

Testing

Java Accelerator 7

Lesson 3.1



Learning Objectives

01

Use Spring's built-in testing libraries to use TDD.

02

Test application routes using mocks.



Group Activity: Investigate Testing

In this activity you will break into groups to research, review, and present.

For each topic, provide:

- A definition.
- How it fits into the development process.
- The benefits.

Suggested Time:

Topics to Investigate



TDD (test-driven development)



AAA (Arrange, Assert, Act)



Unit tests



Integration tests



System tests



Performance tests



User acceptance tests

Unit Testing

Unit Testing



Unit testing is a strategy to test isolated parts of a software system.



In many cases, the **unit** is self contained and easy to isolate, making unit testing straightforward.

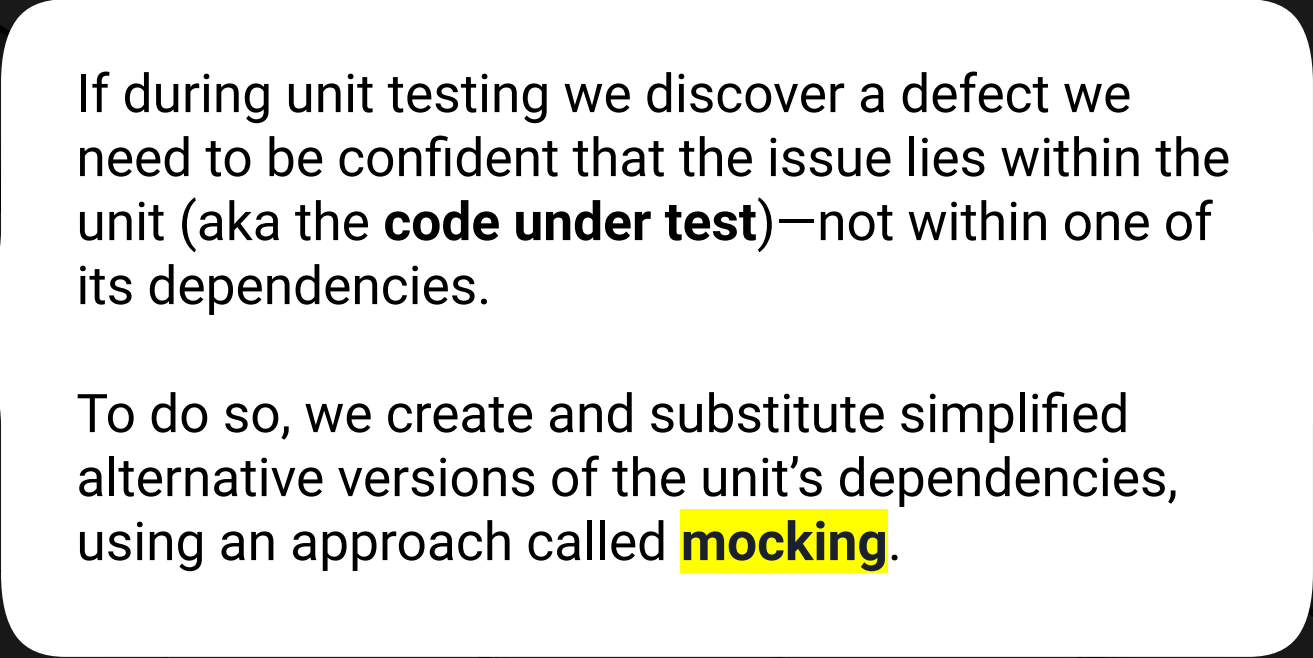


More often, however, the unit might have some number of dependencies.



Enter the **mocking** approach, in which we create a simplified alternative implementation of an object's surrounding dependencies.

Mocking



If during unit testing we discover a defect we need to be confident that the issue lies within the unit (aka the **code under test**)—not within one of its dependencies.

To do so, we create and substitute simplified alternative versions of the unit's dependencies, using an approach called **mocking**.

Mockito

Mockito

Mockito is one of the most popular and easy-to-use Java mocking frameworks.



Mockito

The Mockito library is already included in the start dependencies for our Spring Boot data-driven web service projects.

Mockito has a lot of features, but we'll concentrate on the mocking functionality—specifically, these methods:



`mock`



`doReturn`



`when`

Mockito

The Mockito framework can be used:



To create mocked implementations of interfaces and classes.



To mock individual methods tailored to individual test cases.



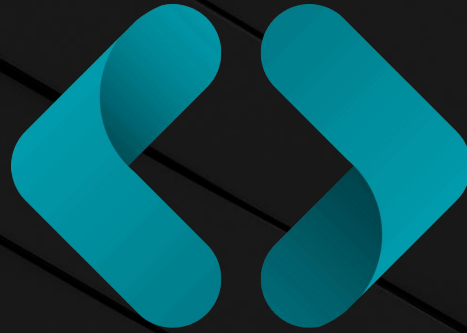
To ensure code test coverage using Spy functionality.



To inject mocked versions of dependencies into contexts such as Spring Boot.



In conjunction with other testing frameworks such as JUnit and MockMVC.



Time to <code>