

Code Coverage with Jest

소프트웨어 개발의 원리 및 실제

2017. 04. 27 (목)



Code Coverage

- 테스트를 수행했을 때, 대상 프로그램 코드가 얼마나 잘 실행되었는지 확인
 - ✓ Statement: 프로그램의 실행문이 한 번 이상 실행되었는지를 확인
 - ✓ Decision: 분기의 전체 결과가 참 / 거짓 모두 나타나는지 확인

Jest

- React/Redux 를 포함한 자바스크립트 테스트 도구
 - ✓ Zero-configuration: 사용자마다 개별적인 설정 없이도 사용 가능
 - ✓ Coverage report: code coverage 테스트 결과 제공 (--coverage 옵션)
 - ✓ Mocking library: mock function/module 생성을 위한 라이브러리 제공

Jest Install & 실행

- `npm install jest`
 - ✓ <https://facebook.github.io/jest/docs/tutorial-react.html#content>
- Module 이 없다고 나올 시 아래 방법으로 설치
 - ✓ `npm install --save-dev 모듈이름`
- Jest 실행
 - ✓ `jest`
- Jest code coverage 실행
 - ✓ `jest --coverage`

Jest Coverage Report

- Jest 에서 제공하는 coverage 테스트 기능 (jest --coverage)
 - ✓ **Stmts: statement coverage**
 - ✓ **Branch: decision coverage**
 - ✓ **Funcs: 테스트 수행 시 실행된 함수의 비율**
 - ✓ **Lines: statement coverage와 유사하나 단순히 각 라인의 실행을 확인**
 - ✓ **Uncovered Lines: 테스트에서 실행되지 않은 라인 번호**

Jest

```
at Object.batchedUpdates (node_modules/react-test-renderer/lib/shallow/ReactDefaultBatchingStrategy.js:62:26)
at Object.batchedUpdates (node_modules/react-test-renderer/lib/shallow/ReactUpdates.js:97:27)
at ReactShallowRenderer.unstable_batchedUpdates (node_modules/react-test-renderer/lib/shallow/ReactShallowRenderer.js:130:25)
at performBatchedUpdates (node_modules/enzyme/build/ShallowWrapper.js:103:21)
at node_modules/enzyme/build/ShallowWrapper.js:127:9
at withSetStateAllowed (node_modules/enzyme/build/Utils.js:284:3)
at new ShallowWrapper (node_modules/enzyme/build/ShallowWrapper.js:126:38)
at shallow (node_modules/enzyme/build/shallow.js:19:10)
at wrap (src/components/atoms/OkPane/index.test.js:5:139)
at Object.<anonymous> (src/components/atoms/OkPane/index.test.js:13:17)
```

FAIL src/services/api/index.test.js

- api > encountered a declaration exception

ReferenceError: regeneratorRuntime is not defined

```
at Suite.<anonymous> (src/services/api/index.test.js:69:37)
at Object.<anonymous> (src/services/api/index.test.js:61:1)
```

PASS src/components/templates/PageTemplate/index.test.js

- Console

```
console.error node_modules/fbjs/lib/warning.js:36
Warning: Accessing PropTypes via the main React package is deprecated. Use the prop-types package from npm instead.
```

Test Suites: 4 failed, 1 passed, 5 total

Tests: 6 failed, 12 passed, 18 total

Snapshots: 0 total

Time: 1.305s

Ran all test suites.

Please run `npm install` to use the version of Jest intended for this project.

swpp@juneyounglee-desktop:~/swpp-assn201701/omak\$

Jest

```
PASS src/components/templates/PageTemplate/index.test.js
  • Console

  console.error node_modules/fbjs/lib/warning.js:36
    Warning: Accessing PropTypes via the main React package is deprecated. Use the prop-types package from npm instead.

-----|-----|-----|-----|-----|-----|
File      | % Stmts | % Branch | % Funcs | % Lines | Uncovered Lines |
-----|-----|-----|-----|-----|-----|
All files | 73.21   | 54.17    | 66.67    | 76.92    |                  |
components/atoms/OkPane | 75      | 16.67    | 50       | 75       |                  |
  index.js | 75      | 16.67    | 50       | 75       | 17,29,31         |
components/atoms/RestartButton | 100     | 100      | 100      | 100      |                  |
  index.js | 100     | 100      | 100      | 100      |                  |
components/atoms/StatusLabel | 100     | 33.33    | 100      | 100      |                  |
  index.js | 100     | 33.33    | 100      | 100      |                  |
components/templates/PageTemplate | 100     | 100      | 100      | 100      |                  |
  index.js | 100     | 100      | 100      | 100      |                  |
services/api | 65.71   | 83.33    | 60       | 70.97    |                  |
  index.js | 65.71   | 83.33    | 60       | 70.97    | ... 79,83,87,91  |
-----|-----|-----|-----|-----|-----|

Test Suites: 4 failed, 1 passed, 5 total
Tests:       6 failed, 12 passed, 18 total
Snapshots:   0 total
Time:        1.821s
Ran all test suites.
Please run `npm install` to use the version of jest intended for this project
```

Jest

FAIL src/components/atoms/RestartButton/index.test.js

- Console

```
console.error node_modules/fbjs/lib/warning.js:36
```

```
Warning: Accessing PropTypes via the main React package is deprecated. Use the prop-types package from npm instead.
```

- renders children when passed in

```
expect(received).toBe(expected)
```

```
Expected value to be (using ===):
```

```
true
```

```
Received:
```

```
false
```

```
at Object.<anonymous> (src/components/atoms/RestartButton/index.test.js:11:36)
```


Jest

```
const onClick = jest.fn()
const wrap = (props = {}) => shallow(<RestartButton onClick = {onClick} {...props} />)

it('renders children when passed in', () => {
  const wrapper = wrap({ children: 'test' })
  expect(wrapper.contains('test')).toBe(true)
})

it('renders props when passed in', () => {
  const wrapper = wrap({ id: 'restart' })
  expect(wrapper.find({ id: 'restart' })).toHaveLength(1)
})

it('calls onClick when Clicked', () => {
  onClick.mockClear()
  const wrapper = wrap()
  expect(onClick).not.toBeCalled()
  wrapper.simulate('click')
  expect(onClick).toBeCalled()
})
```

Jest

FAIL src/components/atoms/RestartButton/index.test.js

- Console

```
console.error node_modules/fbjs/lib/warning.js:36
```

```
Warning: Accessing PropTypes via the main React package is deprecated. Use the prop-types package from npm instead.
```

- renders children when passed in

```
expect(received).toBe(expected)
```

```
Expected value to be (using ===):
```

```
  true
```

```
Received:
```

```
  false
```

```
    at Object.<anonymous> (src/components/atoms/RestartButton/index.test.js:11:36)
```

- calls onClick when Clicked

```
TypeError: onClick.mockClesear is not a function
```

```
    at Object.<anonymous> (src/components/atoms/RestartButton/index.test.js:20:11)
```

Jest

```
const onClick = jest.fn()
const wrap = (props = {}) => shallow(<RestartButton onClick = {onClick} {...props} />)

it('renders children when passed in', () => {
  const wrapper = wrap({ children: 'test' })
  expect(wrapper.contains('test')).toBe(true)
})

it('renders props when passed in', () => {
  const wrapper = wrap({ id: 'restart' })
  expect(wrapper.find({ id: 'restart' })).toHaveLength(1)
})

it('calls onClick when Clicked', () => {
  onClick.mockClear()
  const wrapper = wrap()
  expect(onClick).not.toHaveBeenCalled()
  wrapper.simulate('click')
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```

Jest

Warning: Accessing PropTypes via the main React package is deprecated. Use the prop-types package from npm instead.

File	% Stmts	% Branch	% Funcs	% Lines	Uncovered Lines
All files	73.21	54.17	66.67	76.92	
components/atoms/OkPane	75	16.67	50	75	
index.js	75	16.67	50	75	17,29,31
components/atoms/RestartButton	100	100	100	100	
index.js	100	100	100	100	
components/atoms/StatusLabel	100	33.33	100	100	
index.js	100	33.33	100	100	
components/templates/PageTemplate	100	100	100	100	
index.js	100	100	100	100	
services/api	65.71	83.33	60	70.97	
index.js	65.71	83.33	60	70.97	... 79,83,87,91

Test Suites: 4 failed, 1 passed, 5 total
Tests: 6 failed, 13 passed, 19 total
Snapshots: 0 total
Time: 1.417s

Tutorial Sites

- 공식사이트 : <https://facebook.github.io/jest/>
- 간단한 예제 :
<https://github.com/facebook/jest/tree/master/examples/react>
- 오늘 예제에서 본 함수들과 이외의 함수들을 볼 수 있는 곳 :
<http://airbnb.io/enzyme/index.html>
- Arc에서 자동생성되는 index.test.js는 좋은 예제가 될 수 있습니다!