

# *UNIT & INTEGRATION TESTING WITH JEST*

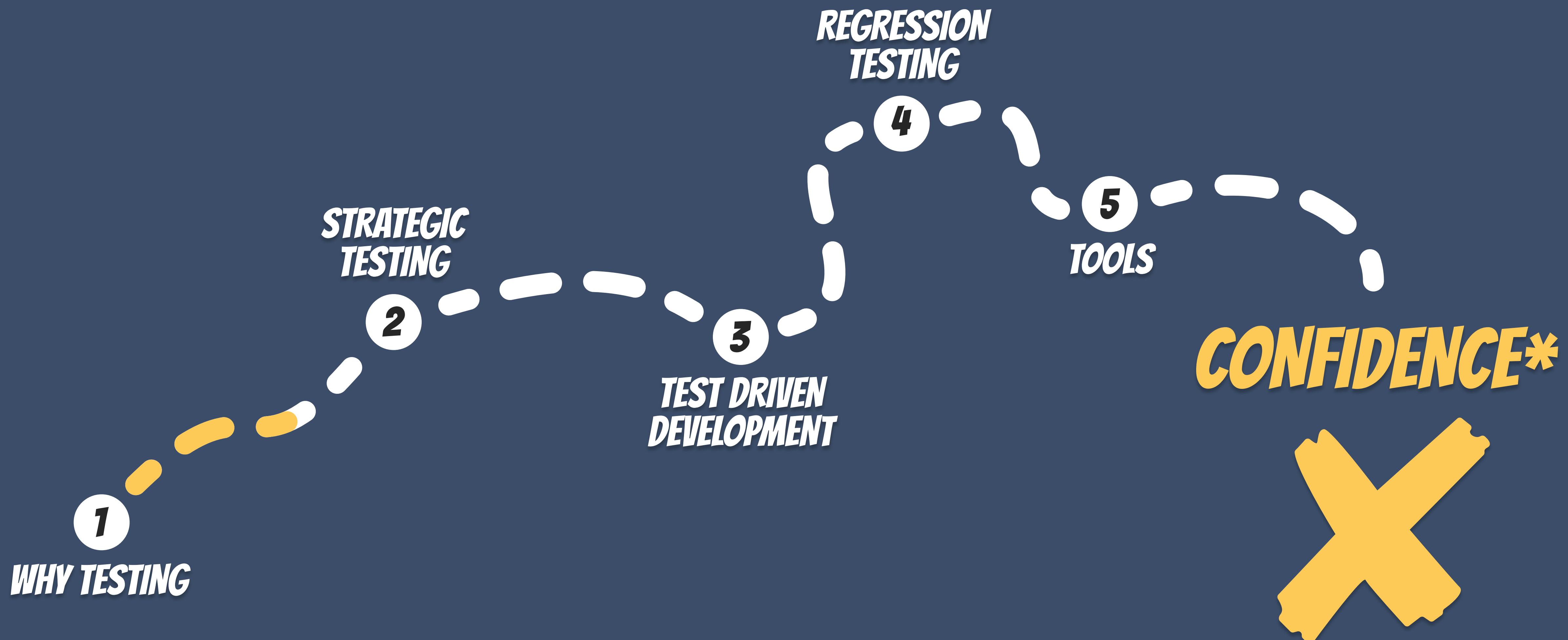
*W8D1*



**WHY DO WE TEST?**

**BECAUSE IT GIVES US  
CONFIDENCE IN OUR CODE!**

# OUR PATH TO **CONFIDENCE**



# GUIDING PRINCIPLE

*THE MORE YOUR TESTS RESEMBLE  
THE WAY YOUR SOFTWARE IS USED,  
THE MORE CONFIDENCE  
THEY CAN GIVE YOU.*

# ***TOOLS*** vs. ***TESTING***

# **STRATEGIC TESTING**



*The Addison-Wesley Signature Series*

# TEST-DRIVEN DEVELOPMENT

BY EXAMPLE

KENT BECK

TEST-DRIVEN DEVELOPMENT

KENT BECK  
Flat-Boat Books



WHAT IS  
REGRESSION  
TESTING?

TOOLS  
LIKE



→ **QUESTIONS?** ←

# ***FOLLOW THE RULES***

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- 1) ONLY WRITE CODE IF A TEST FAILS\***
- 2) ELIMINATE DUPLICATION**

*\*minimal code necessary to pass the test*

# TOOLS LIKE

@testing-library



/react



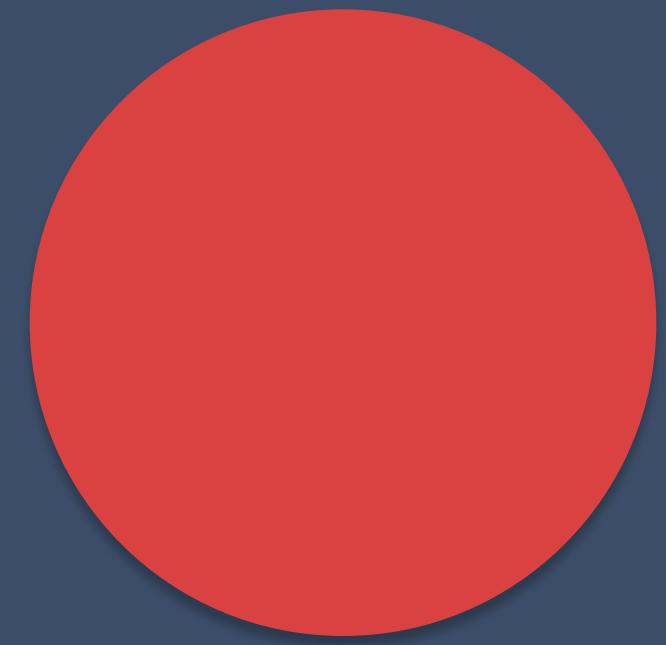
/react-hooks



/dom

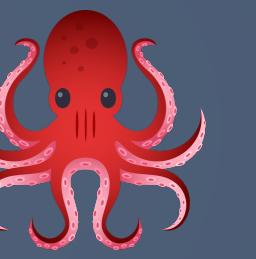


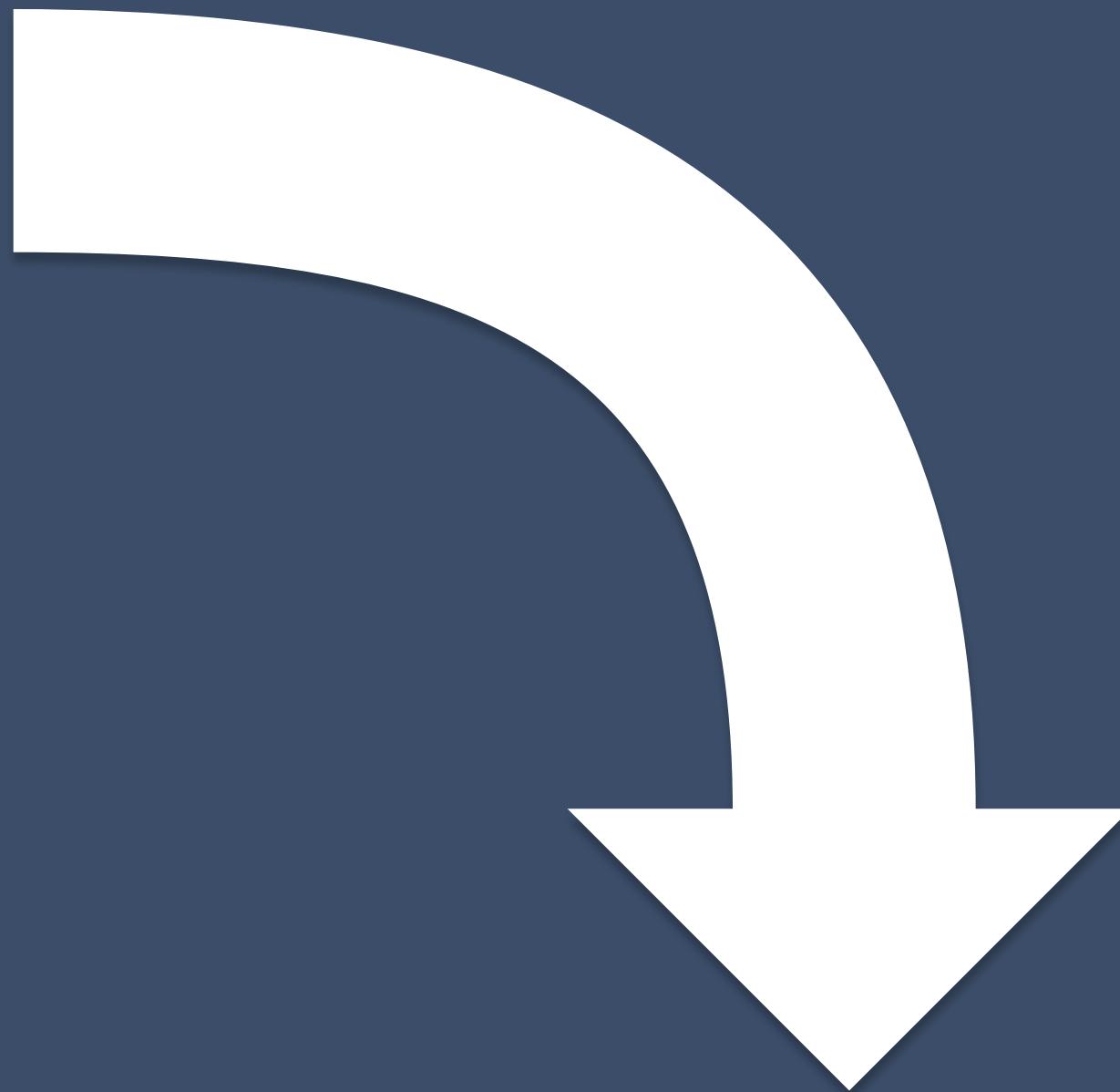
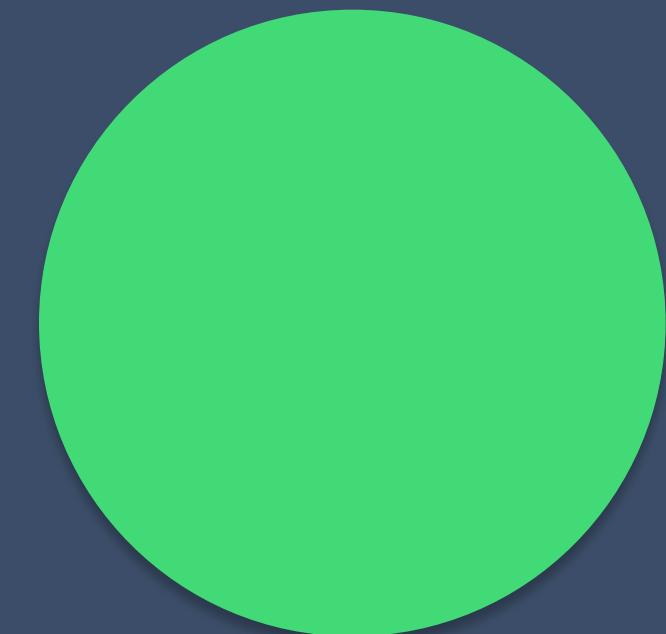
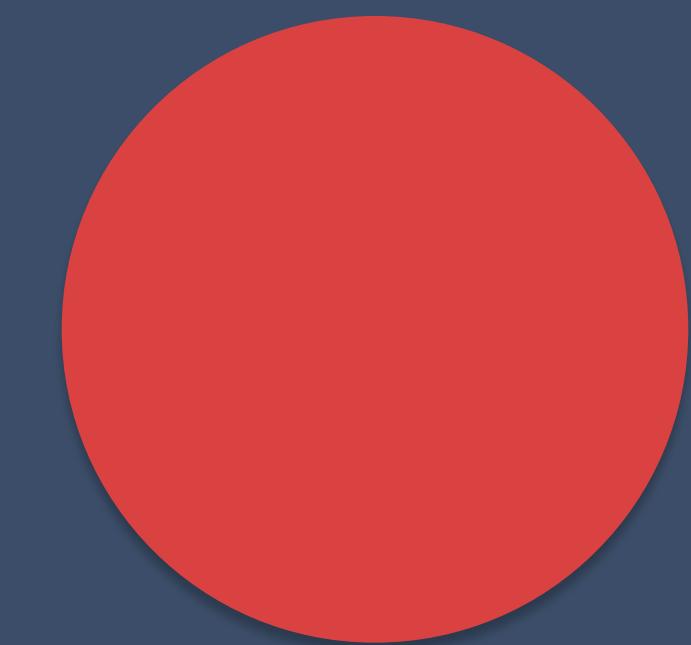
/jest-dom



**REFACTOR**

**IS A PROCESS**

*test runner*   
*matchers*    
*utilities*     
*mocking*   
*coverage* 



# REFACTOR

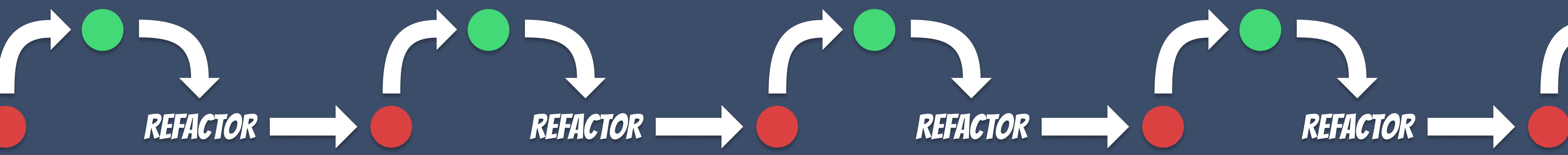


# test runner

```
  PASS packages/diff-sequences/src/__tests__/index.test.js
  PASS packages/jest-diff/src/__tests__/diff.test.js
  PASS packages/jest-mock/src/__tests__/jest_mock.test.js
  PASS packages/jest-util/src/__tests__/fakeTimers.test.js
  PASS packages/pretty-format/src/__tests__/prettyFormat.test.js

  RUNS packages/jest-haste-map/src/__tests__/index.test.js
  RUNS packages/pretty-format/src/__tests__/DOMElement.test.js
  RUNS packages/jest-config/src/__tests__/normalize.test.js
  RUNS packages/expect/src/__tests__/matchers.test.js
  RUNS packages/pretty-format/src/__tests__/Immutable.test.js
  RUNS packages/expect/src/__tests__/spyMatchers.test.js
  RUNS packages/jest-cli/src/__tests__/SearchSource.test.js
  RUNS packages/jest-runtime/src/__tests__/script_transformer.test.js
  RUNS packages/jest-cli/src/__tests__/watch.test.js
  RUNS packages/jest-haste-map/src/crawlers/__tests__/watchman.test.js
  RUNS packages/pretty-format/src/__tests__/react.test.js

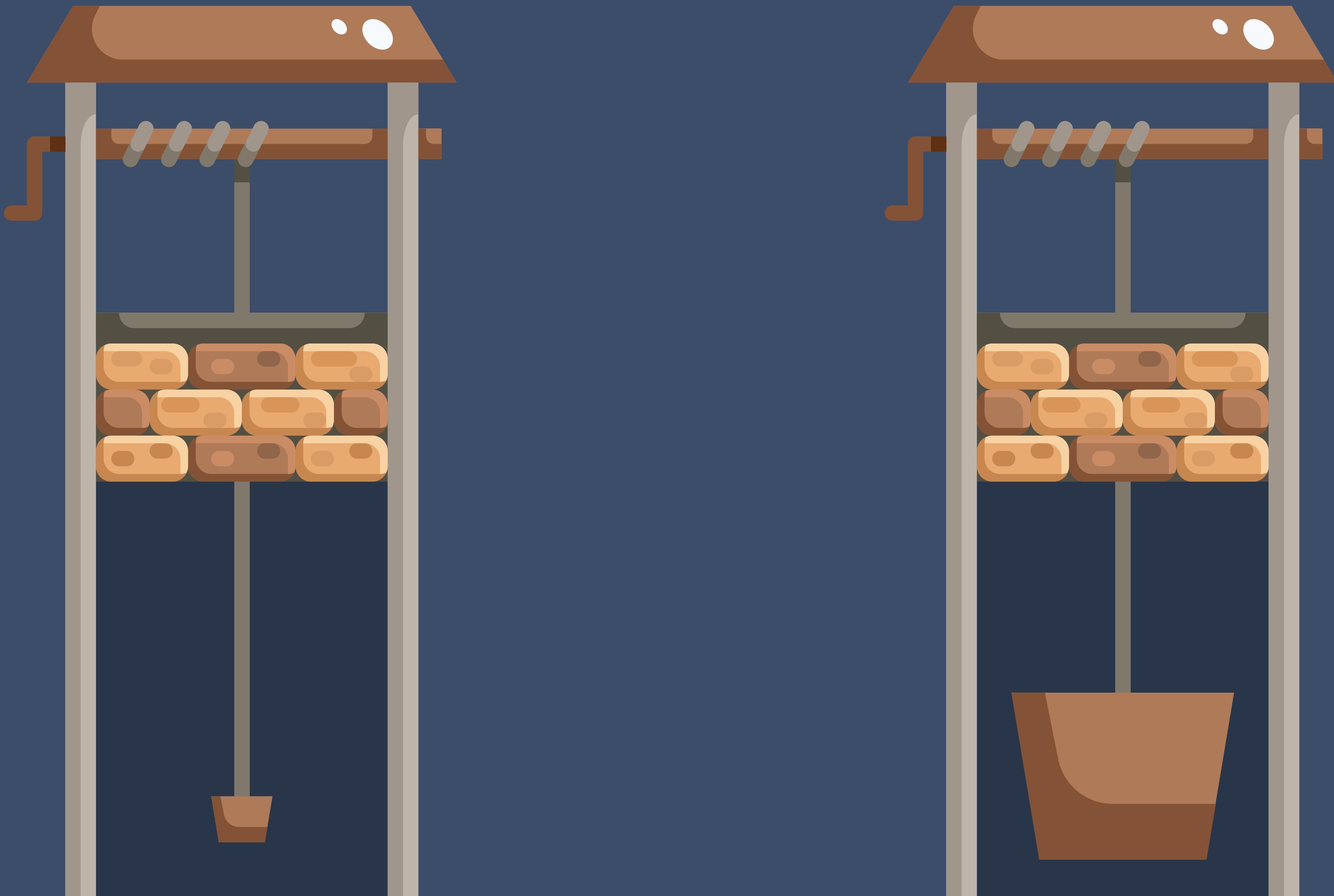
Test Suites: 5 passed, 5 of 303 total
Tests:       332 passed, 332 total
Snapshots:   21 passed, 21 total
Time:        4s
```



```
describe("group of tests", () => {  
  it("should test something", () => {
```



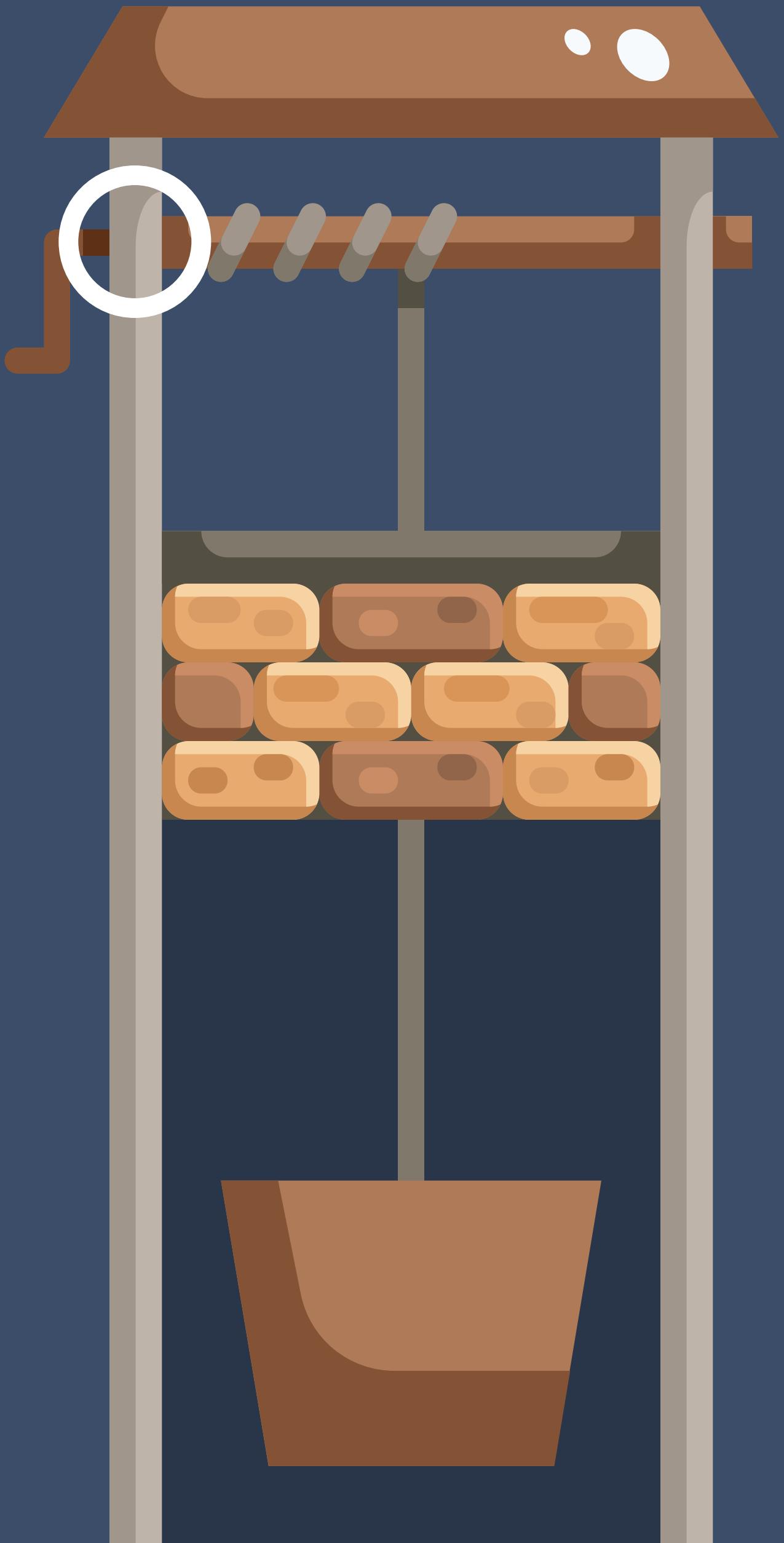
```
});  
});
```



```
describe("group of tests", () => {  
 xit("should skip this test", () => {
```



```
});  
});
```



```
test('two plus two is four', () => {  
  expect(2 + 2).toBe(4);  
});
```

*jest matchers*



**TDD IS NOT  
ALL OR NOTHING!**



# *custom jest-dom matchers*



**toBeDisabled**  
toBeEnabled  
toBeEmpty  
toBeEmptyDOMElement  
**toBeInTheDocument**  
toBeInvalid  
toBeRequired  
toBeValid  
**toBeVisible**  
toContainElement  
toContainHTML

toHaveAttribute  
toHaveClass  
toHaveFocus  
toHaveFormValues  
toHaveStyle  
toHaveTextContent  
**toHaveValue**  
toHaveDisplayValue  
**toBeChecked**  
toBePartiallyChecked  
toHaveDescription

/vue

/react



/angular



*utilities*  
@testing-library



/react-hooks



/dom



/dom

**API**  
@testing-library

get  
**getAll By Text**  
query  
queryAll  
find  
findAll

LabelText  
PlaceholderText  
AltText  
Title  
DisplayValue  
Role  
TestId

/react



render  
cleanup  
act

```
test('mock is not called', () => {  
  const mock = jest.fn();  
  expect(mock).toHaveBeenCalledTimes(0);  
});
```



*mocking*



# coverage

```
~/d/p/j/j/e/timer $ yarn jest --coverage
yarn run v1.12.3
$ /Users/ortatherox/dev/projects/jest/jest/examples/timer/node_modules/.bin/jest --coverage
PASS  __tests__/timer_game.test.js
PASS  __tests__/infinite_timer_game.test.js
-----|-----|-----|-----|-----|-----|
File      | %Stmts | %Branch | %Funcs | %Lines | Uncovered Line #s |
-----|-----|-----|-----|-----|-----|
All files |    87.5 |     100 |      80 |    87.5 |           |
infiniteTimerGame.js |     80 |     100 |  66.67 |     80 |      12 |
timerGame.js |    100 |     100 |     100 |    100 |           |
-----|-----|-----|-----|-----|-----|
Test Suites: 2 passed, 2 total
Tests:       4 passed, 4 total
Snapshots:   0 total
Time:        0.878s, estimated 1s
Ran all test suites.
```