

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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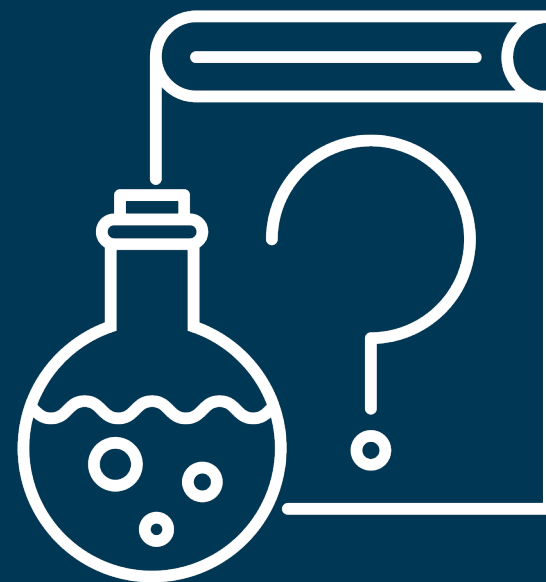
What to test?

Understanding it easily



How to test?

*Getting the maximum
from the least effort*



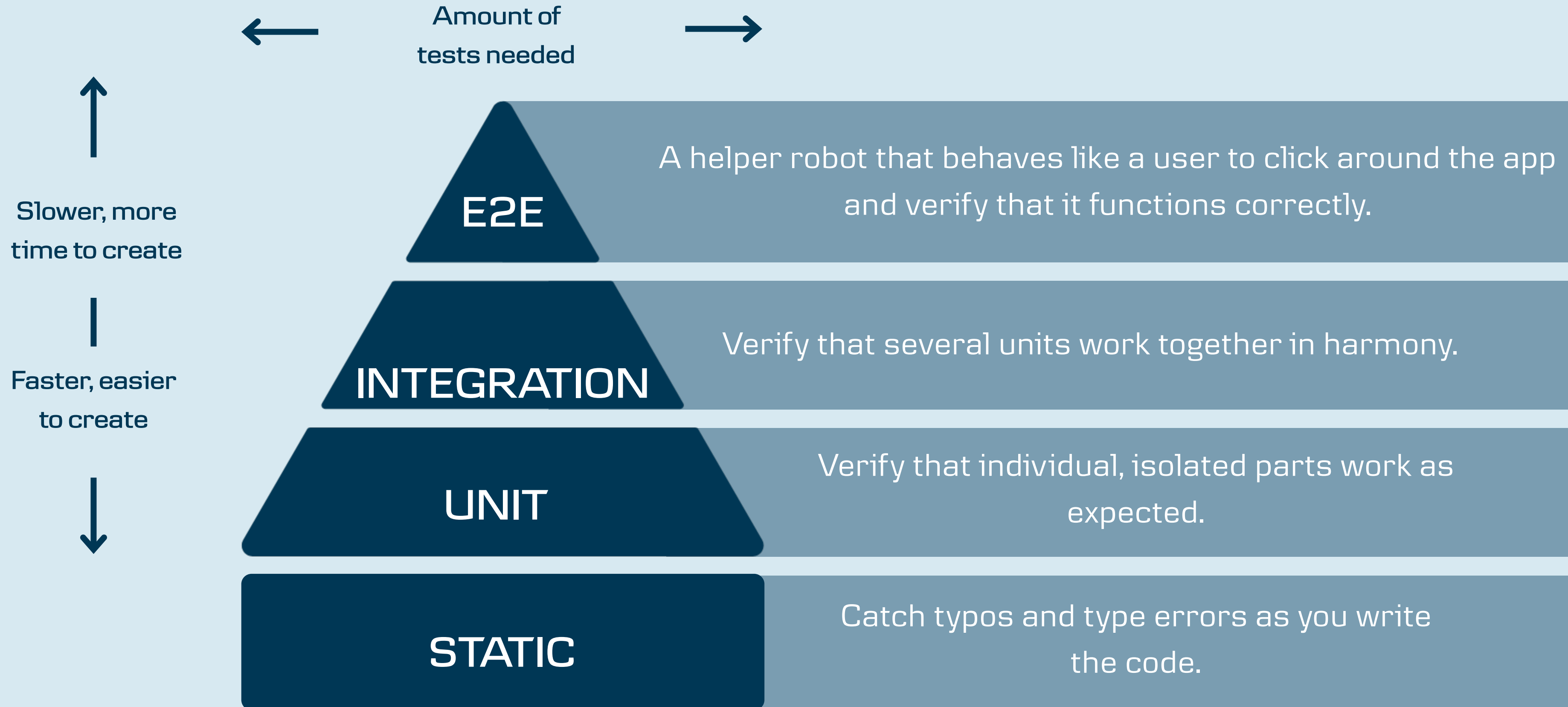
How not to forget to test?

Seniors, this one is for you



Test types

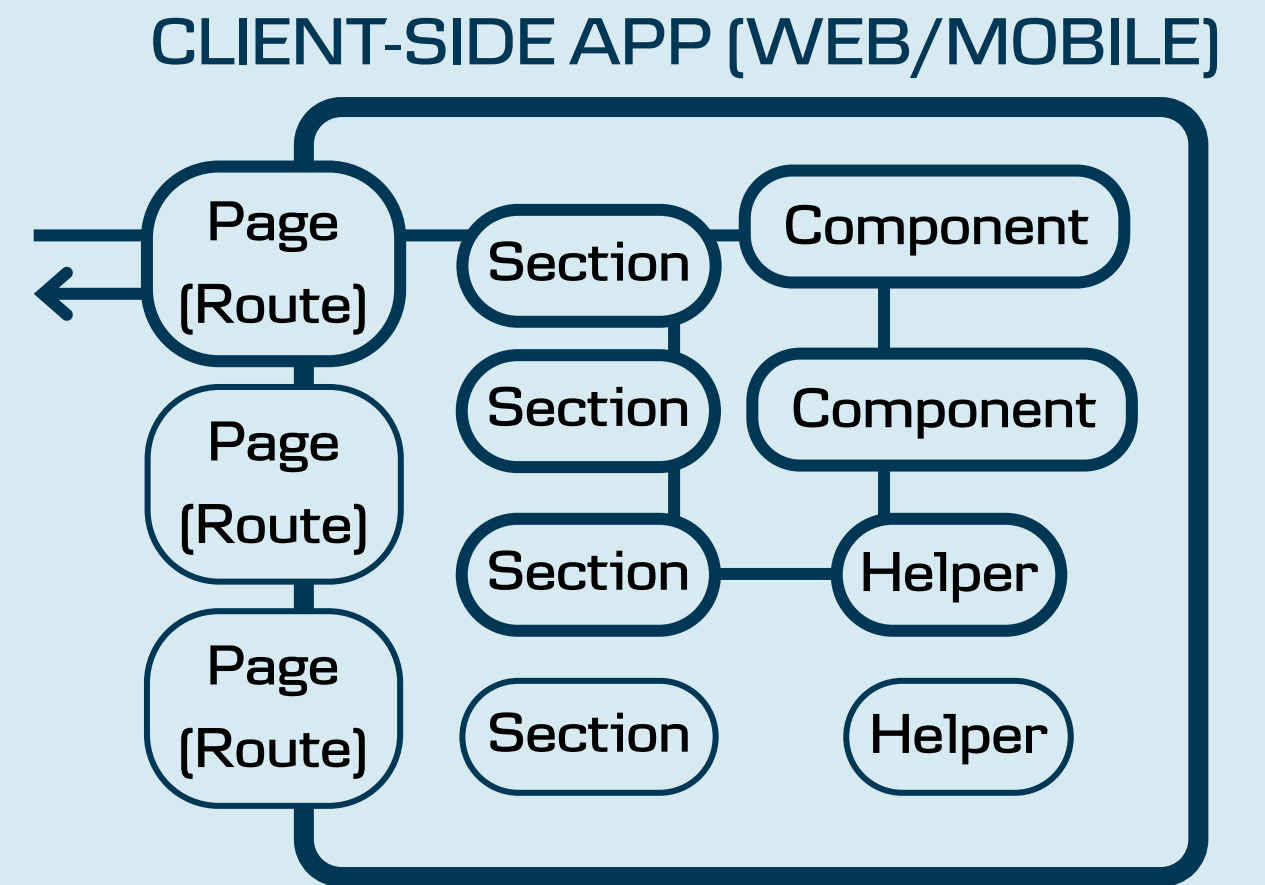
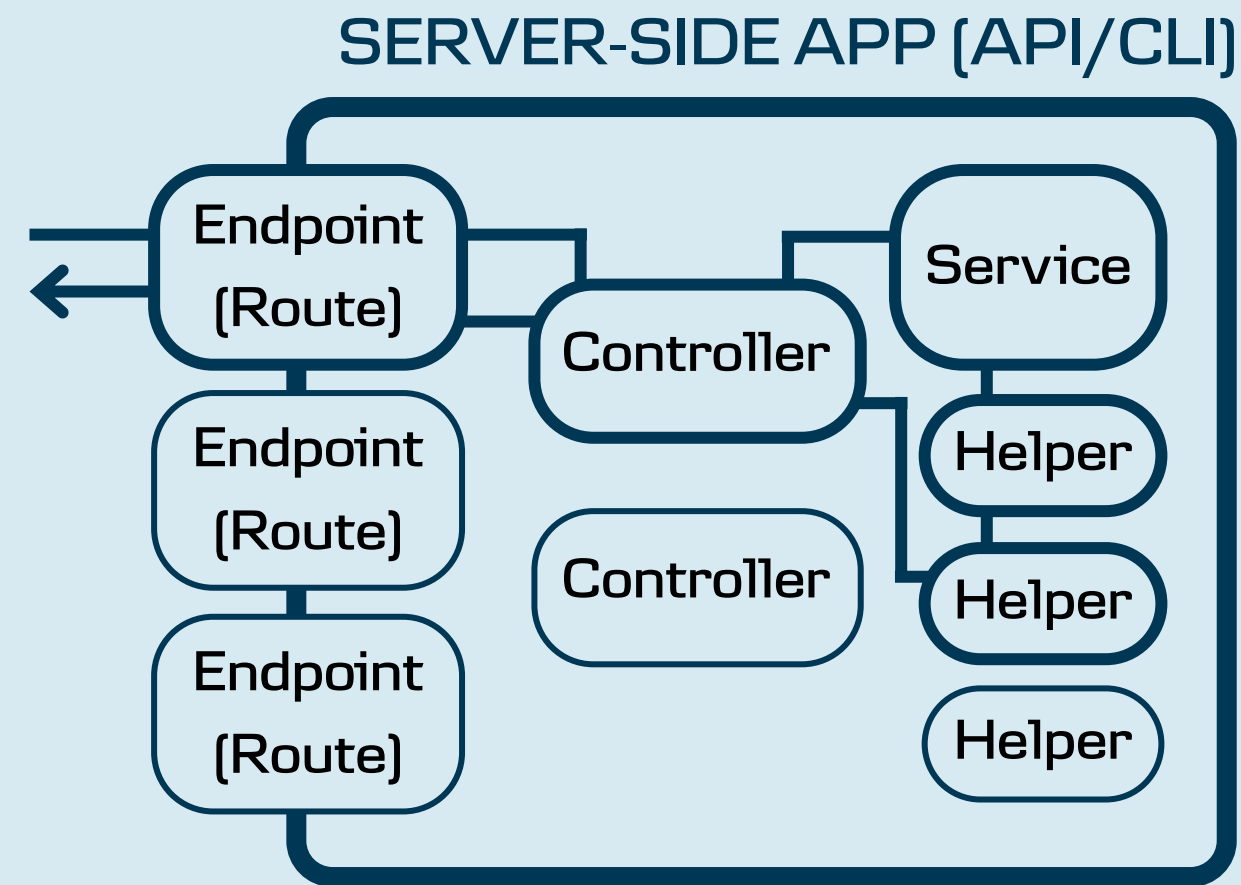
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E2E vs. Unit

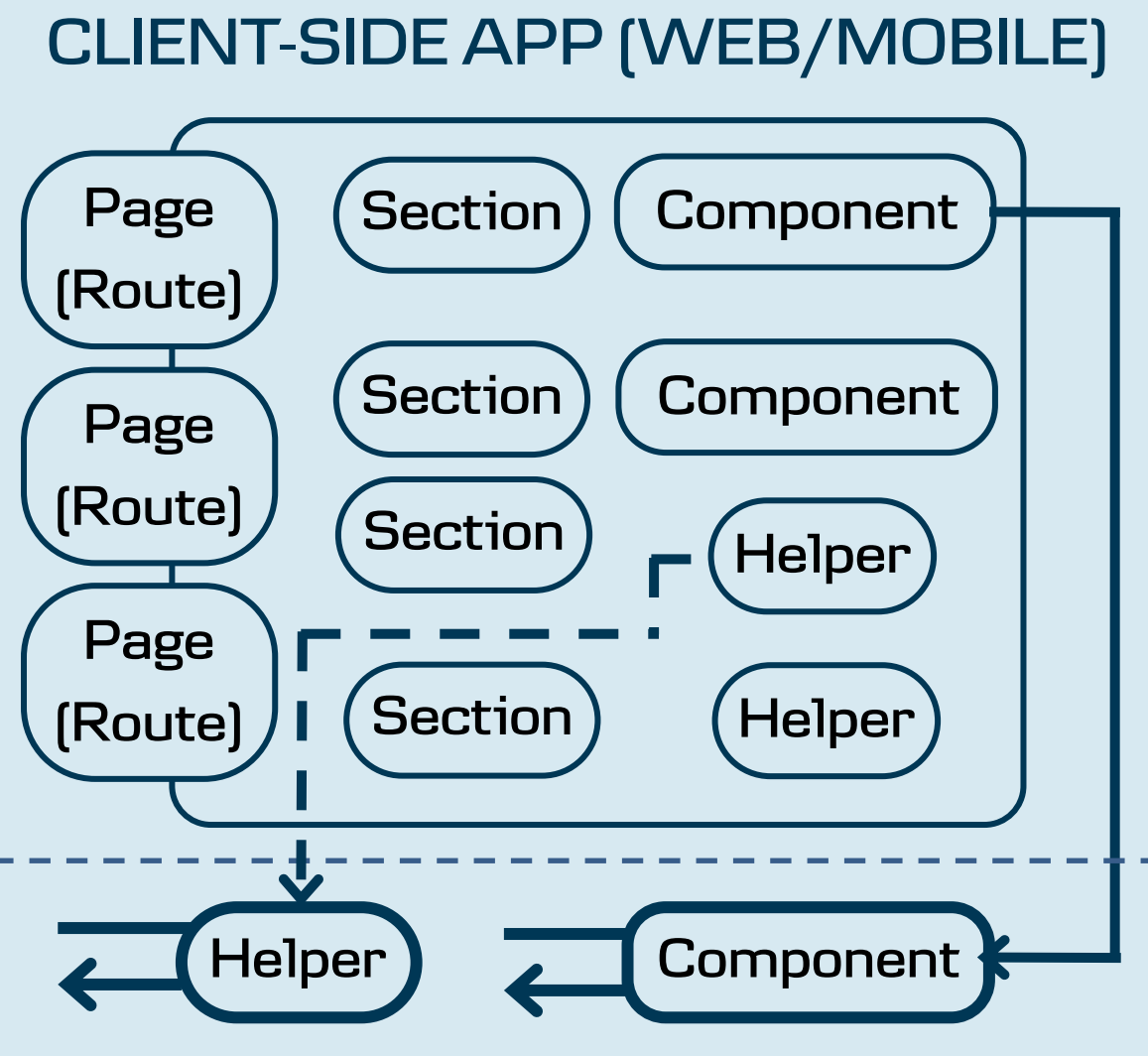
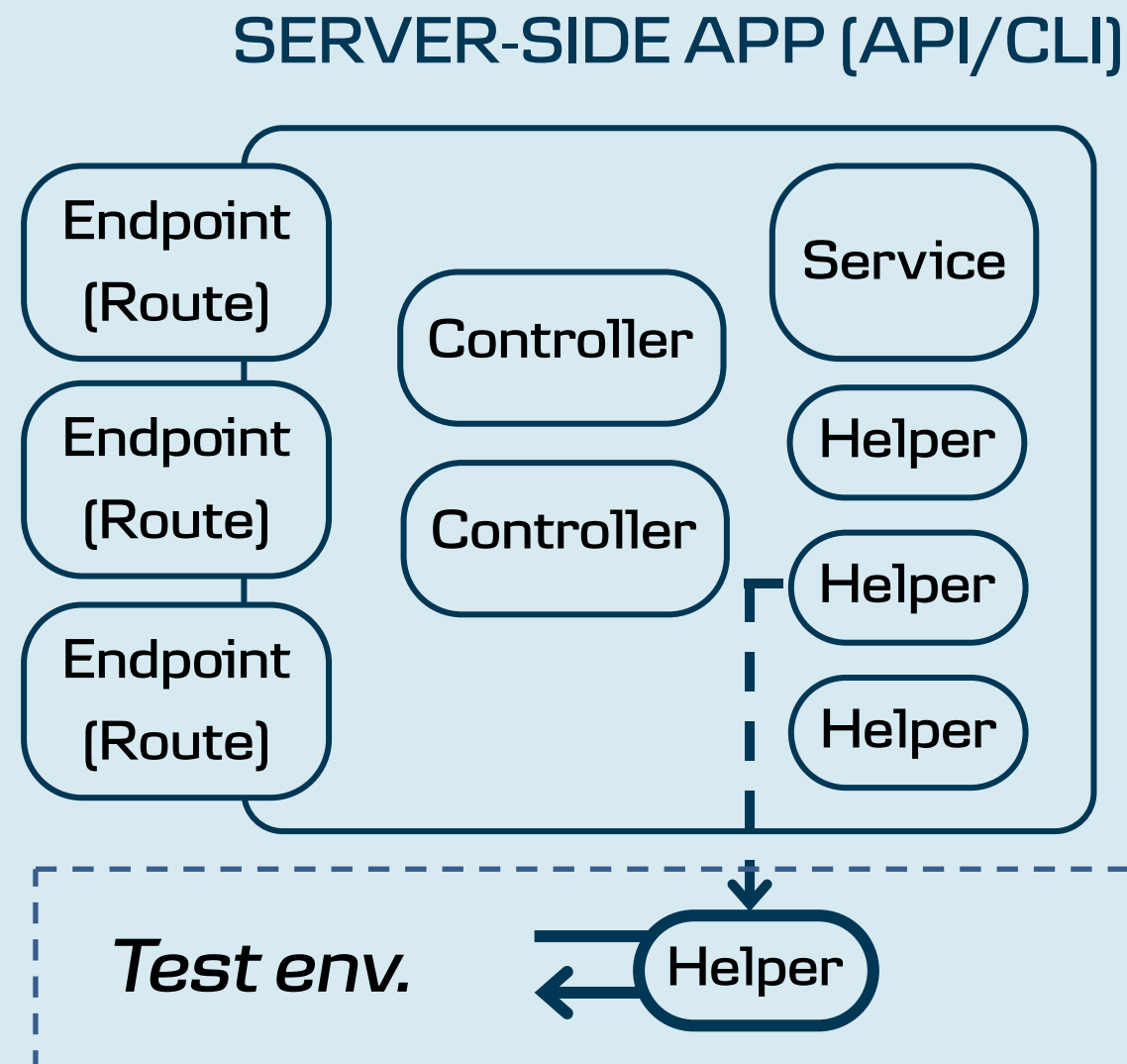
E2E

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



ALL UNIT TESTS PASSED!



Test code coverage

An underrated value that is rarely used beneficially

It can also show the quality of the tests, but the most importantly it shows tested and untested areas 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	<div><div></div></div>	33.33%	2/6	100%	0/0	100%	1/1	33.33%	2/6
src/component/counter	<div><div></div></div>	100%	5/5	100%	0/0	100%	5/5	100%	5/5
src/component/header	<div><div></div></div>	100%	2/2	100%	0/0	100%	1/1	100%	2/2
src/component/headline	<div><div></div></div>	100%	5/5	100%	2/2	100%	2/2	100%	5/5
src/component/login	<div><div></div></div>	100%	7/7	100%	4/4	100%	4/4	100%	7/7

100% COVERAGE
!=
NO BUGS

100% COVERAGE
==
NO RUNTIME ERRORS

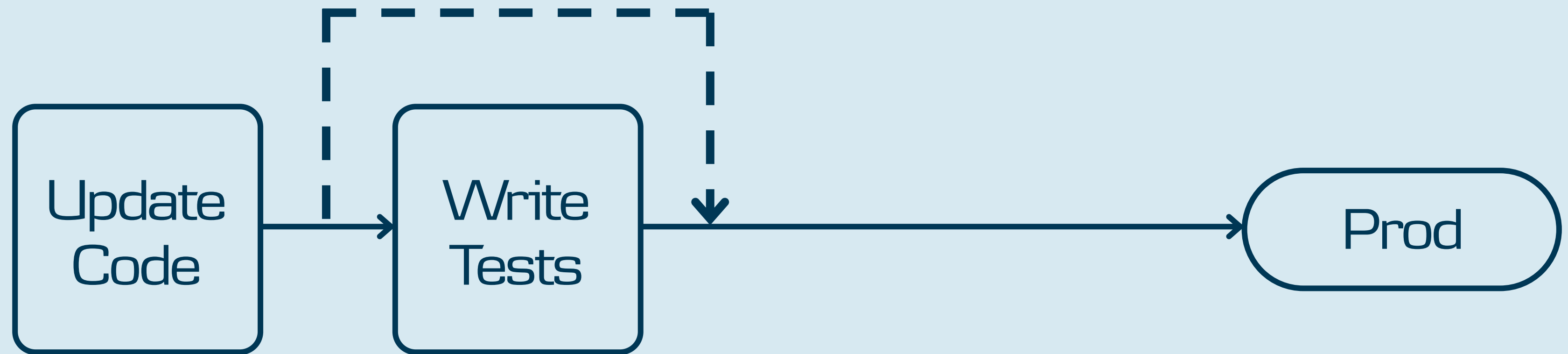
Default Development Flow



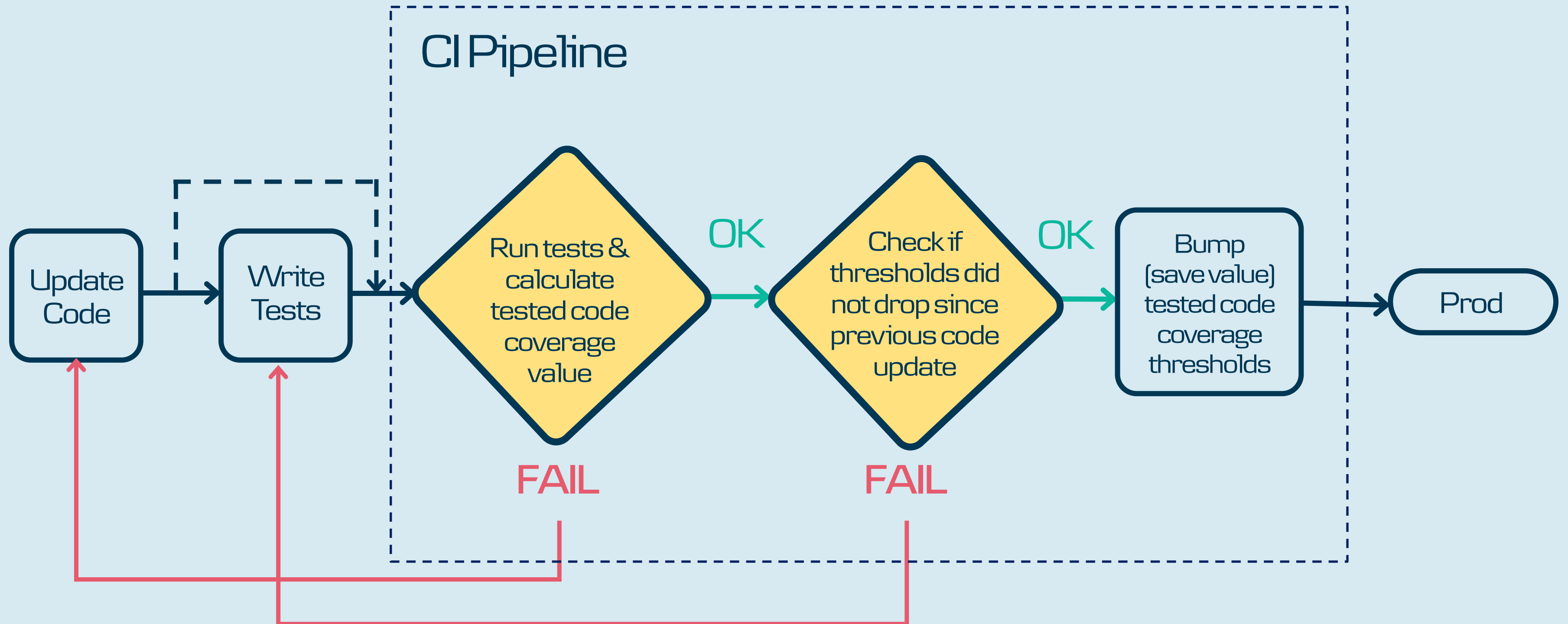
Test Driven Development Flow



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

Build
application
instrumented
to collect
coverage data

Start
application
in
TEST MODE

Run
E2E
tests

Generate
coverage
report and
calculate
coverage

Compare
new coverage
against
previously
saved
thresholds

Bump
(save new)
coverage
thresholds

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!