

Vilnius.js Meetup October 2022



Danske Bank

Reverse Enforced Test Driven Development: Making e2e Tests Easy



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Simple

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Software development
can be simple

Agenda

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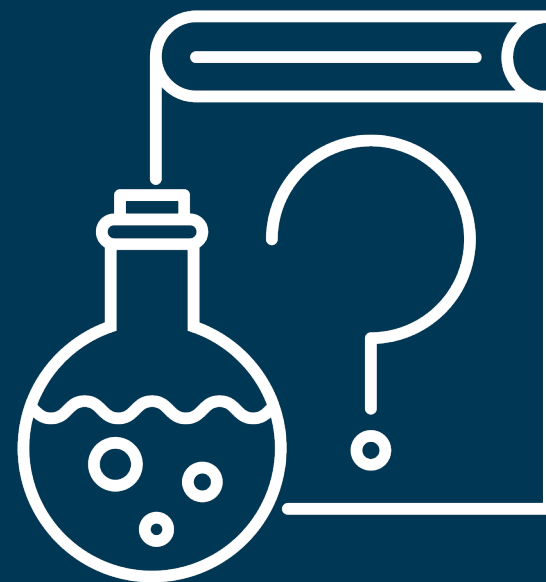
What to test?

Understanding it easily



How to test?

*Getting the maximum
from the least effort*



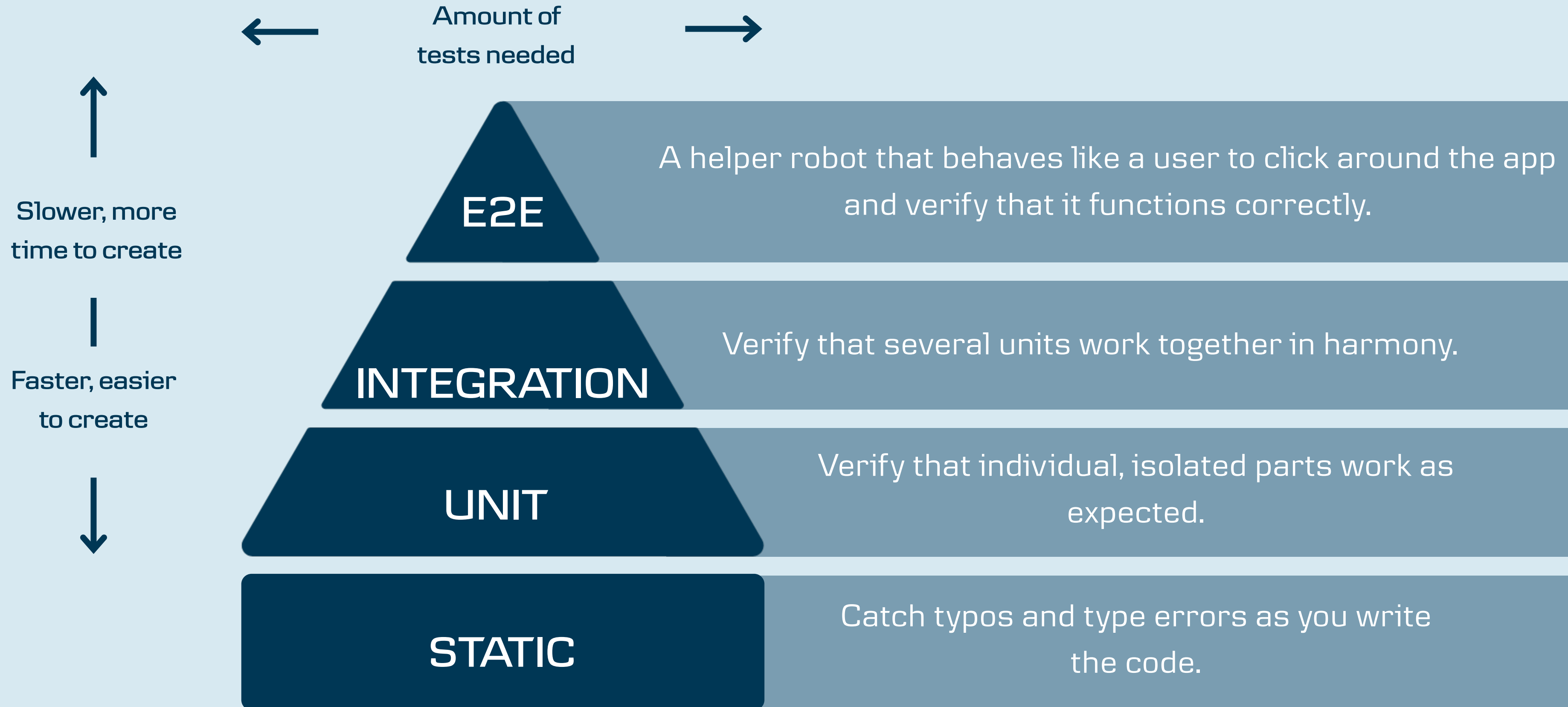
How not to forget to test?

Seniors, this one is for you



Test types

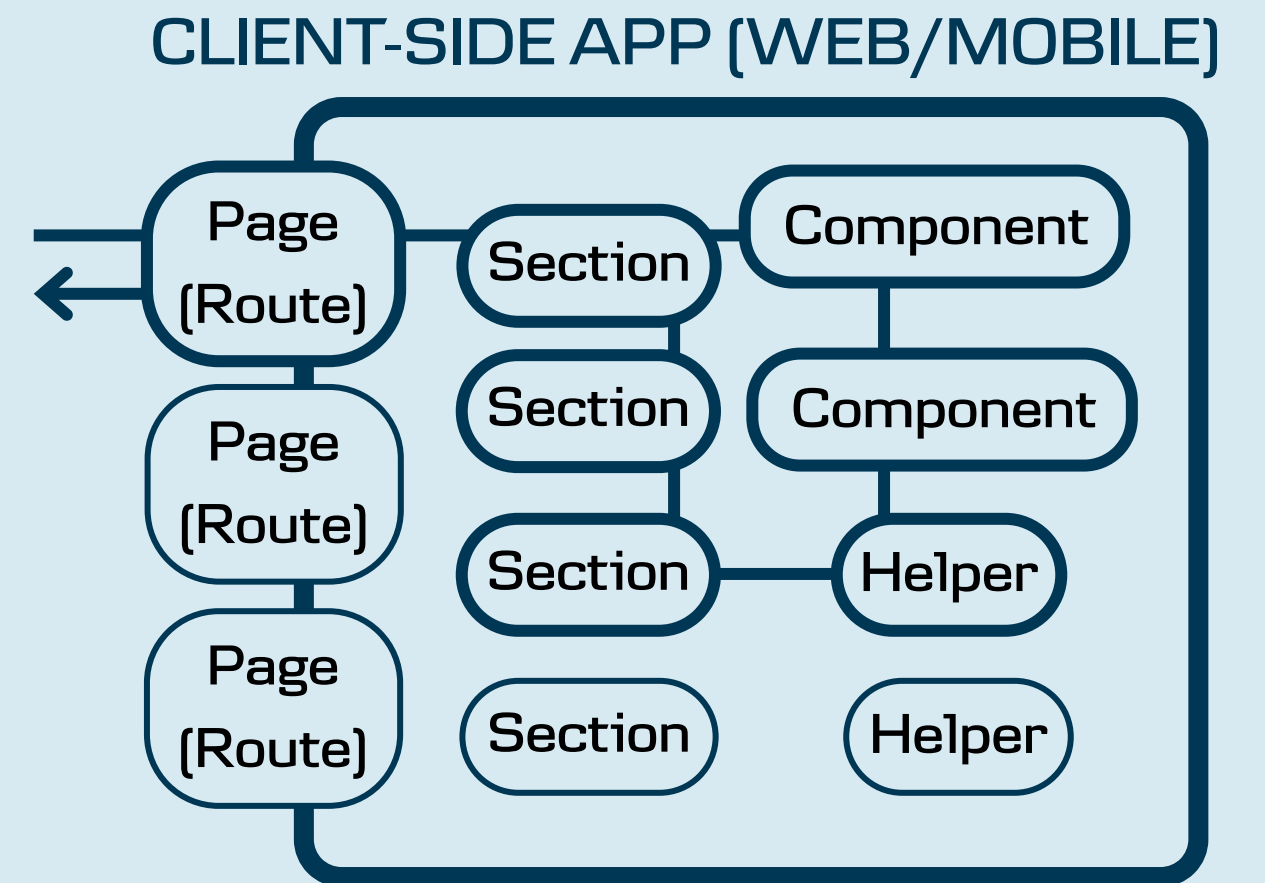
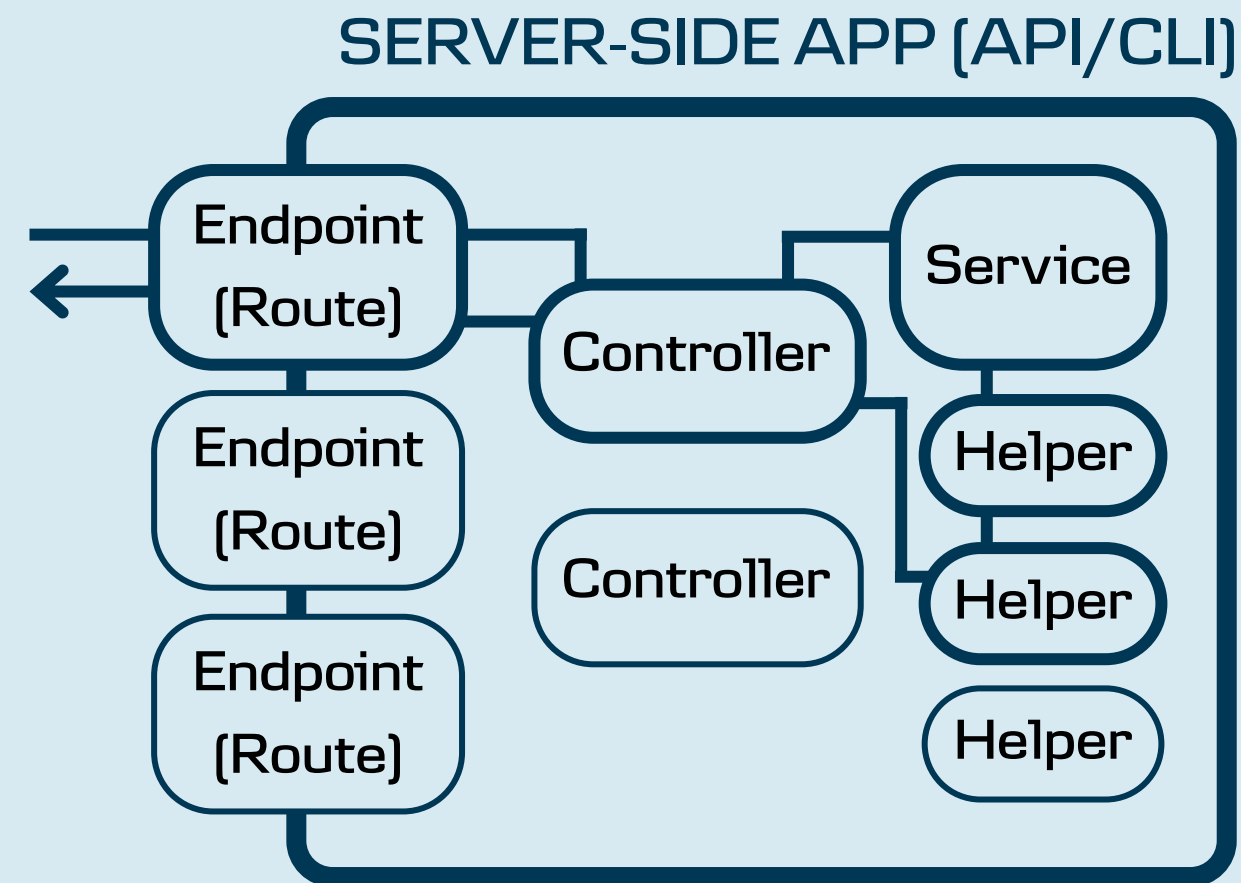
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E2E vs. Unit

E2E

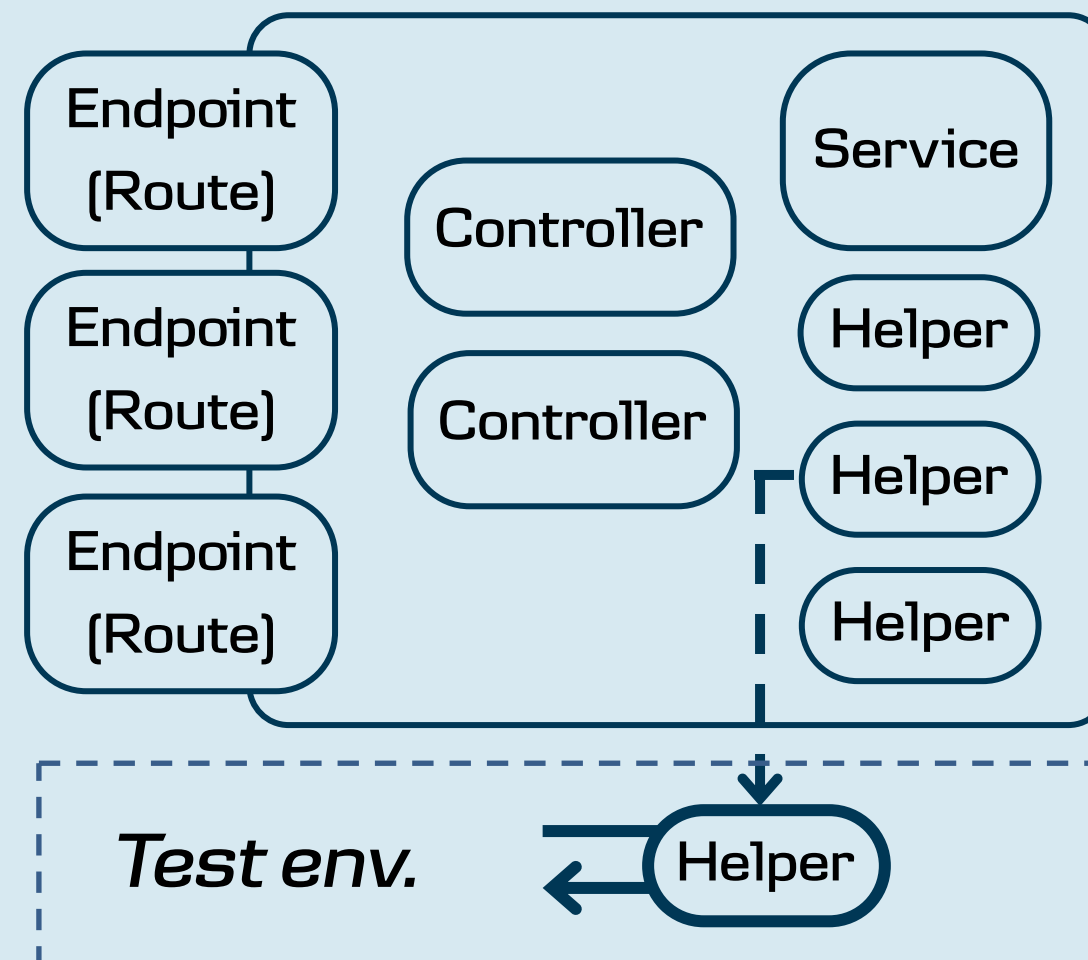
App is launched in test mode and tried as it would behave in real conditions



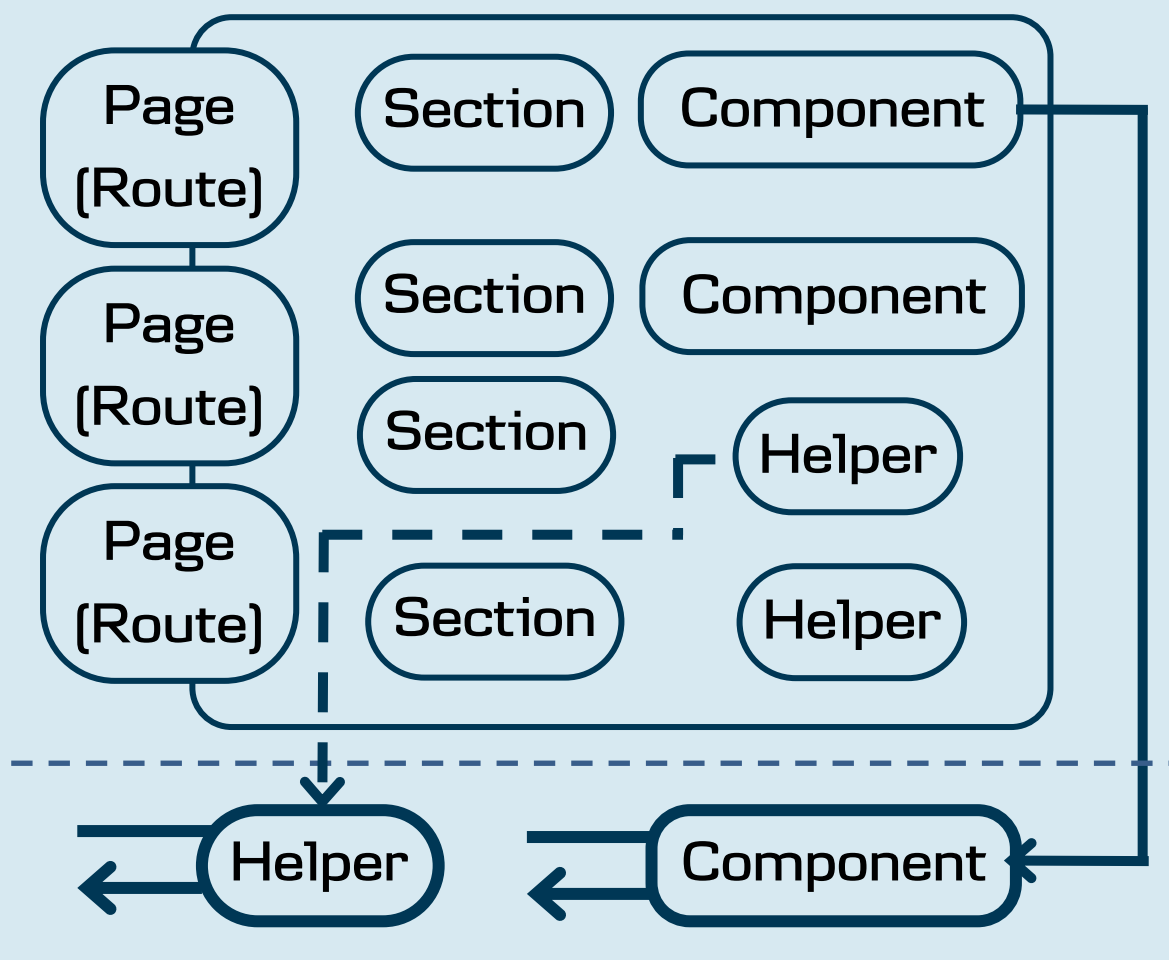
UNIT

A part of application is isolated into testing environment and run independently

SERVER-SIDE APP (API/CLI)



CLIENT-SIDE APP (WEB/MOBILE)



ALL UNIT TESTS PASSED!



Test code coverage

An underrated value that is rarely used beneficially

- Quality of the tests
- Tested and untested parts of the application

All files

84% Statements 21/25 100% Branches 6/6 100% Functions 13/13 84% Lines 21/25

File	Statements	Branches	Functions	Lines
src	33.33% 2/6	100% 0/0	100% 1/1	33.33% 2/6
src/component/counter	100% 5/5	100% 0/0	100% 5/5	100% 5/5
src/component/header	100% 2/2	100% 0/0	100% 1/1	100% 2/2
src/component/headline	100% 5/5	100% 2/2	100% 2/2	100% 5/5
src/component/login	100% 7/7	100% 4/4	100% 4/4	100% 7/7

100% COVERAGE
!=
NO BUGS

100% COVERAGE
==
NO RUNTIME ERRORS

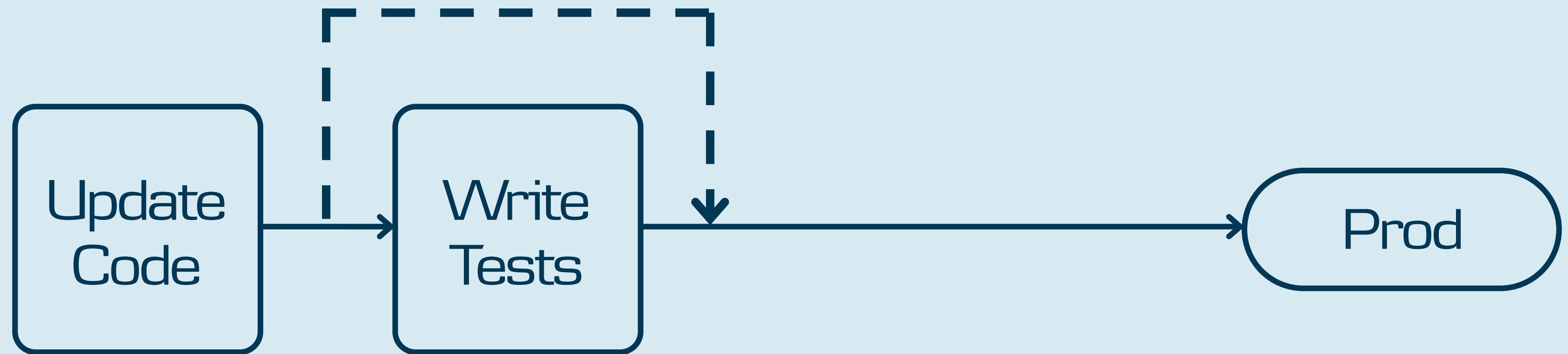
Default Development Flow



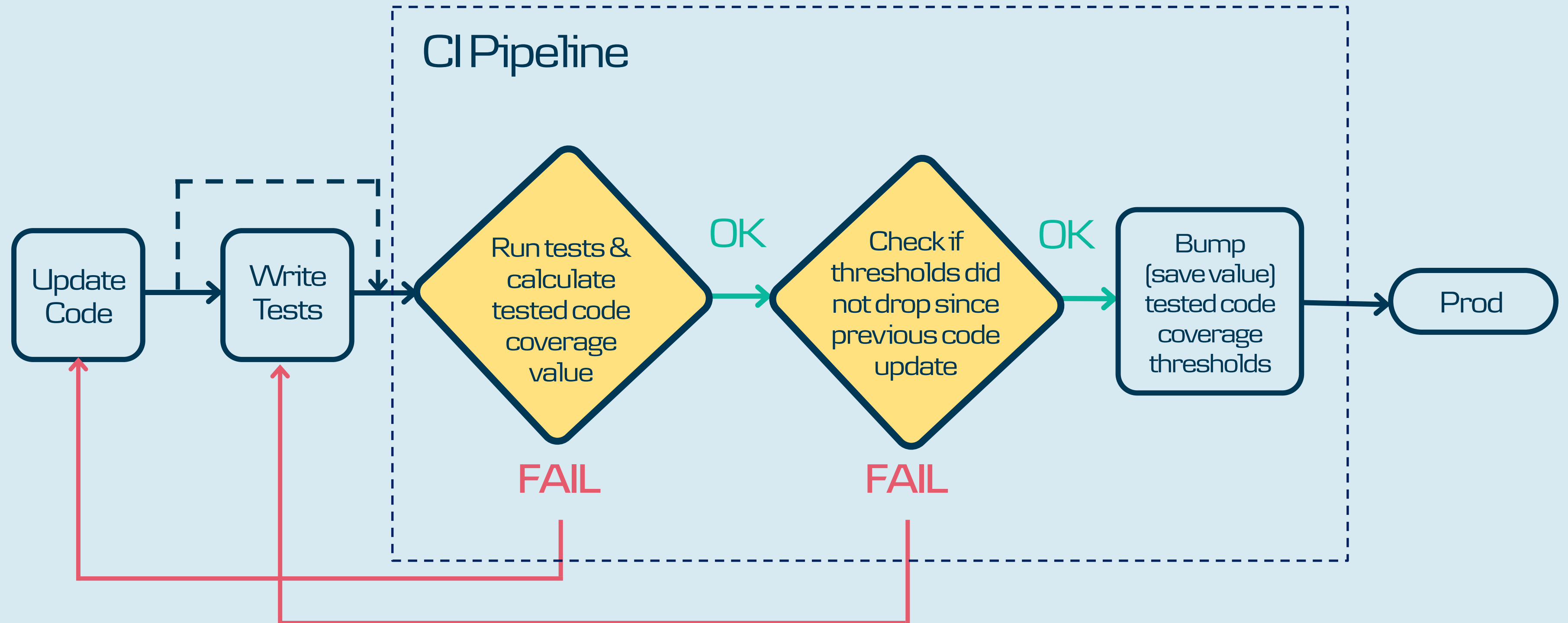
Test Driven Development Flow



Reverse Test Driven Development Flow



Reverse Enforced Test Driven Development Flow



E2E Test setup

SERVER-SIDE APP (API / CLI)

CLIENT-SIDE APP (WEB / MOBILE)

Test framework

jest, supertest

Cypress, cra

Code instrumentation

babel-plugin-istanbul
(by jest --coverage)

@cypress/instrument-cra
(uses babel-plugin-istanbul)

Coverage report generator

nyc
(by jest --coverage)

@cypress/code-coverage
(uses nyc)

Coverage comparator

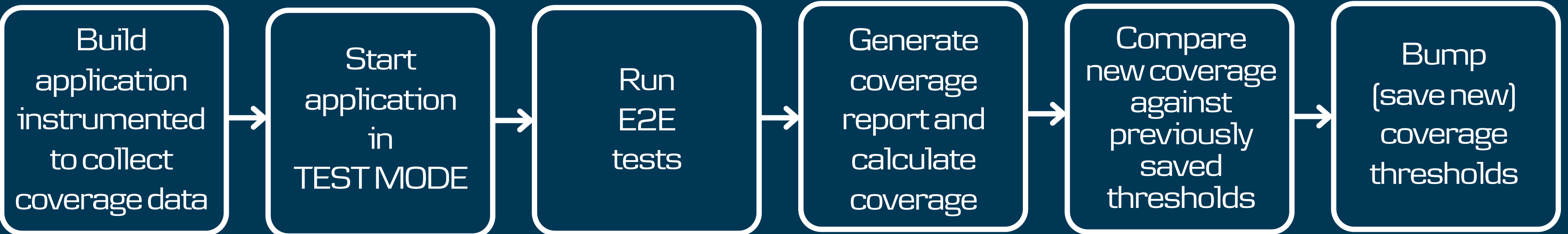
jest
(by jest --coverage)

@vroskus/compare-coverage-thresholds

Coverage bumper

jest-coverage-thresholds-bumper

jest-coverage-thresholds-bumper



Conclusion

What to test?



The coverage report is a map that helpfully points out things that should be tested.

How to test?



Always try to ensure that your application is compatible for e2e tests, implementing these tests becomes easy task and saves time.

How not to forget to test?



Implement RETDD flow into your CI pipeline and make it mandatory condition for a PR merge or a successful build.

Q&A

github.com/vroskus/retdd

Thank you!