Snapshot

A Painless JavaScript Testing

Timo 王權

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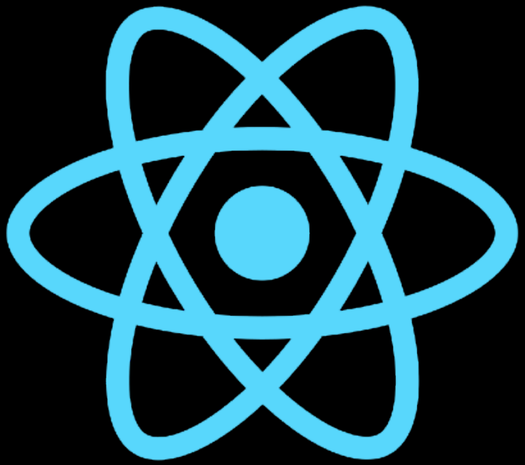
Prerequisites



```
// file: sum.js

export default (a, b) => a + b;
```

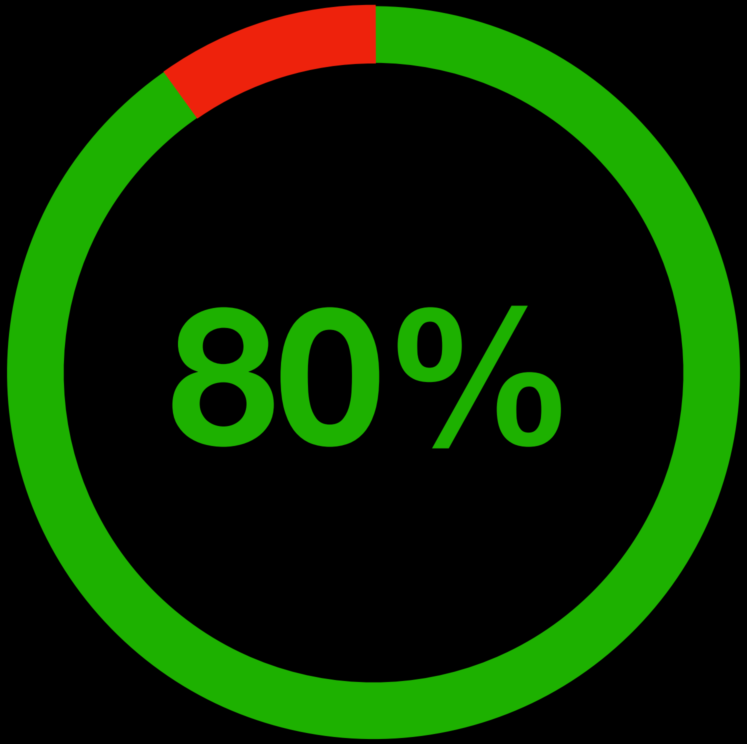
```
// file: sum.test.js

import sum from './sum';

it('should sum 2 numbers', () => {
    const result = sum(1, 2);

    expect(result).to.equal(3);
});
```

Why test?

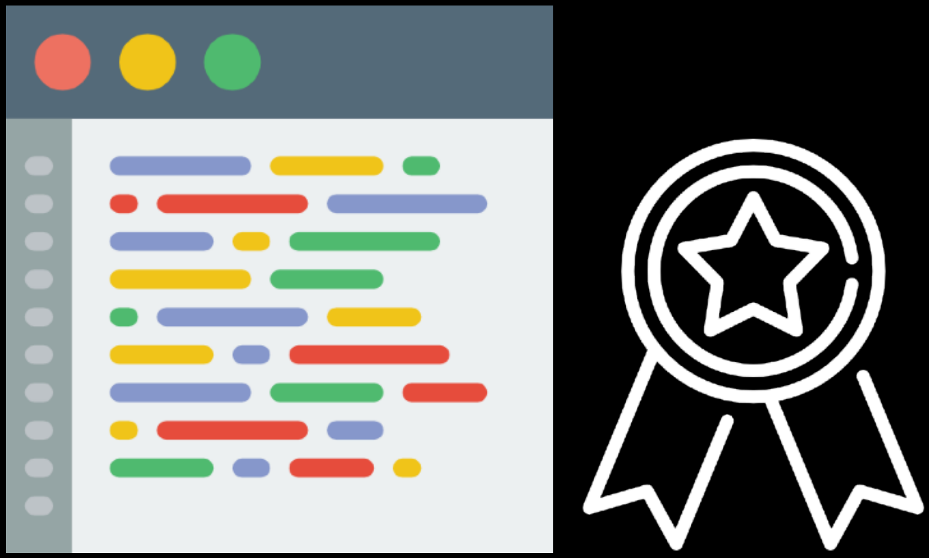


Code Coverage

Test, plz

Can
you add some tests
please?

y20



Code Quality

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Paranoia

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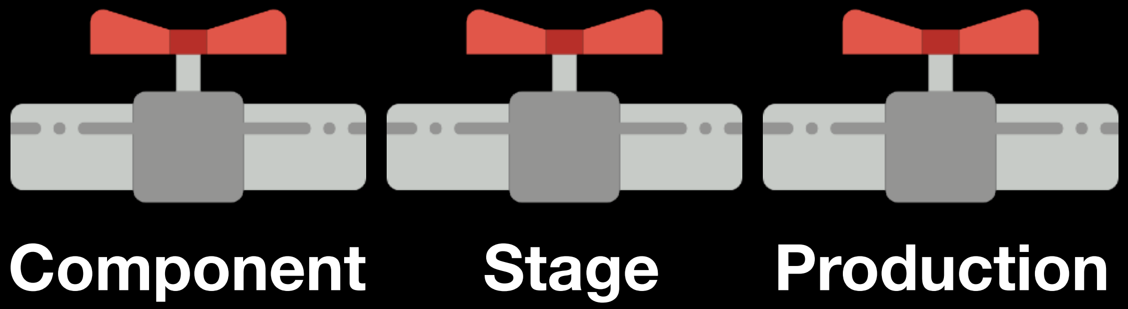
Protection



Continuous Delivery Pipeline

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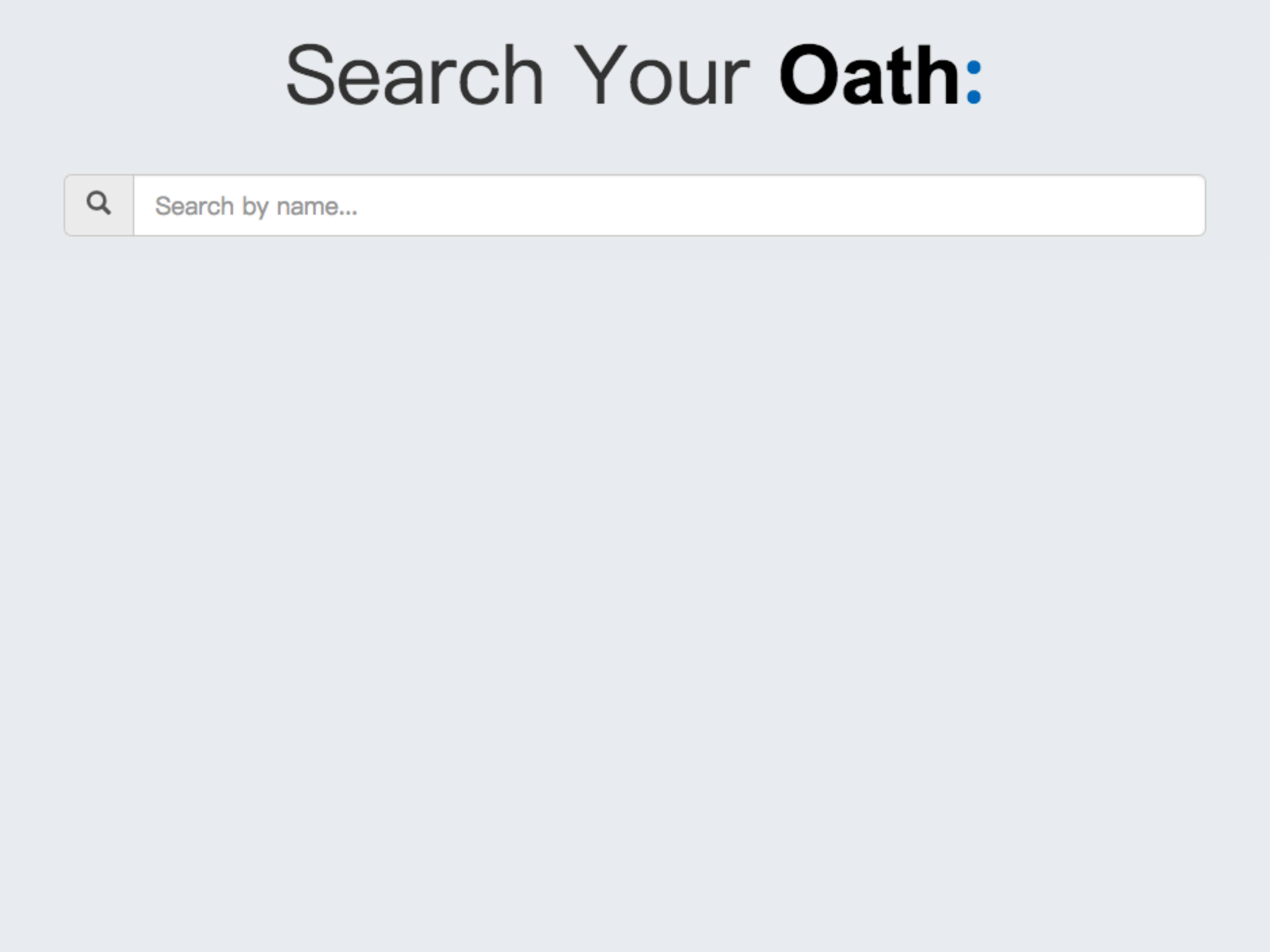
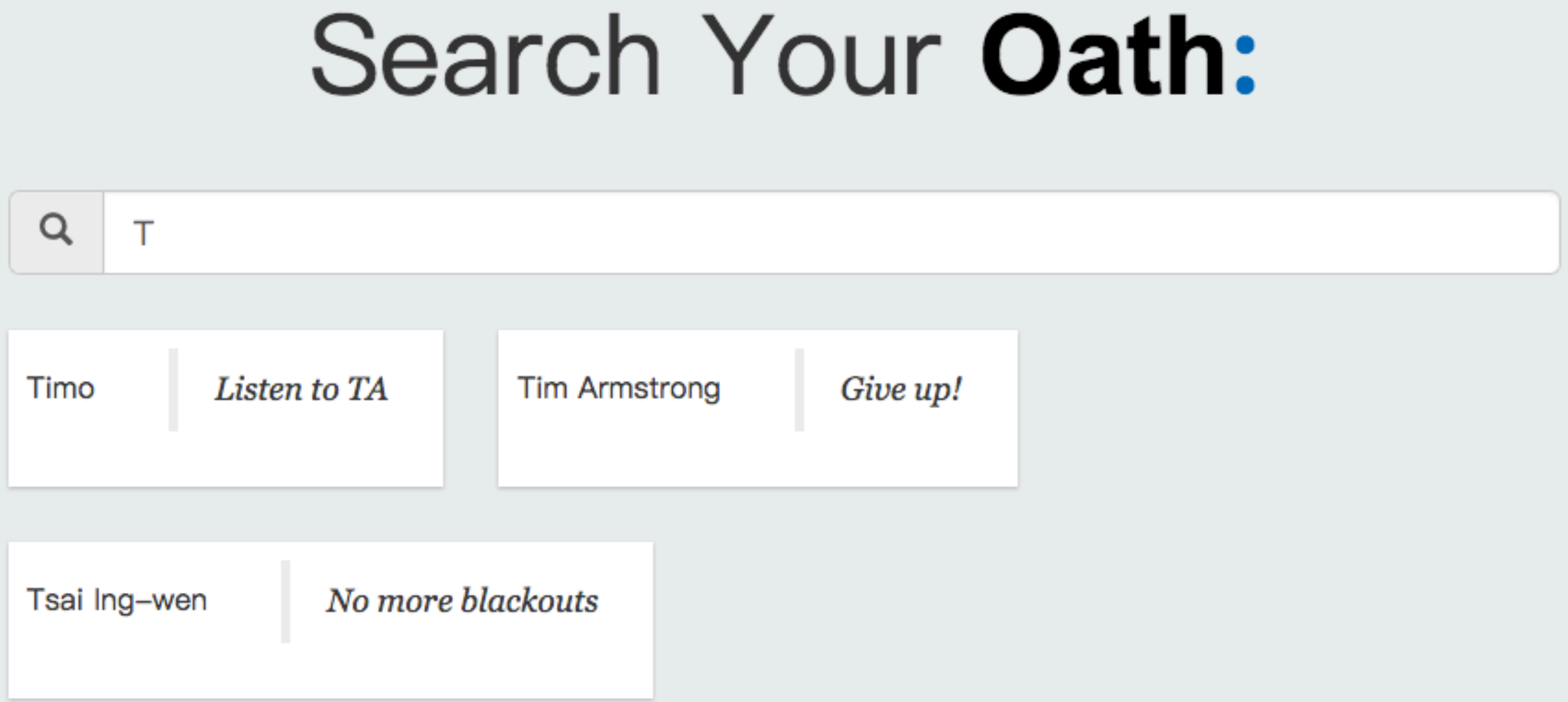
How we write tests today?



Search Your **Oath**:



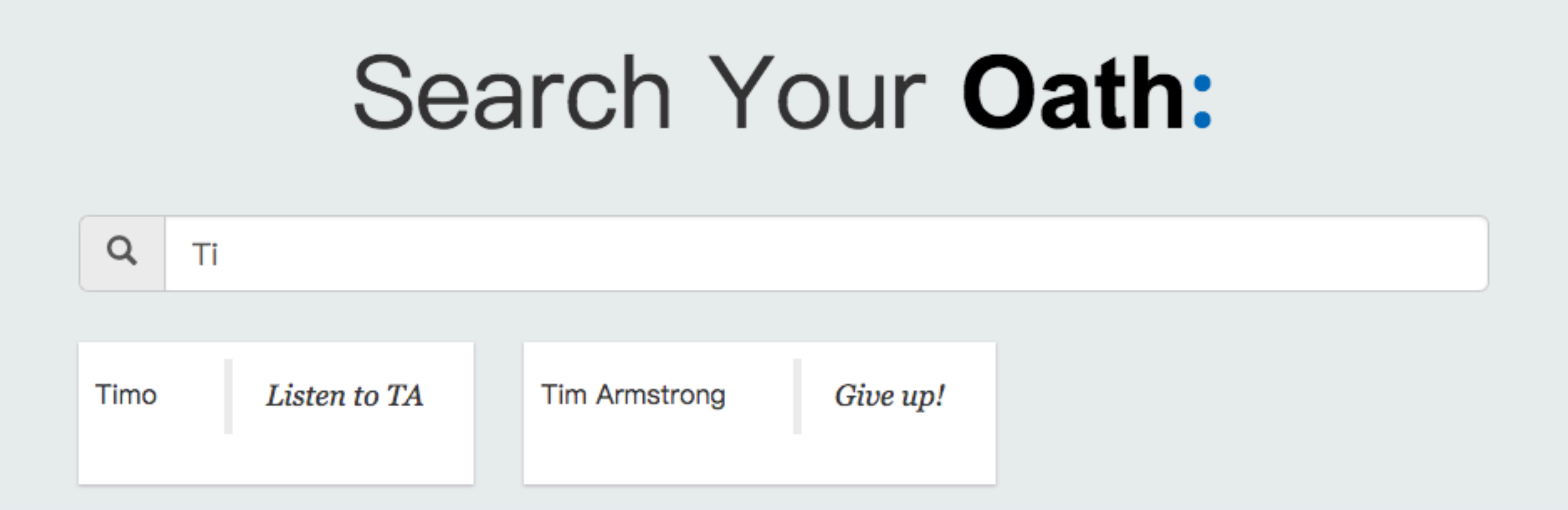
Search Your **Oath**:

T

Timo | *Listen to TA*

Tim Armstrong | *Give up!*

Tsai Ing–wen | *No more blackouts*



Search Your **Oath**:

Ti

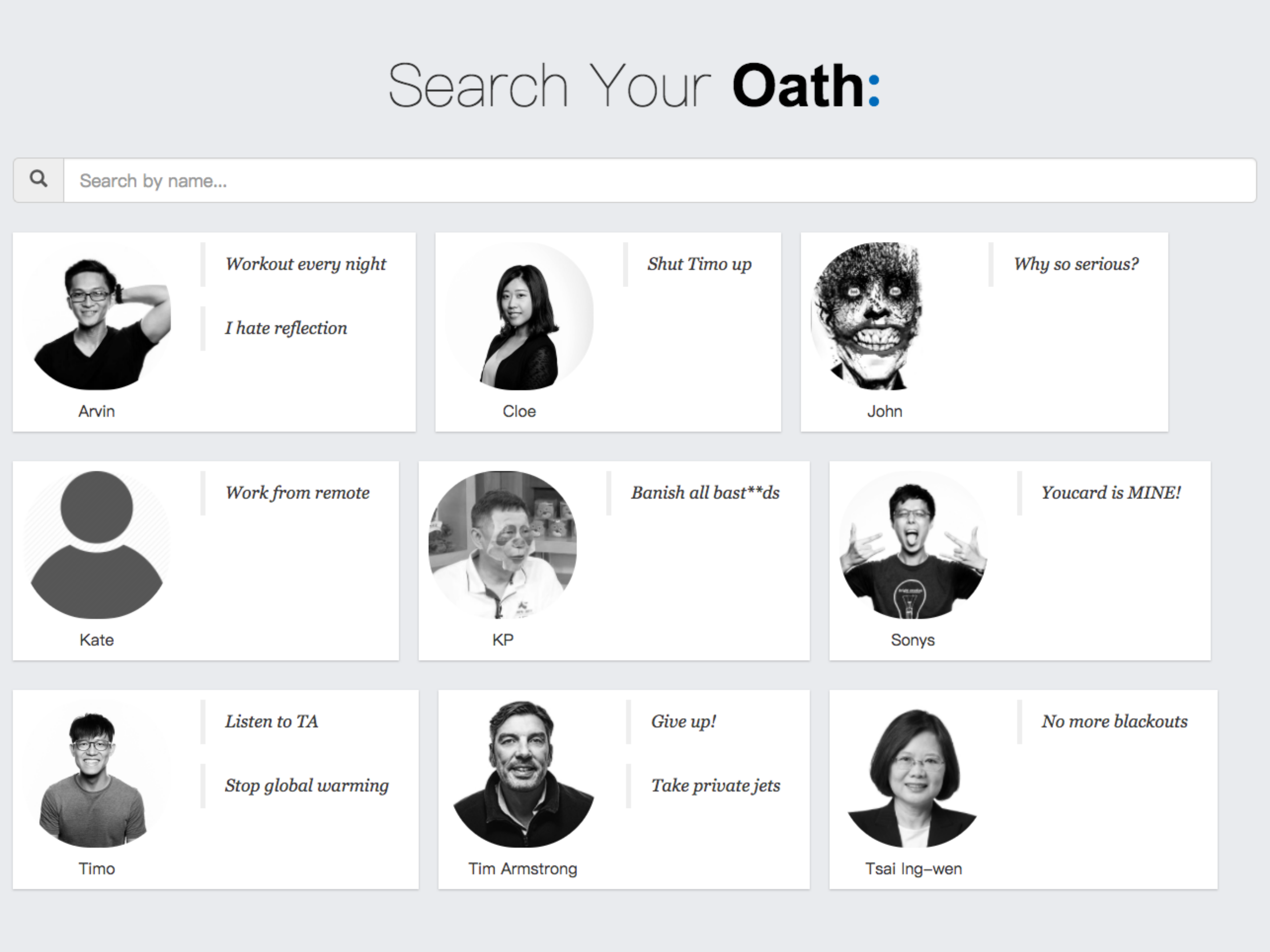
Timo | *Listen to TA*

Tim Armstrong | *Give up!*

```
/* data format:
    {
        person1: oath1,
        person2: oath2,
        ...
    }
*/
function searchOathData(query) {
    const data = someApiCall(query);
    ...
    return data;
}
```

```
const oathDb = {
    Arvin: 'Workout every night',
    Cloe: 'Shut Timo up',
    John: 'Why so serious?',
    Kate: 'Work from remote',
    Sonys: 'Youcard is MINE!',
    Timo: 'Listen to TA',
    'Tim Armstrong': 'Give up!',
    'Tsai Ing-wen': 'No more blackouts'
};



it('should return names starting with A’, () => {

    const oath = searchOathData(‘A');

    expect(oath).to.deep.equal({
        Arvin: 'Workout every night'
    });
});
```

```
const oathDb = {
    Arvin: 'Workout every night',
    Cloe: 'Shut Timo up',
    John: 'Why so serious?',
    Kate: 'Work from remote',
    Sonys: 'Youcard is MINE!',
    Timo: 'Listen to TA',
    'Tim Armstrong': 'Give up!',
    'Tsai Ing-wen': 'No more blackouts'
};


it('should return name starting with T', () => {

    const oath = searchOathData(’T');

    expect(oath).to.deep.equal({
        Timo: 'Listen to TA',
        'Tim Armstrong': 'Give up!',
        'Tsai Ing-wen': 'No more blackouts'
    });
});
```



Search Your **Oath:**

Arvin

Workout every night

I hate reflection

Cloe

Shut Timo up

John

Why so serious?

Kate

Work from remote

KP

*Banish all bast**ds*

Sonys

Youcard is MINE!

Timo

Listen to TA

Stop global warming

Tim Armstrong

Give up!

Take private jets

Tsai Ing-wen

No more blackouts

```
const oathDb = {
    Arvin: {
        image: 'arvin.png',
        oath: ['Workout every night', 'I hate reflection']
    },
    Cloe: {
        image: 'cloe.jpg',
        oath: ['Shut Timo up']
    },
    John: {
        image: 'john.png',
        oath: ['Why so serious?']
    },
    Kate: {
        oath: ['Work from remote']
    },
    ...
    Sonys: {
        image: 'sonys.jpg',
        oath: ['Youcard is MINE!']
    },
    Timo: {
        image: 'timo.jpg',
        oath: ['Listen to TA', ‘Stop global warming’]
    },
    'Tim Armstrong': {
        image: 'tim-armstrong.jpg',
        oath: ['Give up!', 'Take private jets']
    },
    'Tsai Ing-wen': {
        image: 'tsai-ing-wen.jpg',
        oath: ['No more blackouts']
    }
};
```

```
it('should return name starting with T', () => {

    const oath = searchOathData(’T');

    expect(oath).to.deep.equal({
        Timo: 'Listen to TA',
        'Tim Armstrong': 'Give up!',
        'Tsai Ing-wen': 'No more blackouts'
    });
});
```

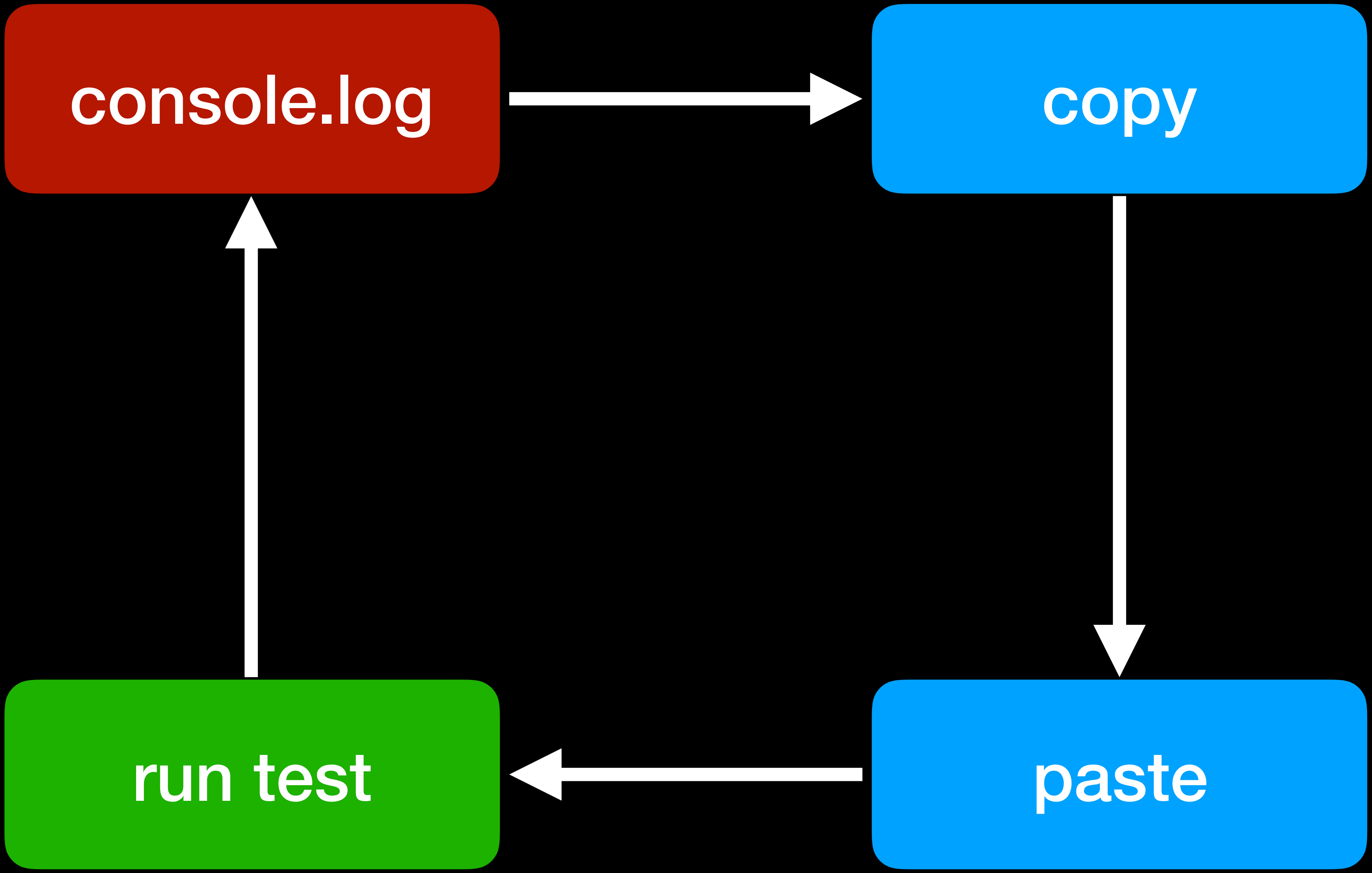
```
it('should return name starting with T', () => {

    const oath = searchOathData(’T');

    console.log(oath);
});
```

```
it('should return name starting with T', () => {

    const oath = searchOathData(’T');

    expect(oath).to.deep.equal({
        Timo: {
            image: 'timo.jpg',
            oath: ['Listen to TA', 'Must Be Crazy']
        },
        'Tim Armstrong': {
            image: 'tim-armstrong.jpg',
            oath: ['Give up!']
        },
        'Tsai Ing-wen': {
            image: ‘tsai-ing-wen.jpg',
            oath: ['No more blackouts']
        }
    });
});
```

```
it('should return name starting with T', () => {
    ...
});
```

```
it('should return name starting with Ti’, () => {
    ...
});
```

```
it('should return name starting with Tim’, () => {
    ...
});
```

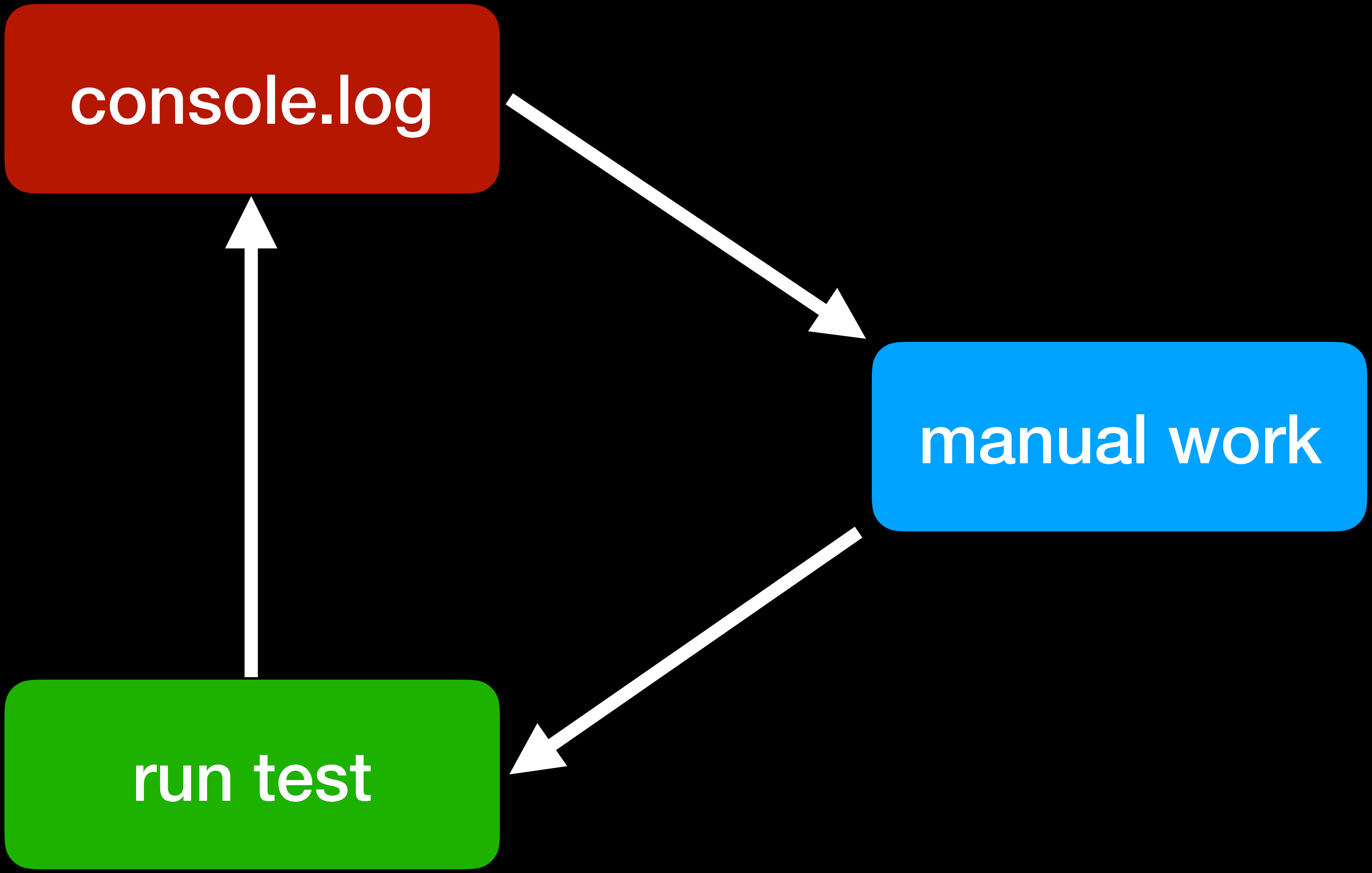


console.log

copy

paste

run test

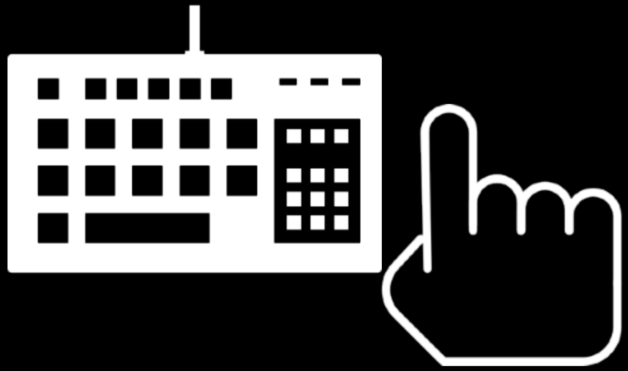


console.log

manual work

run test

Tedious



Manual

Extra code to maintain

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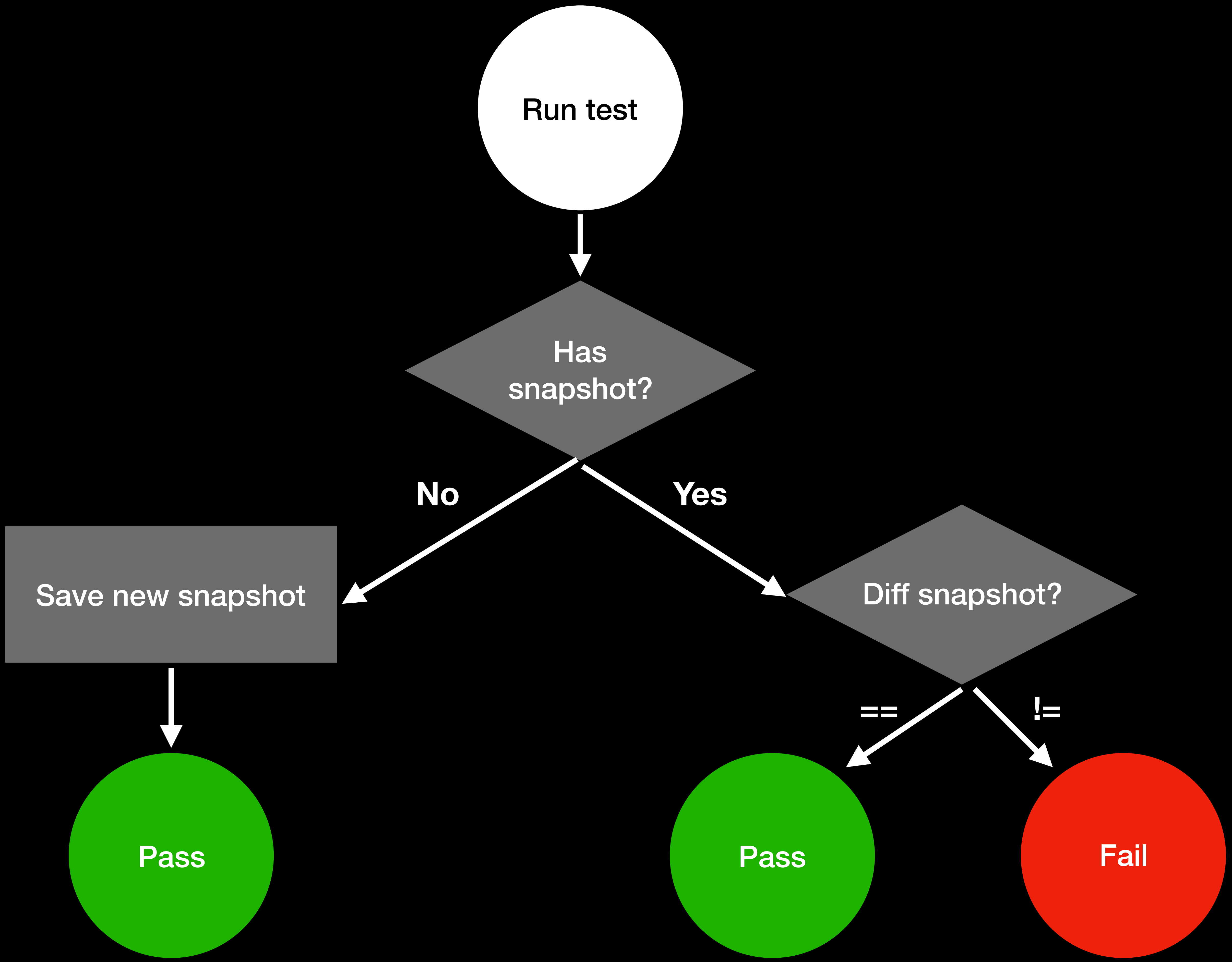
Snapshot


Run test
Has snapshot?
No
Yes
Save new snapshot
Diff snapshot?
==
!=
Pass
Pass
Fail

Snapshot Tools

```
npm i --save-dev jest enzyme enzyme-to-json
npm i --save-dev jest enzyme enzyme-to-json
```

Run

```
it('should ...', () => {
    expect(...).toBe(...);
});
```

Snap

```
it('should ...', () => {
    expect(...).toMatchSnapshot();
});
```

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```
npm i --save-dev jest enzyme enzyme-to-json
```

Run

```
$ jest

$ jest src/sum.test.js
```

```
npm i --save-dev jest enzyme enzyme-to-json
```

```
// file: sum.test.js
it('should sum 2 numbers snapshot', () => {
    expect(sum(1, 2)).toMatchSnapshot();
});
```

PASS

‘./__snapshots__/sum.test.js’

```
exports[`should sum 2 numbers snapshot 1`] = `3`;
```

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```
export default function sum(a, b) {
    return a + b;
}
```

```
export default function sum(a, b) {
    return a + b + 1;
}
```

```
npm i --save-dev jest enzyme enzyme-to-json
```

```
// file: sum.test.js
it('should sum 2 numbers snapshot', () => {
    expect(sum(1, 2)).toMatchSnapshot();
});
```

📷 FAIL

```
 FAIL  src/sum.test.js
  ● should sum 2 numbers snapshot

    expect(value).toMatchSnapshot()

    Received value does not match stored snapshot 1.

    - 3
    + 4
 FAIL  src/sum.test.js
  ● should sum 2 numbers snapshot

    expect(value).toMatchSnapshot()

    Received value does not match stored snapshot 1.

    - 3
    + 4
```

```
$ jest -u src/sum.test.js
$ jest -u src/sum.test.js
```

```
FAIL
```

```
$ jest -u src/sum.test.js

PASS
```

```
$ jest -u src/sum.test.js
```

PASS

📄 ‘./__snapshots__/sum.test.js’

```
exports[`should sum 2 numbers snapshot 1`] = `4`;
```

```
npm i --save-dev jest enzyme enzyme-to-json
```

Run

```
it('should ...', () => {
    expect(...).toBe(...);
});
```

Snap

```
it('should ...', () => {
    expect(...).toMatchSnapshot();
});
```

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```
npm i --save-dev jest enzyme enzyme-to-json
```

```
import React from 'react';
import { render } from ‘enzyme';


it('should render react div DOM', () => {
    const div = render(
        <div className="div-class">
            <span className=“span-class">
                I love Oath
            </span>
        </div>
    );

    console.log(div);
});
```

```
npm i --save-dev jest enzyme enzyme-to-json
```

```
console.log(div);

{
    '0': {
        type: 'root',
        name: 'root',
        attribs: {},
        children: [
            [Object]
        ],
        next: null,
        prev: null,
        parent: null
    },
    options: {
        withDomLvl1: true,
        normalizeWhitespace: false,
        xmlMode: false,
        decodeEntities: true
    },
    length: 1,
    _root: [Circular]
}
```

```
npm i --save-dev jest enzyme enzyme-to-json
```

```
import React from 'react';
import { render } from 'enzyme';
import enzymeSerializer from 'enzyme-to-json/serializer';

expect.addSnapshotSerializer(enzymeSerializer);

it('should render react div DOM', () => {
    const div = render(
        <div className="div-class">
            <span className=“span-class">
                I love Oath
            </span>
        </div>
    );

    expect(div).toMatchSnapshot();
});
```

```
<div className="div-class">
    <span className=“span-class">
        I love Oath
    </span>
</div>
```

‘./__snapshots__/Test.test.js’

```
exports[`should render react div DOM 1`] = `
<div
  class="div-class"
>
  <span
    class="span-class"
  >
    I love Oath
  </span>
</div>
`;
```

Live Demo

x 3

Tedious

Manual

Extra code to maintain

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Dynamic/Interactive tests

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```
const wrapper = shallow(<Foo />);

wrapper.setState({ name: 'bar' });
wrapper.setProps({ name: 'bar' });
wrapper.setContext({ name: 'bar' });
```

```
it('should ...', () => {
    expect(...).to.be.a(...);
    expect(...).to.equal(...);
    expect(...).to.be.some.test.that.i.hate.to.write(...);
});
```

```
it('should ...', () => {
    expect(...).toMatchSnapshot();
});
```

☺

FAQ / Q&A

1

```
exports[`should return name starting with Tim Armstrong 1`] = `
Array [
    Object {
        "info": Object {
            "image": "tim-armstrong.jpg",
            "oath": Array [
                "Give up!",
                "Take private jets",
            ],
        },
        "name": "Tim Armstrong",
    },
]
`;
```

Prettify snapshot files ?

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1

```
exports[`should return name starting with Tim Armstrong 1`] = `
Array [
   {
       "name": "Tim Armstrong",
       "image": "tim-armstrong.jpg",
       "oath": [“Give up!”, "Take private jets"],
   },
]
`;
```

Prettify snapshot files ?

✓

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1

```
import yourSerializer from ‘./yourSerializer’;

expect.addSnapshotSerializer(yourSerializer);
```

Customize your serializer

2

`‘./__snapshots__/*.snap’`

gitignore this folder ?

✗

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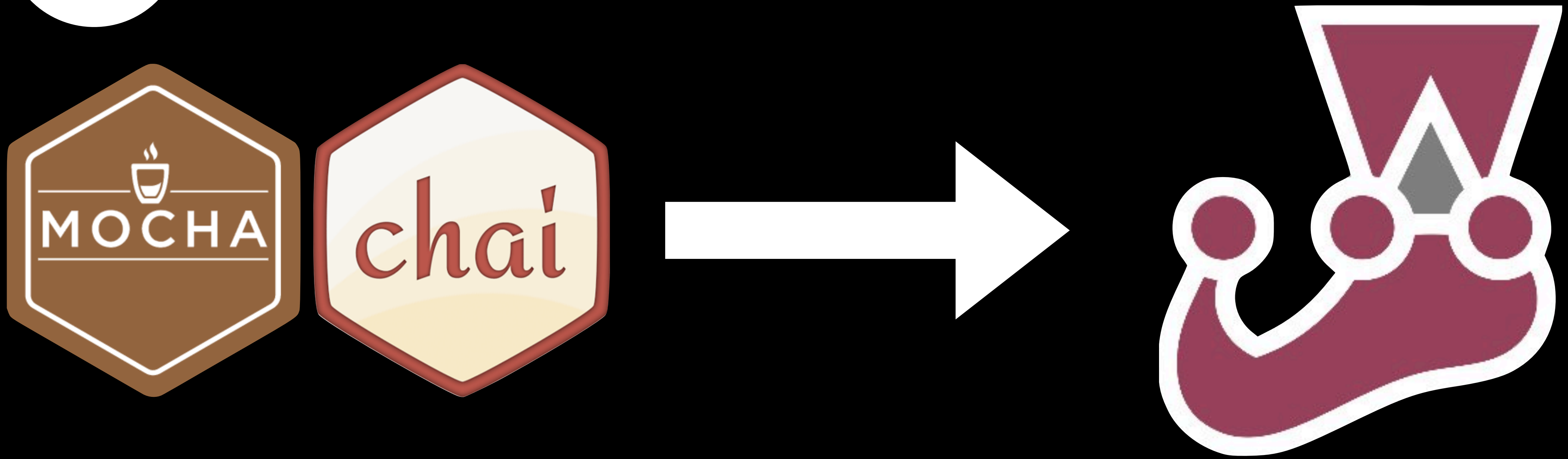
3



Painless Migration?

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```
$ npm i create-react-app -g

$ create-react-app snapshot && \

> cd snapshot/ && \

> npm run eject && \

> npm i enzyme enzyme-to-json --save-dev
```