JAVASCRIPT UNIT TESTING

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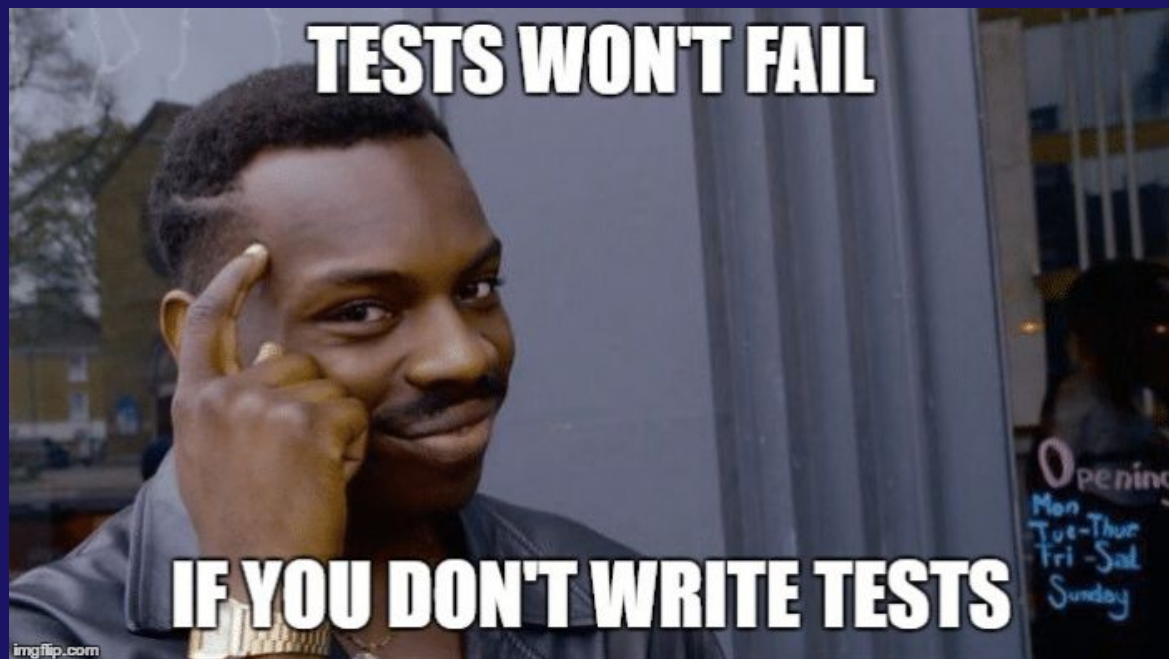
TESTS WON'T FAIL

IF YOU DON'T WRITE TESTS

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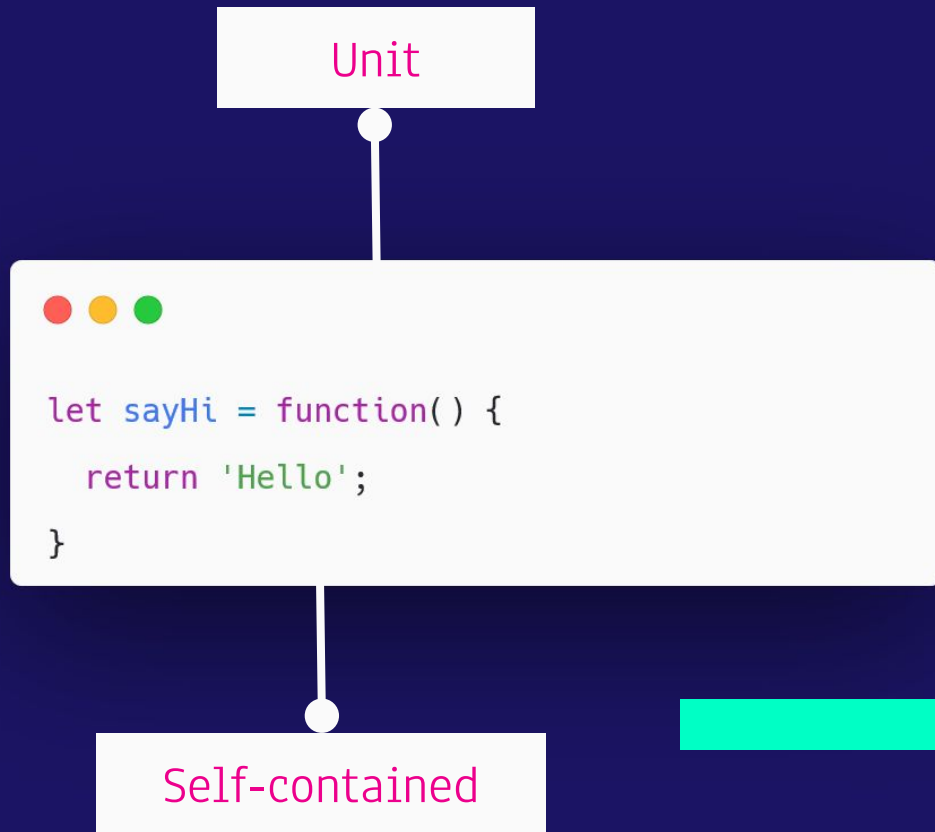
Hands-on
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01

Unit Testing

INTRODUCTION

Unit testing is a way to test units - the smallest components of your software - to validate that each of them performs as it should

Positive **Negative**

```
let sayHi = function() {
  return 'Hello';
}
```

Self-contained

UNIT TESTING TECHNIQUES

White-Box Testing

Tester is aware of internal functionality

Gray-Box Testing
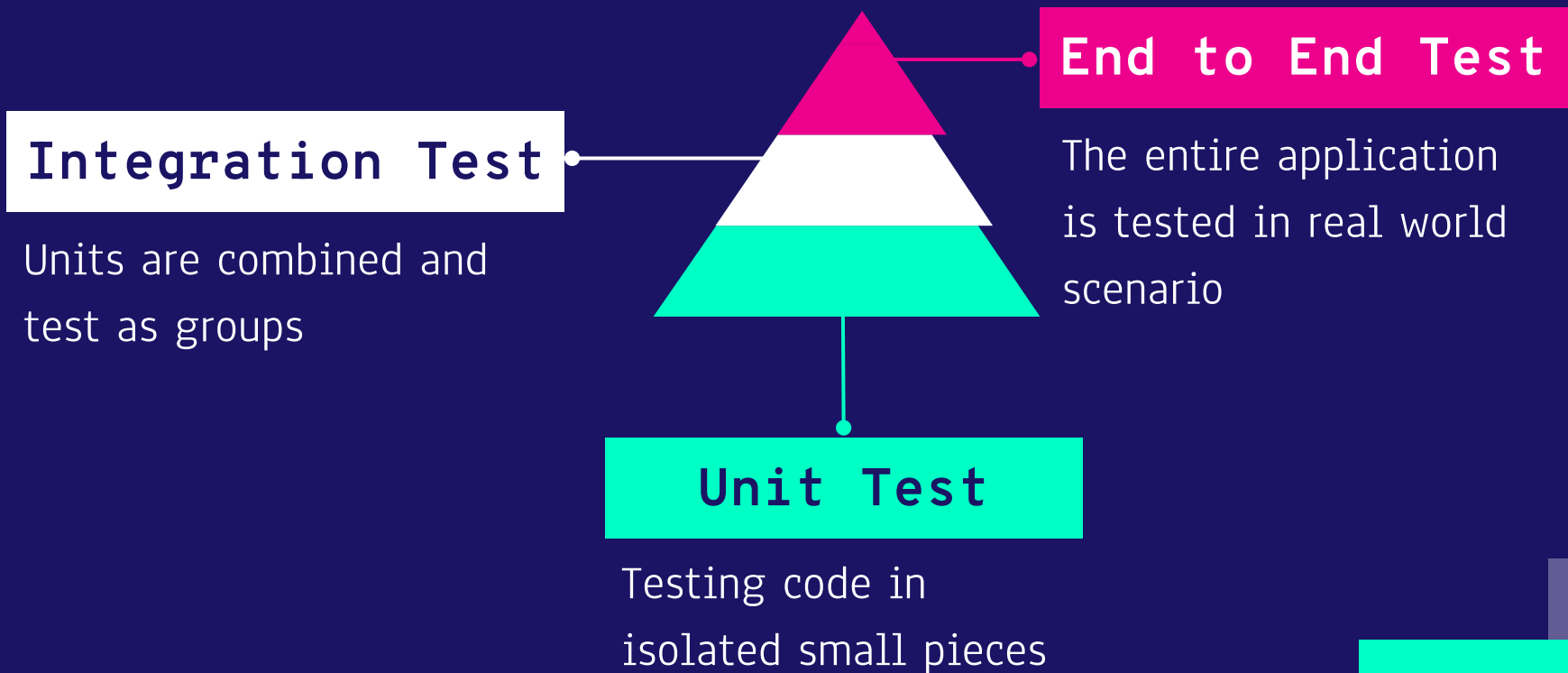
Tester is somewhat aware of internal functionality
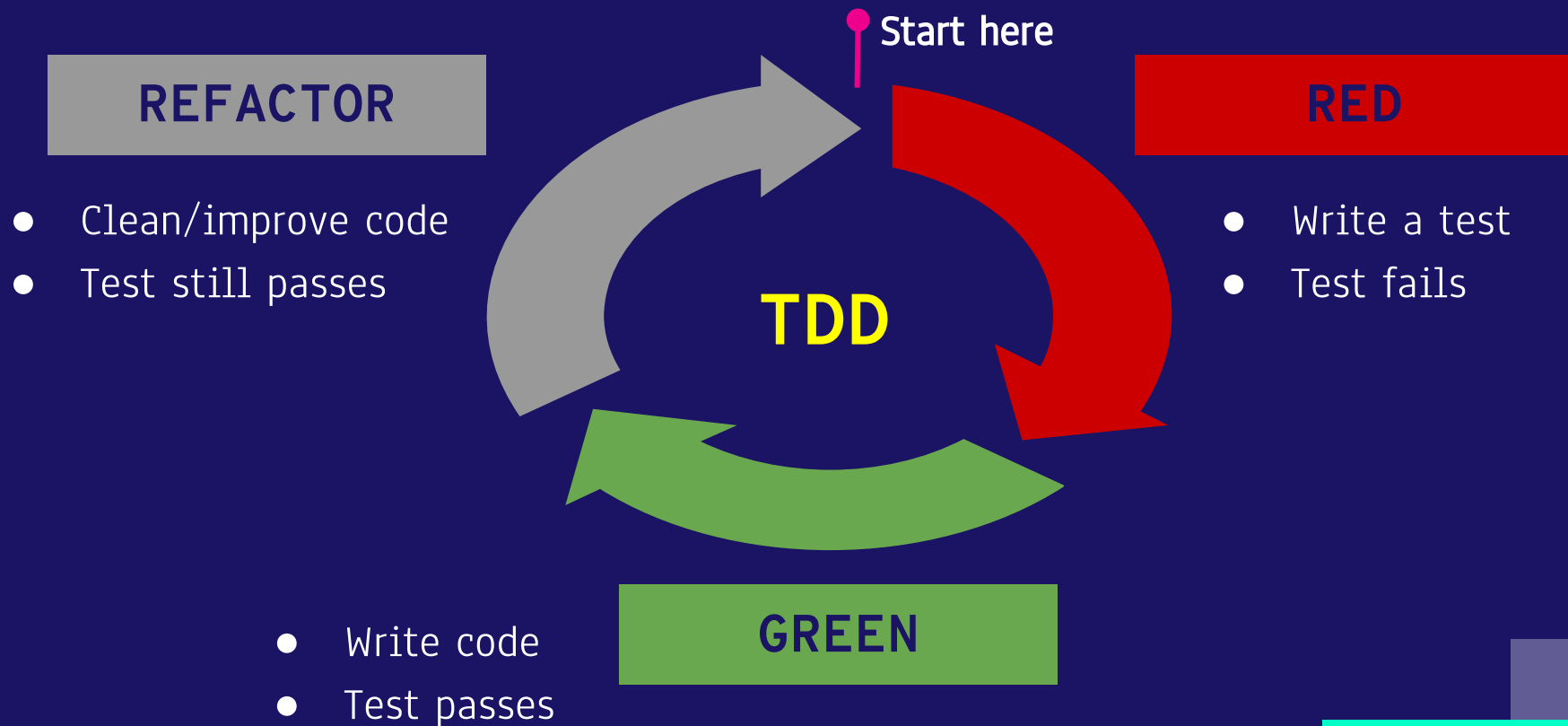
Black-Box Testing

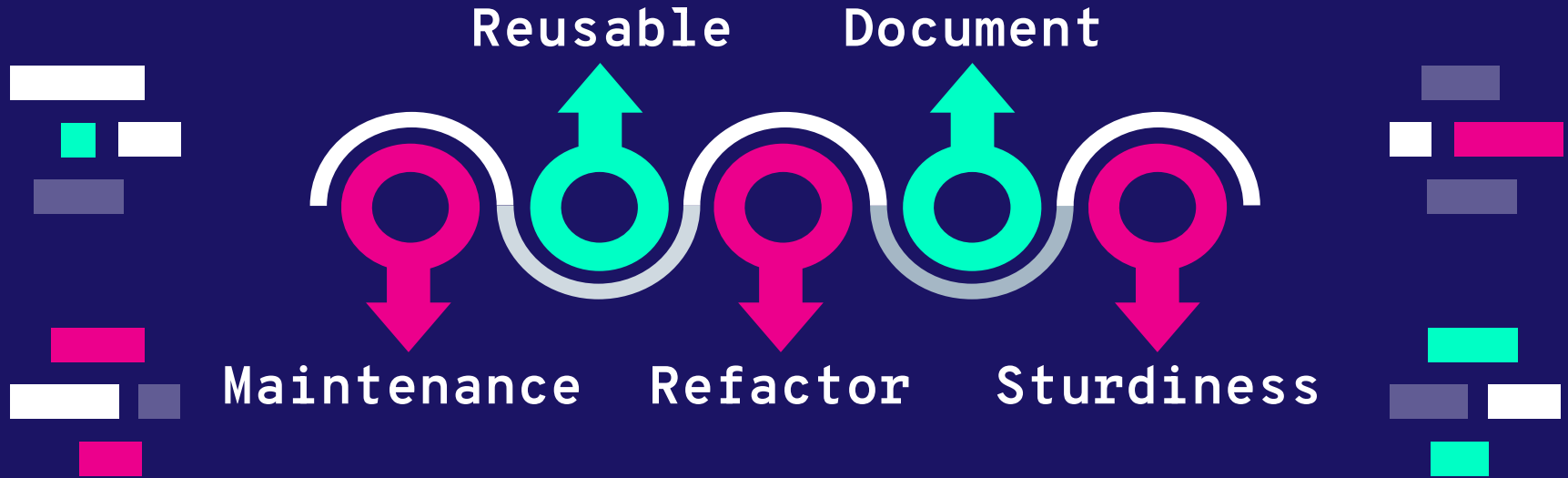Tester is not aware of the internal functionality

THE TESTING PYRAMID

End to End Test

The entire application is tested in real world scenario

Integration Test

Units are combined and test as groups

Unit Test

Testing code in isolated small pieces

TEST DRIVEN DEVELOPMENT

Start here

REFACTOR

RED

- Clean/improve code
- Test still passes

TDD

- Write a test
- Test fails

GREEN

- Write code
- Test passes

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WHY TESTING MATTERS?

Reusable

Document

Maintenance

Refactor

Sturdiness

WHAT MAKES TESTING GOOD?

Quantity   Quality

Code coverage
Number of tests

Edge cases
Representative

02

Jest

WHAT IS JEST?

Jest is a Javascript testing
framework designed to make
testing as easy as possible

3M+

Public repos on Github
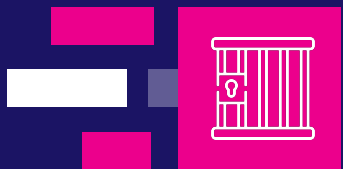
JEST FEATURES

Unit Testing

Test each component as a unit

Expect-Styled

Write what you expect your code should do
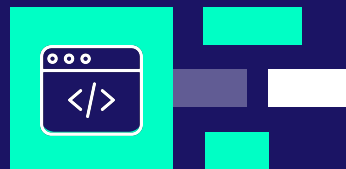
Mocking

Isolate the test from external factors

Code Coverage

Shows how much source code is tested
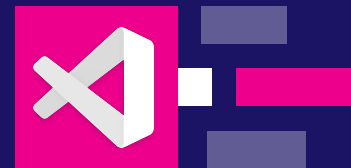
JEST FEATURES

Fast & Save

Ensures your tests have unique global state

VS Code

Jest ❤️ VS Code

Continuous Testing

Wait for changes and execute tests automatically

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HOW TO GET STARTED? EASY!

1. `npm install --save-dev jest`
2. Create `/test` directory
3. Create a `.test.js` file
4. Add this to `package.json`:

```
"scripts": {
    "test": "jest --verbose"
}
```

5. Happy testing!

SYNTAX

describe

Creates a block that groups together several related tests

each
To duplicate the same test suites with different data

only
To run only the tests of one particular describe block

skip
To not run a particular describe block

SYNTAX

it/test
You should write your expectatives inside

each
Duplicates the test for different types of data

only
To run only that particular test

skip
To skip that particular test

todo
To mark a test as pending to be done

SYNTAX

Setup & Teardown

afterAll
Runs a function after all the tests in the file have finished

afterEach
Runs a function after each one of the tests completes

beforeAll
Runs a function before any of the tests in the file run

beforeEach
Runs a function before each of the tests runs

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MATCHERS

toBe

Checks referential identities
Is even stricter than ===

toEqual

Compares the content and type
Works the same as ===

MATCHERS

toContain

Checks if an array contains a certain element

toBeDefined

Checks if the variable is defined

toBeCloseTo

Checks if a number is close to another one

toBeNull

Checks if the following value is Null

toBeTruthy

Checks if the following value is Truthy

toBeFalsy

Checks if the following value is Falsy

03

Hands-on Jest
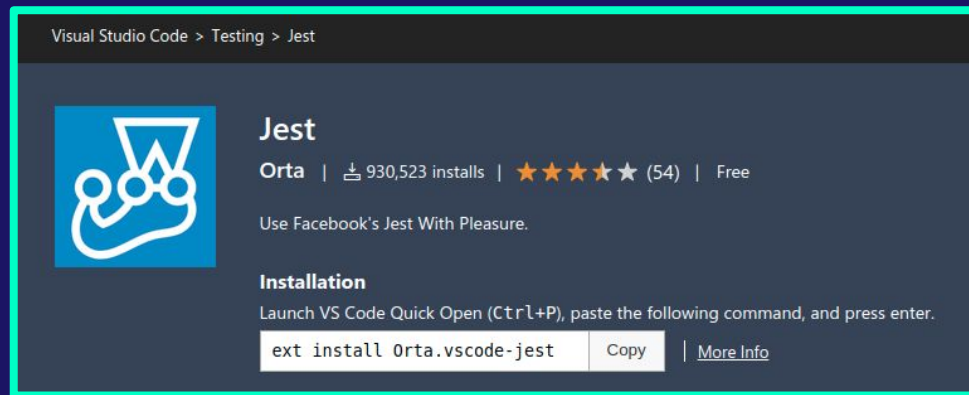
VS CODE — TYPE SUPPORT

1. `npm install --save-dev @types/jest`

2. Create `jsconfig.json` file:

```
"typeAcquisition": {
    "include": [ "jest" ]
}
```

3. Feel the power of autocompletion!

JEST EXTENSION

Continuous

Testing

Marketplace

"Let's jump into coding."

— Me

04

Conclusion

A QUICK OVERVIEW

Reusability

Jest
Reusability

Unit Testing

Edge Cases

TDD

05

References

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THANKS!

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Repository