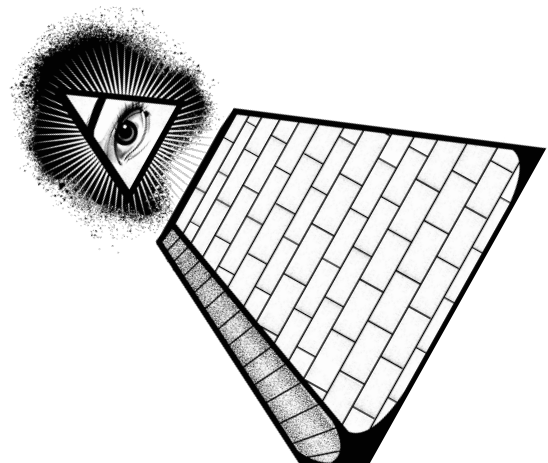
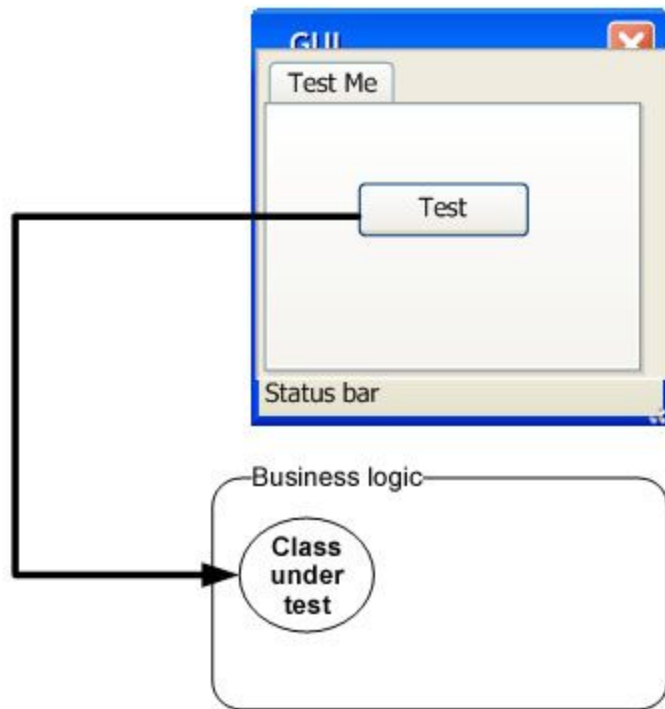


Unit-testing. What and Why.

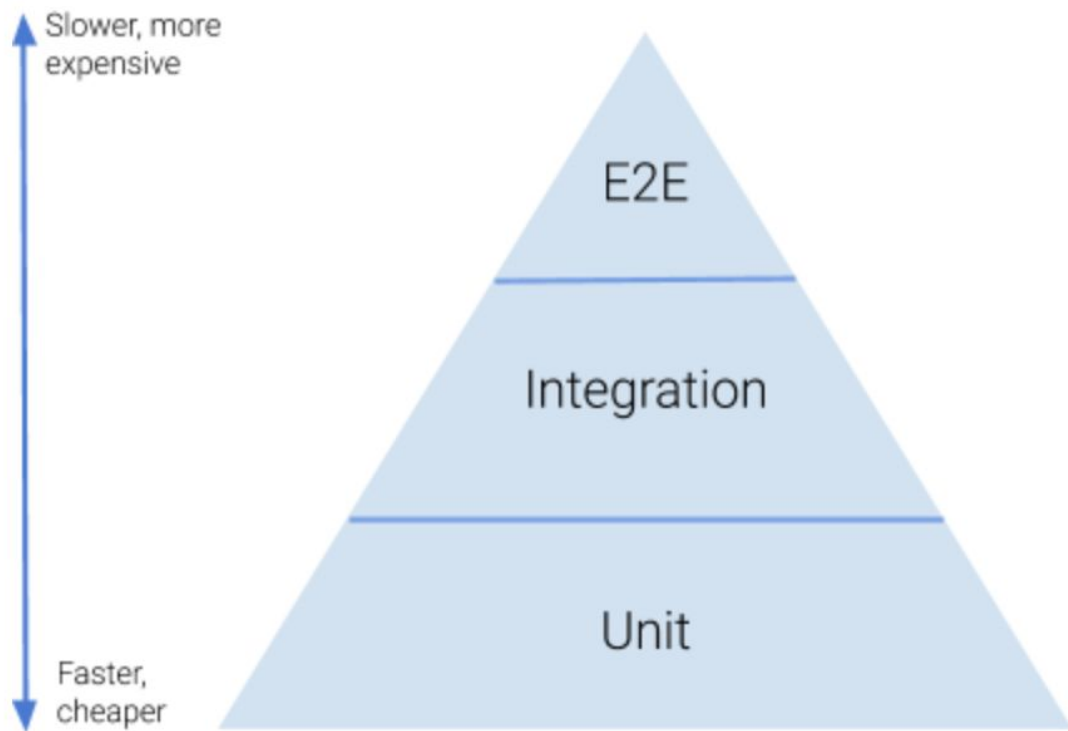
Вадим, Sputnik
telegram: [@hadoocken](https://t.me/hadoocken)



Basics.



Basics.



Basics.



Oh kapibara, here we go again.



Equal rights for TESTS!

- KISS - Keep it simple, stupid
- DRY - Don't repeat yourself
- YAGNI - You ain't gonna need it

AAA yourself. © cool sam

```
// arrange  
var calc = new Calculator();  
  
// act  
var res = calc.Sum(2,5);  
  
// assert  
Assert.AreEqual(7, res);
```

Tools

- Test runner (mocha, karma)
- Assert Library (chai, jasmine)
- ???

describe it

```
1 describe("new ecma possibilities", () => {
2     describe("function pow", () => {
3         it("2 in 3's power equals 8", () => {
4             assert(2**3 === 8);
5         });
6
7         it("2 in 5's power equals 32", () => {
8             assert(2**5 === 32);
9         });
10
11        it("2 in 6's power equals 64", () => {
12            assert.equal(2**6, 128);
13        });
14    });
15 });
```

describe it

new ecma possibilities

function pow

- ✓ 2 in 3's power equals 8
- ✓ 2 in 5's power equals 32
- ✗ 2 in 6's power equals 64

```
AssertionError: expected 64 to equal 128
```

```
at context.<anonymous> (file:///Users/vtsaregorodtsev/Documents/projects/tests/test.js:12:20)
at callFn (https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:4496:21)
at Test.Runnable.run (https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:4489:7)
at Runner.runTest (https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:4892:10)
at https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:4970:12
at next (https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:4817:14)
at https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:4827:7
at next (https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:4766:23)
at https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:4794:5
at timeslice (https://cdnjs.cloudflare.com/ajax/libs/mocha/2.1.0/mocha.js:6218:27)
```

Done it

```
1 describe("function pow", () => {  
2     it("2 in 3's power equals 8 in async way", (done) => {  
3         setTimeout(() => {  
4             assert(2**3 === 8);  
5  
6             done();  
7         }, 1500);  
8     });  
9 });
```

Done it

function pow

✓ 2 in 3's power equals 8 in async way 1501ms

Moke it

```
1  describe("function pow", () => {
2      before(() => {
3          const myGreatFetch = sinon.stub(window, "fetch");
4
5          myGreatFetch.returns(new Promise(resolve => {
6              |       setTimeout(() => resolve(8), 1500);
7          }));
8      });
9
10     it("2 in 3's power equals 8 in fake async way", async (done) => {
11         const answer = await fetch('who/knows/the/answer');
12
13         assert.equal(answer, 2**3);
14         done();
15     });
16 };
```

Moke it

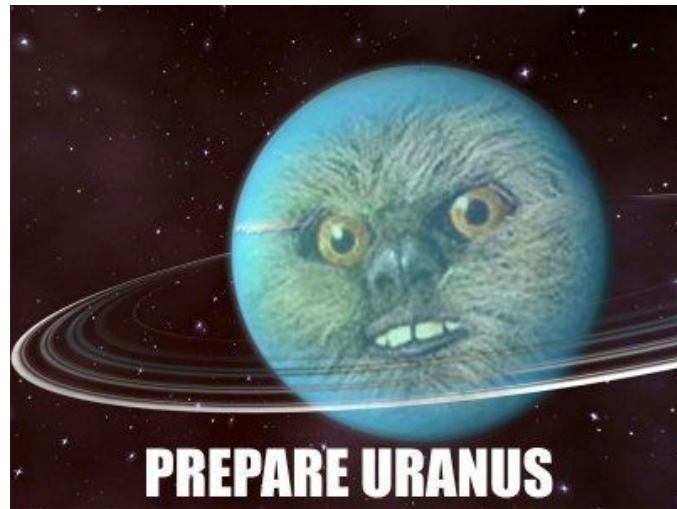
function pow

✓ 2 in 3's power equals 8 in fake async way 1502ms

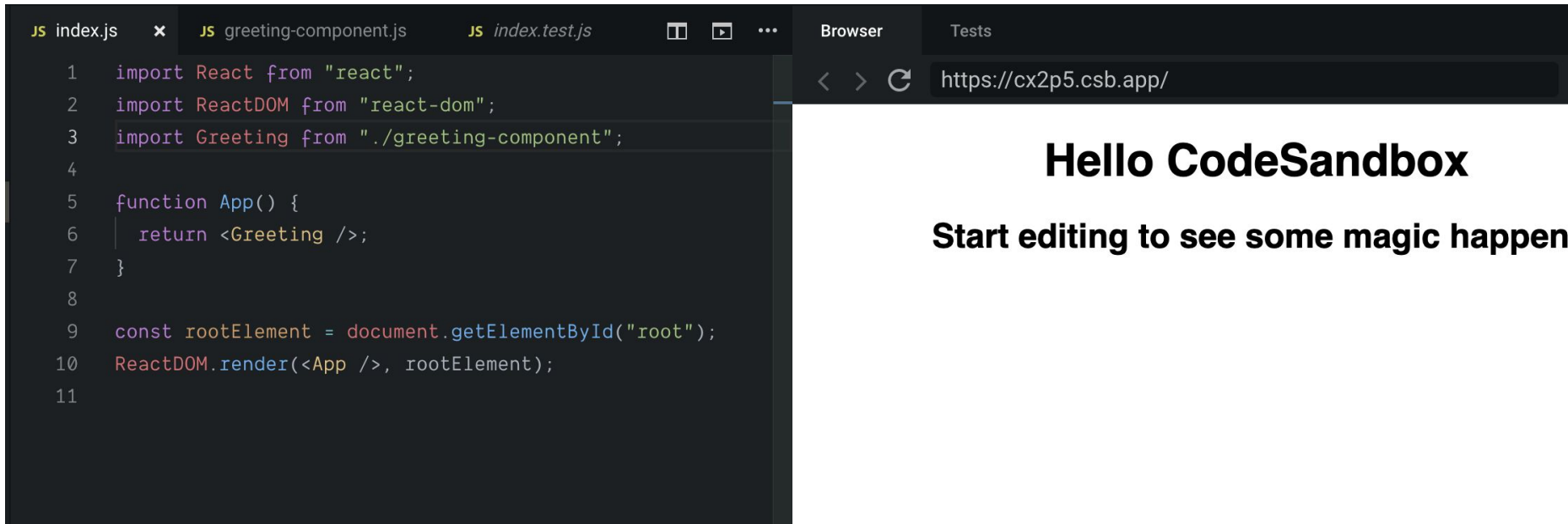
Test

Необходимо протестировать функцию, которая на вход принимает строку, которая является именем, и выводит **"Welcome back, %Имя%"**, если строка не передается, то передается fallbackKey вторым параметром и функция пытается найти имя в **localStorage** под этим ключом. Если такого ключа не находится, то функция выводит **"Welcome back, Anonymous"**

<http://tiny.cc/z4zudz>



Jest do it



The screenshot displays a CodeSandbox workspace. On the left, a code editor shows three files: `index.js`, `greeting-component.js`, and `index.test.js`. The `index.js` file is active, showing the following code:

```
1 import React from "react";
2 import ReactDOM from "react-dom";
3 import Greeting from "../greeting-component";
4
5 function App() {
6   return <Greeting />;
7 }
8
9 const rootElement = document.getElementById("root");
10 ReactDOM.render(<App />, rootElement);
11
```

On the right, a browser window is open to the URL `https://cx2p5.csb.app/`. The browser tab is labeled "Tests".

Hello CodeSandbox

Start editing to see some magic happen

Jest do it

JS index.js

JS greeting-component.js

styles.css x

⏏

▶

⋮

Browser

Tests

```
1 .App {
2   font-family: sans-serif;
3   text-align: center;
4 }
5
6 .App:hover {
7   background: red;
8 }
9
```

< > ↺

https://cx2p5.csb.app/

Hello CodeSandbox

Start editing to see some magic happen

```
4
5 function App() {
6   return <Greeting onGreetingHover={() => {}} />;
7 }
8
```

Jest do it

```
JS index.js    JS index.test.js    JS greeting-component.js x    # styles.css    [ ] [▶] ...

1  import React, { Component } from "react";
2
3  import "../styles.css";
4
5  export default class Greeting extends Component {
6    render() {
7      return (
8        <div onMouseEnter={this.props.onGreetingHover} className="App">
9          <h1>Hello CodeSandbox</h1>
10         <h2>Start editing to see some magic happen!</h2>
11        </div>
12      );
13    }
14  }
15
```

Jest do it

JS index.js

JS index.test.js x

JS greeting-component.js

styles.css

⏏

▶

⋮

Browser

Tests

```
1 // setup testing
2 import React from "react";
3 import { configure, shallow } from "enzyme";
4 import Adapter from "enzyme-adapter-react-16";
5 import Greeting from "../greeting-component";
6
7 configure({ adapter: new Adapter() });
8
9 describe("greeting component", () => {
10   test("chnages color on hover", () => {
11     const fakeFn = jest.fn();
12     const greeting = shallow(<Greeting onGreetingHover={fakeFn} />);
13
14     greeting.find(".App").simulate("mouseenter");
15
16     expect(fakeFn).toHaveBeenCalled();
17   });
18 });
19
```

Test Suites 1 passed 1 total 7ms ↺ ▶

✓ /src/index.test.js

Test Summary 1 passed 2 total

There are no failing tests, congratulations!

Test

Необходимо добавить новый тест, который бы покрыл кейс с кликом на компоненте (При каждом клике текст компонента меняется).

В компоненте также есть баг, который желательно найти.

<http://tiny.cc/d6zudz>

