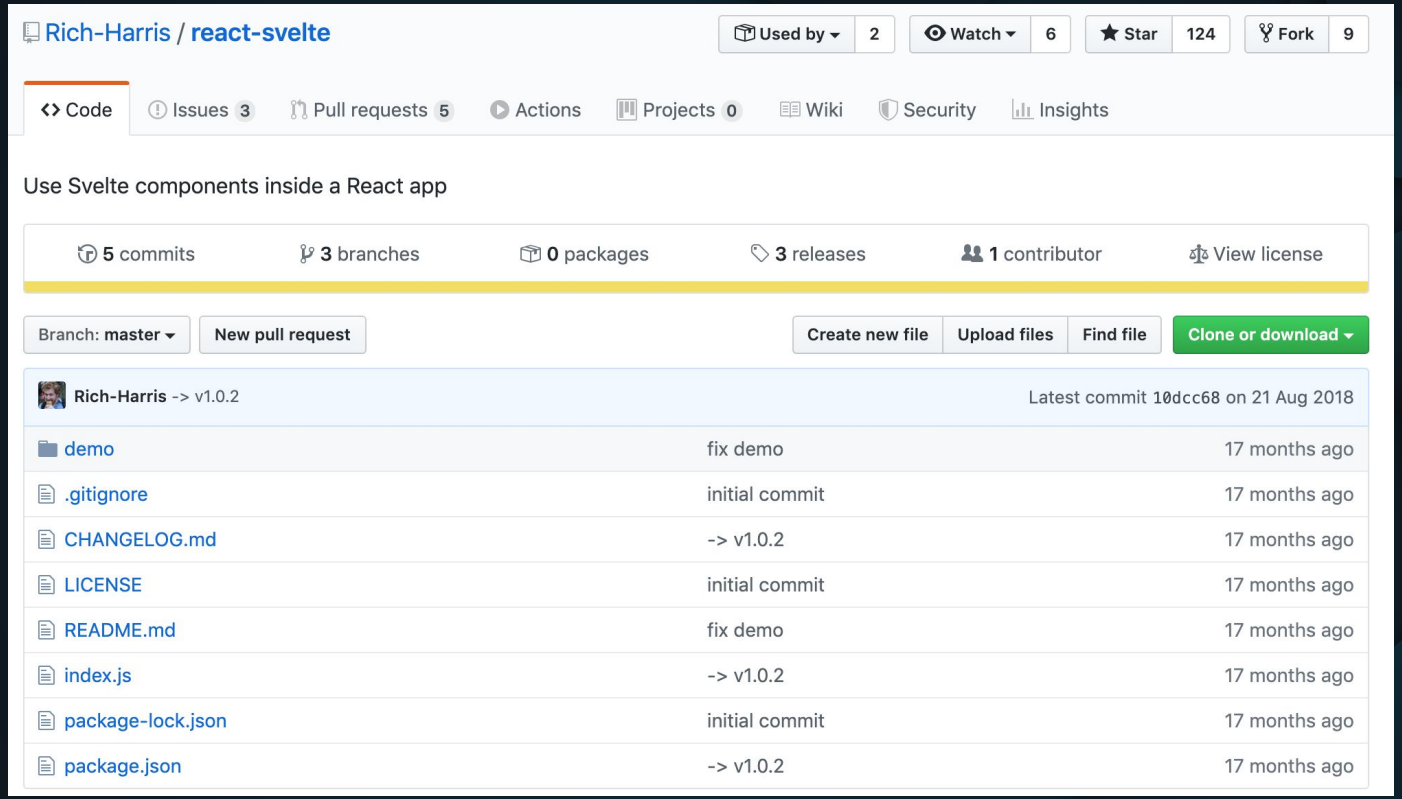

JS

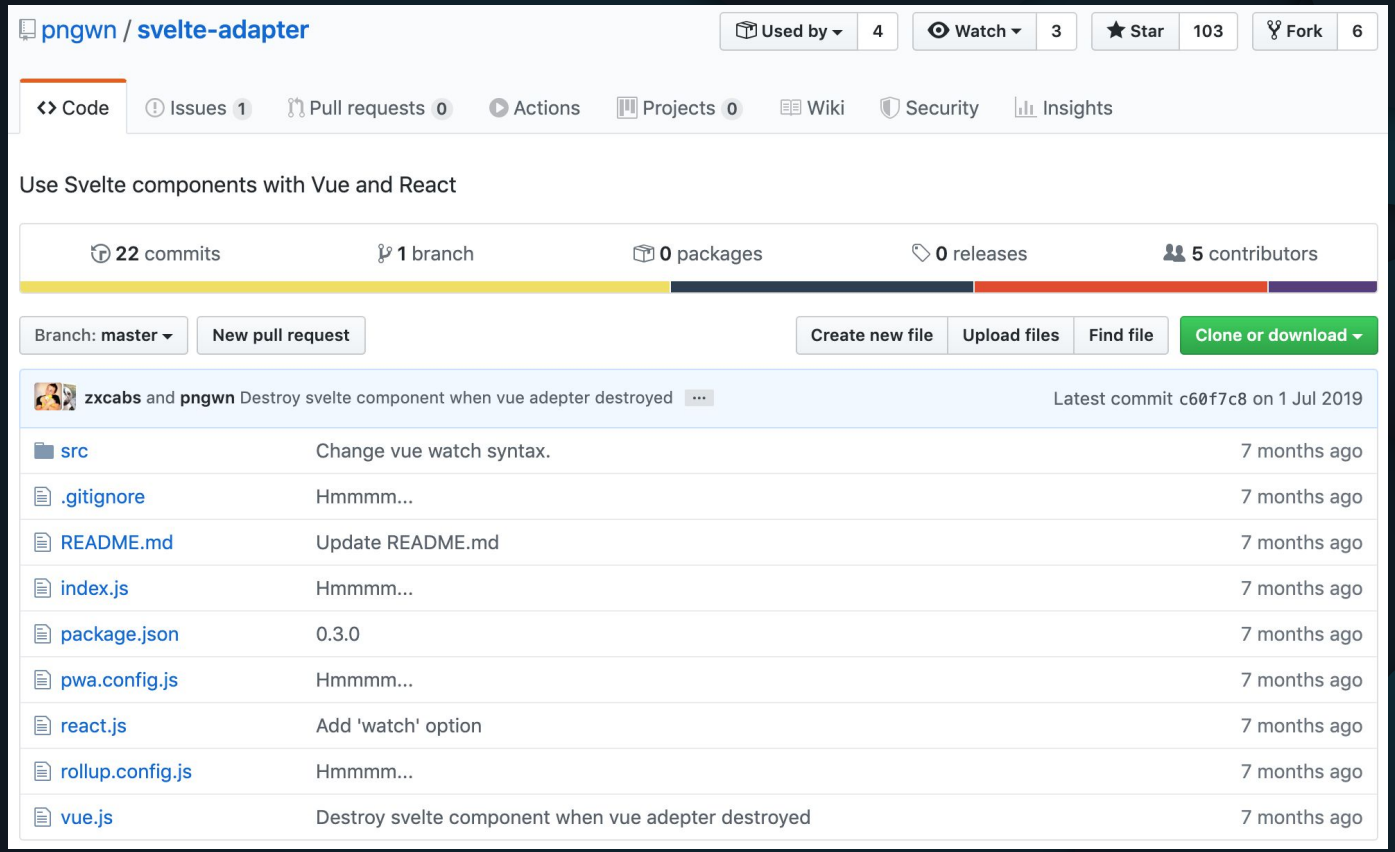
Chapter I
The Migration

The slow or gradual movement of something from one place to another.

Migration in context of UI development

A. Continue develop react app and slowly rewrite old parts to svelte.
B. Stop develop react app and start write svelte parts right into first one.


Rich-Harris / react-svelte
Used by 2
Watch 6
Star 124
Fork 9
Code
Issues 3
Pull requests 5
Actions
Projects 0
Wiki
Security
Insights
Use Svelte components inside a React app
5 commits
3 branches
0 packages
3 releases
1 contributor
View license
Branch: master
New pull request
Create new file
Upload files
Find file
Clone or download
Rich-Harris -> v1.0.2
Latest commit 10dcc68 on 21 Aug 2018
demo fix demo 17 months ago
.gitignore initial commit 17 months ago
CHANGELOG.md -> v1.0.2 17 months ago
LICENSE initial commit 17 months ago
README.md fix demo 17 months ago
index.js -> v1.0.2 17 months ago
package-lock.json initial commit 17 months ago
package.json -> v1.0.2 17 months ago


pngwn / svelte-adapter
Used by 4
Watch 3
Star 103
Fork 6
Code
Issues 1
Pull requests 0
Actions
Projects 0
Wiki
Security
Insights
Use Svelte components with Vue and React
22 commits
1 branch
0 packages
0 releases
5 contributors
Branch: master
New pull request
Create new file
Upload files
Find file
Clone or download
zxcabs and pngwn Destroy svelte component when vue adepter destroyed
Latest commit c60f7c8 on 1 Jul 2019
src Change vue watch syntax. 7 months ago
.gitignore Hmmmm... 7 months ago
README.md Update README.md 7 months ago
index.js Hmmmm... 7 months ago
package.json 0.3.0 7 months ago
pwa.config.js Hmmmm... 7 months ago
react.js Add 'watch' option 7 months ago
rollup.config.js Hmmmm... 7 months ago
vue.js Destroy svelte component when vue adepter destroyed 7 months ago

Denis Mishunov

I created Frankenstein: 3 stories of migration

Web Components
aka Custom Elements

WEB COMPONENTS

```
1 class BarCode extends HTMLElement {...}
2
3 window.customElements.define('bar-code', BarCode);
4
5
6
7 ...
8
9 <bar-code></bar-code>
10
```

WEB COMPONENTS

```
class BarCode extends HTMLElement {
  get open() {
    return this.hasAttribute('open');
  }

  set open(val) {
    if (val) {
      this.setAttribute('open', '');
    }
  }

  constructor() {
    this.addEventListener('click', () => {...})
    ...
  }

  connectedCallback() {
    ...
  }

  disconnectedCallback() {
    ...
  }

  attributeChangedCallback(attrName, oldVal, newVal) {
    ...
  }
}
```

WEB COMPONENTS

```
// Attach a shadow root to custom element

const shadowRoot = this.attachShadow({mode: 'open'});

shadowRoot.innerHTML = `
    <style>#tabs { ... }</style> <!-- styles are scoped -->

    <div>SOME SHADOW HERE</div>
`;

// Or u can use DOM API like .appendChild()
```

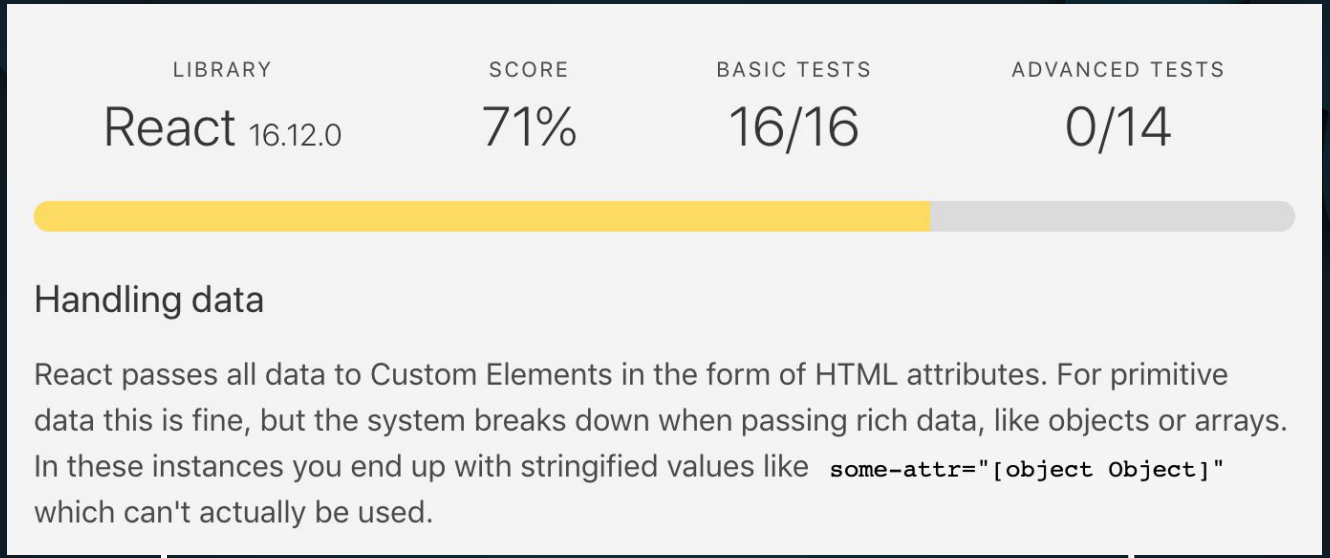
Why I don't use web components.

© Rich Harris on dev.to

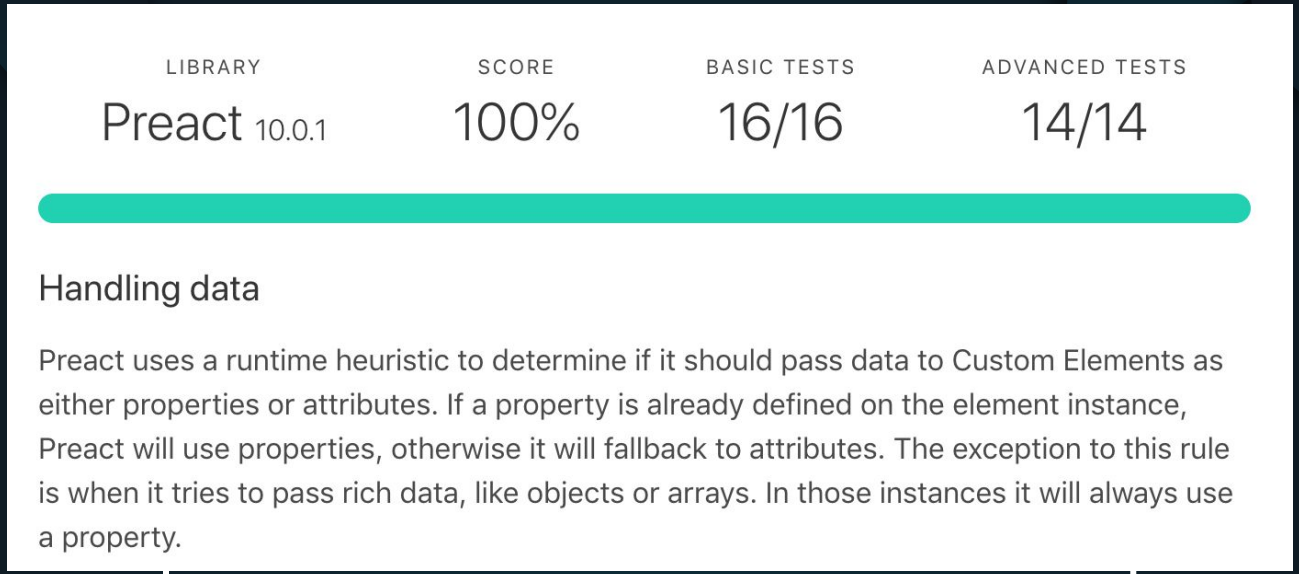
A. You need JS almost everytime.
B. CSS in JS.
C. Platform fatigue.
D. Polyfills.
E. Eager rendering.
F. Confusion between props and attributes.
G. Leaky design.
H. All those problem are solved but not in WC.

SVELTE AS WC

```svelte
<svelte:options tag="my-element">

<script>

</script>

<div>
  now it's a custom element
</div>
```



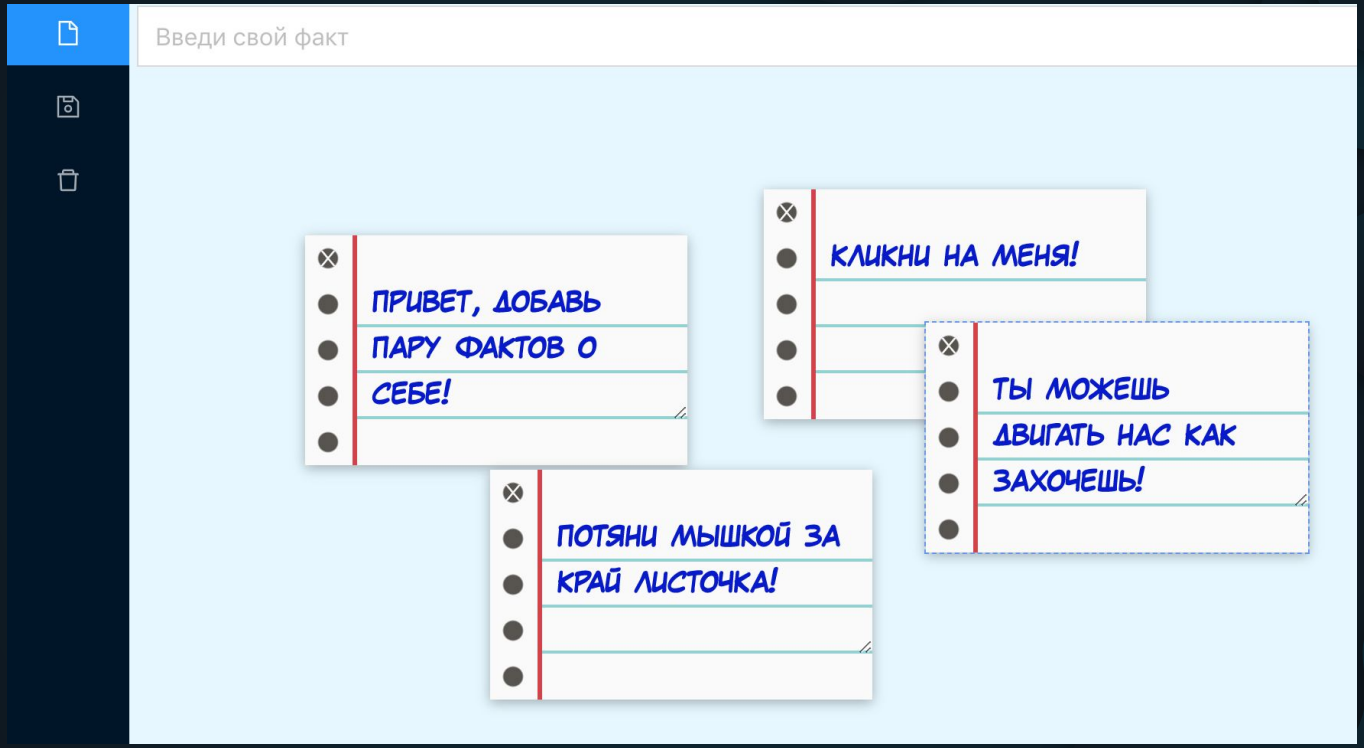
custom-elements-everywhere.com



Пора в свелтое будущее!

Chapter 2

Preparing the app

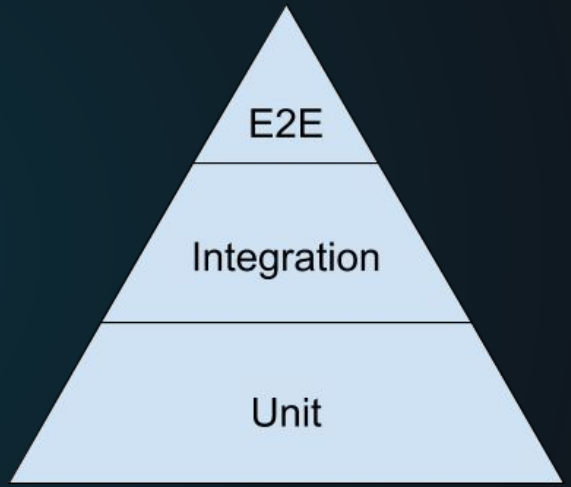

Введи свой факт
ПРИВЕТ, ДОБАВЬ ПАРУ ФАКТОВ О СЕБЕ!
КЛИКНИ НА МЕНЯ!
ТЫ МОЖЕШЬ ДВИГАТЬ НАС КАК ЗАХОЧЕШЬ!
ПОТЯНИ МЫШКОЙ ЗА КРАЙ ЛИСТОЧКА!

Decomposition

1. First level - static html components. Changes only by outer state. Atoms.
2. Second level - positioning/aligning components aka styles containers.
3. Third level - logic containers/hoc/services/api
4. Four level - pages/containers for containers

Sapper, Routing, APP level

Ughh.. tests?!



Basarat Ali Syed
Documenting application behaviours with E2E tests

CYPRESS ~~hill~~ JS

```
1 import po from './page-object';
2
3 describe('PovPage', () => {
4   beforeEach(() => {
5     cy.visit('http://localhost:8080');
6   });
7
8   it('should contains 4 default fuckts', () => {
9     cy.get(po.$fuckts).should('have.length', 4);
10  });
11
12  it('should add fuckt after filling input and press enter', () => {
13    po.addFuckt('new fuckt');
14
15    cy.get(po.$fuckts).should('have.length', 5);
16  });
17 });
18
```

CYPRESS JS

```
const PageObject = {
  $fuckts: '[data-cy-fuckt]',
  $createFucktInput: '[data-cy-create-fuckt]',
  $saveMapBtn: '[data-cy-save-map]',
  $saveMapNameInput: '[data-cy-save-map-name-input]',
  $sidebarMenuItem: '[data-cy-sidebar-menu-item]',
  $sidebarMenuItemNewMap: '[data-cy-sidebar-menu-item-new-map]',
  $sidebarMenuItemRemoveMap: '[data-cy-sidebar-menu-item-remove-map]',
  $fucktTextarea: '[data-cy-fuckt-textarea]',
  addFuckt(text) {
    cy.get('create-fuckt')
      .find('input')
      .type(text);

    cy.get('create-fuckt')
      .find('button')
      .click();
  },

  ...
```

So, why test?

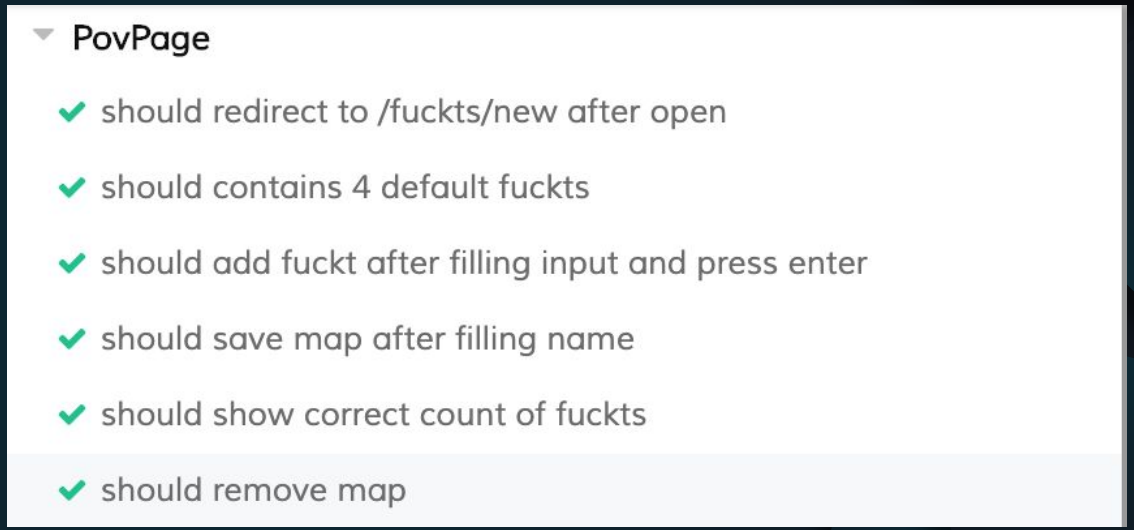
Shmapter 3

React to Preact

PREACT

```
npm i -S preact preact-compat

...

alias: {
    react: 'preact/compat',
    'react-dom/test-utils': 'preact/test-utils',
    'react-dom': 'preact/compat',
    svelte: path.resolve('node_modules', 'svelte'),
},

...


import { h } from 'preact';
```

TESTs


PovPage
should redirect to /fuckts/new after open
should contains 4 default fuckts
should add fuckt after filling input and press enter
should save map after filling name
should show correct count of fuckts
should remove map

Chapter 4

End Game

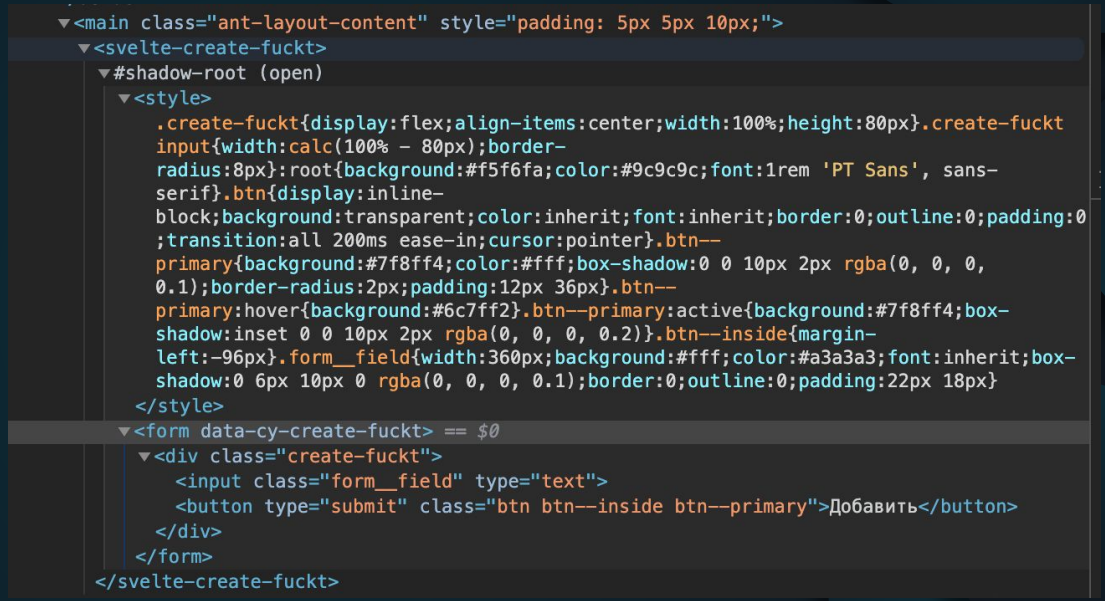
Migration

1. Rewrite 1,2,3,4 level's components to svelte and align them like in react
2. Use svelte stores if we need to manage state.
3. Get frankenstein - svelte components and pages working in react app.
4. Remove WC directives from components and get svelte free.
5. Use sapper if needed

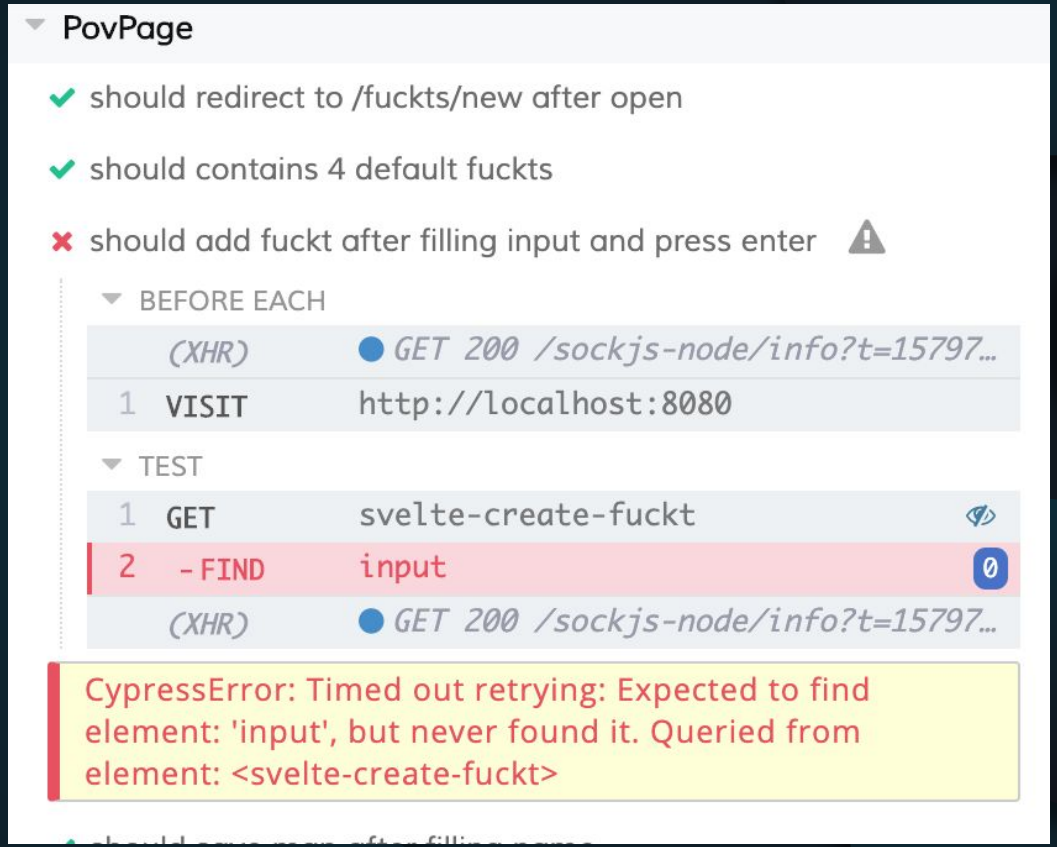
SVELTE IN REACT

```
<Content style={style.content.wrapper}>
  {/* <CreateFucktInput handleCreateFuckt={handleCreateFuckt} /> */}
  <svelte-create-fuckt handleCreateFuckt={handleCreateFuckt} />

  <DraggableBoard
    style={style}
    fuckts={fuckts}
    zoomOut={zoomOut}
    onUpdate={setFuckts}
```

SVELTE IN REACT



TESTs


PovPage
should redirect to /fuckts/new after open
should contains 4 default fuckts
should add fuckt after filling input and press enter
BEFORE EACH
(XHR) GET 200 /sockjs-node/info?t=15797…
1 VISIT http://localhost:8080
TEST
1 GET svelte-create-fuckt
2 - FIND input 0
(XHR) GET 200 /sockjs-node/info?t=15797…
CypressError: Timed out retrying: Expected to find element: 'input', but never found it. Queried from element: <svelte-create-fuckt>

CYPRESS JS

```
1 import 'cypress-shadow-dom';
2
3 addFuckt(text) {
4   cy.shadowGet('svelte-create-fuckt')
5     .shadowFind('input')
6     .shadowType(text);
7
8   cy.shadowGet('svelte-create-fuckt')
9     .shadowFind('button')
10    .shadowClick();
11 },
12
13 ...
```

That’s easy one?

Limitations

1. Your styles will break
2. If you use styles library - your styles will break and you need rewrite it in svelte
3. If you forgot to add WC directive - your styles will break

But...

1. Confident structure but native JS.
2. No overhead.
3. Tru reactive.
4. Want to migrate from other framework - just skip step with preact.

Do experiments

and do those a lot!

THANKS!