Testing the Application Code

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Overview

Understanding the different test types

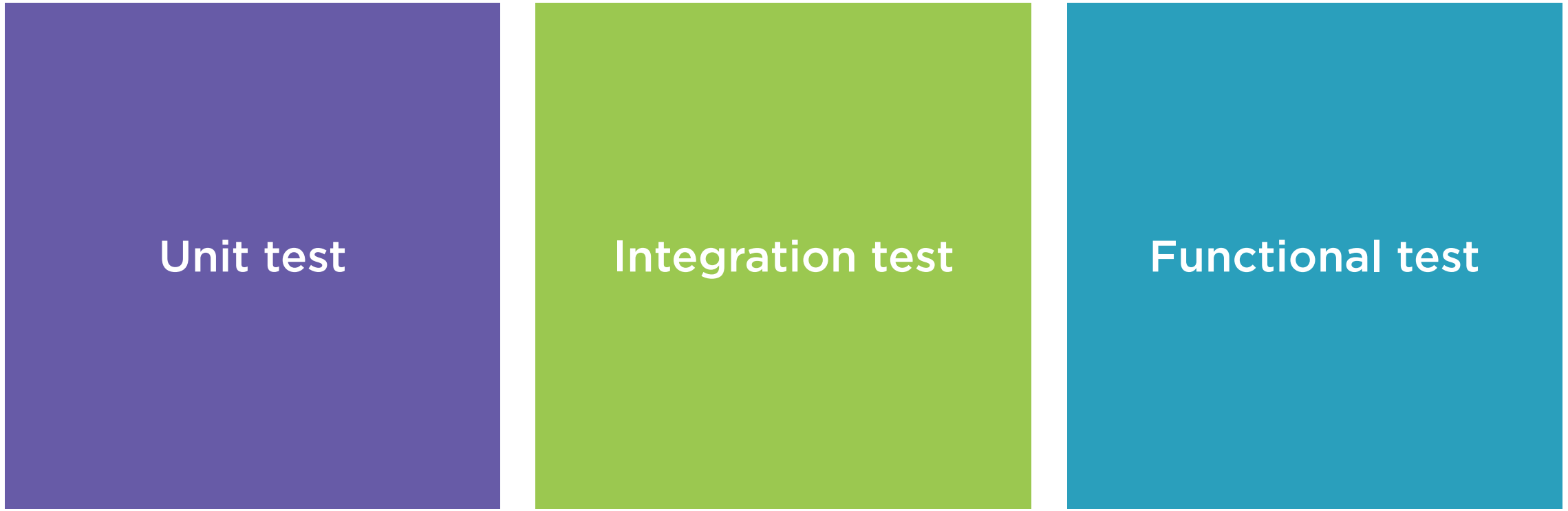
Creating unit tests

Writing integration tests

Did we create a testable code base using our architecture?

Understanding the Different Test Types

Different Types of Tests



A unit test is code that will,
in an automated way,
invoke code to be tested.
It will check an assumption
about the behavior of the
code under test.

Unit Tests

Test public API

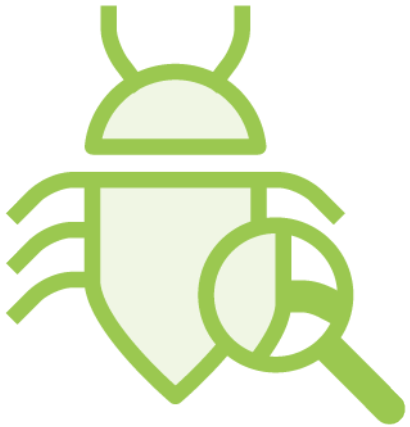
Run in isolation

Consistent results

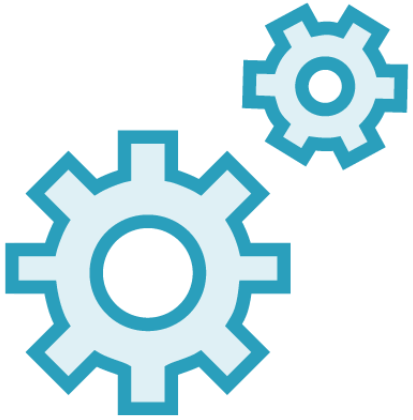
Fast

Often automated

Why Do We Need Unit Tests?



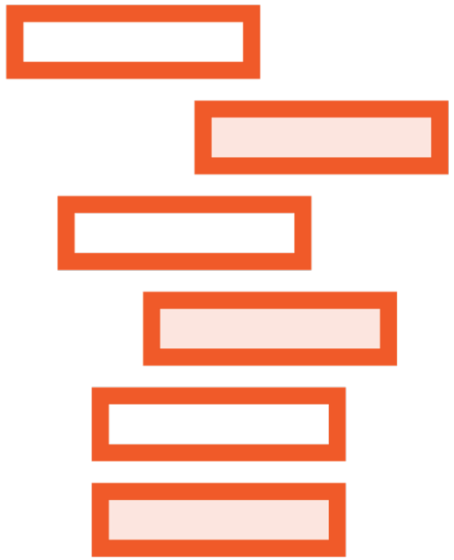
Find bugs



Change without fear of breaking something

Improve quality

Documentation of the code



Integration tests

- Test infrastructure code
- Interaction between different layers
- More work to set up
- Often linked with database

Functional tests

Test to see if the system behaves as expected

Written from the perspective of the user

Often involves UI testing

Creating Unit Tests

Setting Up Unit Tests

Test Project

xUnit

Mock data

Manual or using framework

Dependency injection

Used packages

- Moq
- Shouldly
- xUnit

Demo

Creating unit tests for Core code

Adding mocks

Writing Integration Tests

Demo

Testing the Infrastructure code

Demo

Testing the controller code

Summary

Application architecture supports testing on different levels

Different types of tests are required

Up next:

Adding a Blazor UI