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Mastering Jest: Tips & Tricks

FOR JAVASCRIPT DEVELOPERS

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JS

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2.5 Debug Tests With Node Inspector

Sometimes it is not clear why tests are failing. No matter whether it is something very simple or more complex like react context or test database state, you can use the debugger to tackle the issue.

Put a debugger statement where you want to set a breakpoint.

```
function randomBytes(bytes: number): string {
  if (bytes <= 0)
    throw new Error(`randomBytes: bytes has to be greater than 0`);
  debugger;
  return Buffer.from(window.crypto.getRandomValues(new
  ↪  Uint8Array(bytes)))
    .toString("hex");
}
```

Run jest with inspector enabled and `--runInBand` flag to run tests one by one instead of in parallel. It's also an easy fix when you hit memory limits while running tests on your CI server.

```
node --inspect-brk ./node_modules/.bin/jest --runInBand
```

Open Chrome and go to chrome://inspect and step into the test case source code.

```
35
36 export function randomBytes(bytes: number): string {  bytes = 16
37   if (bytes <= 0) throw new Error(`randomBytes: bytes argument has to greater than 0`);
38   debugger;
39   return Buffer.from(window.crypto.getRandomValues(new Uint8Array(bytes))).toString("hex");
40 }
```

Figure 3: chrome://inspect

3.5 More Matchers And Chaining

Jest has an active community that not only can quickly answer your questions on Stack Overflow but also develops a lot of extensions. Two of my favorites are `jest-extended` which provides you with multiple custom matchers and `jest-chain` that allows you to chain matchers calls.

Add `setupTestFrameworkScriptFile` configuration for Jest.

```
"jest": {
  "setupTestFrameworkScriptFile": "<rootDir>/config/setupTest.js"
}
```

Import plugins you would like to use.

```
// config/setupTest.js
import "jest-chain";
import "jest-extended";
```

Assertions like this one are now possible.

```
expect([1, 2, 3])
  .toBeArray()
  .toIncludeAllMembers([2, 1]);
```

Check out jest-community/awesome-jest for the comprehensive list of popular plugins. Later in the ebook, I cover `@testing-library/jest-dom` to make React components testing more declarative and easier to understand.

4.5 Name Mocks

It is possible to give a mock a name. Mock names are used in error messages which makes debugging more straightforward and, in general, improve tests readability.

Let's name our `getRandomValues` mock.

```
global.window.crypto = {
  getRandomValues: jest.fn()
    .mockImplementation(require("polyfill-crypto.getrandomvalues"))
    .mockName("getRandomValuesPolyfill"),
};
```

We need a scenario under which test will fail. Create a helper function that uses `randomBytes` to return a passphrase.

```
export function passphrase() {
  return randomBytes(32);
}
```

Test for passphrase can be following. Place it **after** `randomBytes` test.

```
describe("randomBytes", () => { ... });

describe("passphrase", () => {
  test("generates 32 random bytes using native getRandomValues", () => {
    expect(passphrase().length).toEqual(64);
    expect(window.crypto.getRandomValues).toHaveBeenCalledTimes(1);
  });
});
```

Tests now fail with the message:

```
Expected mock function "getRandomValuesPolyfill" to have been called one
    time, but it was called three times.
```

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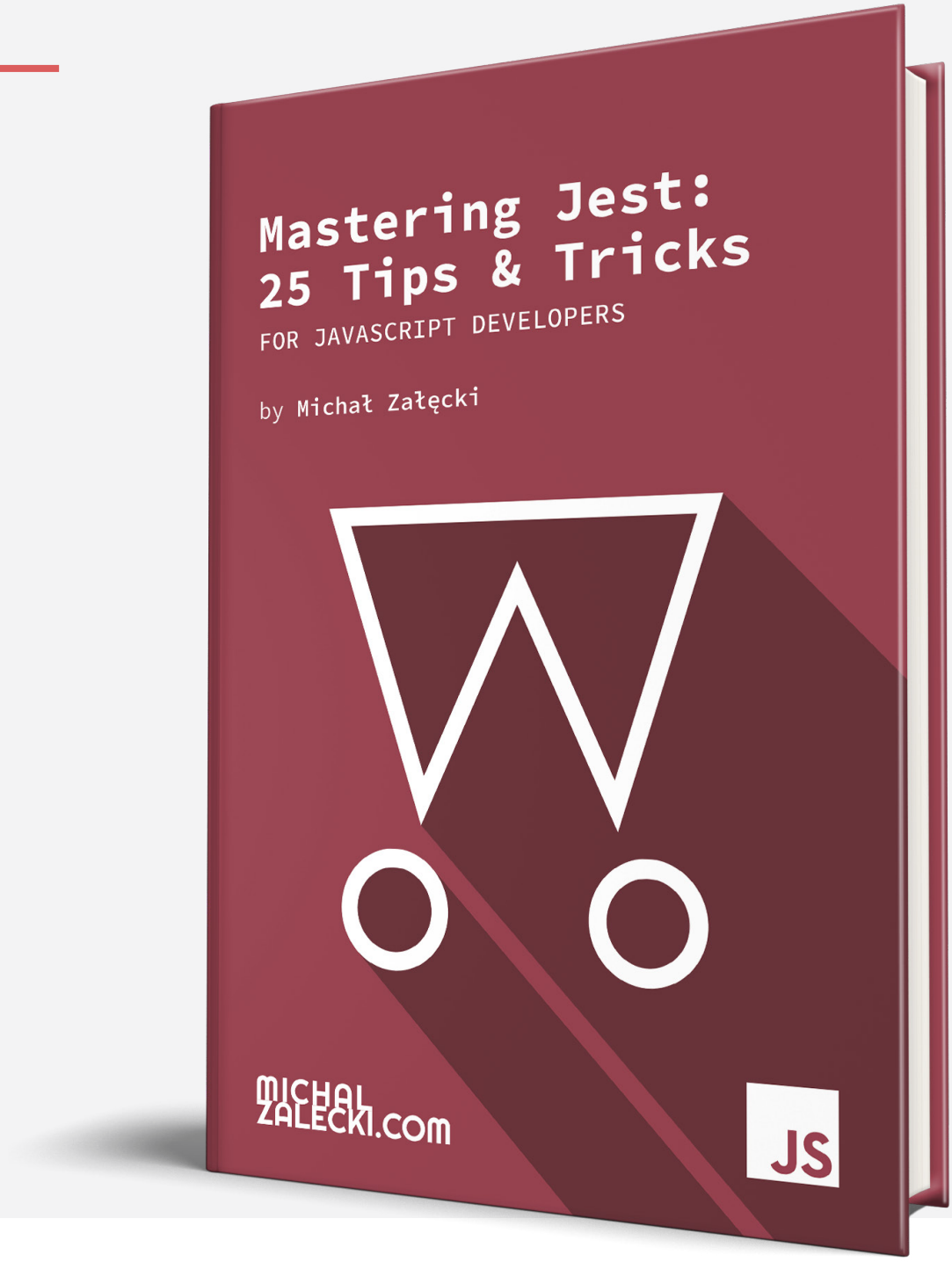

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