

A decorative graphic on the left side of the slide, consisting of a network of thin, light-blue lines and small circles, resembling a circuit board or a stylized tree structure.

SPRING BOOT INTERMEDIATE

DAY 4

GOAL OF THE COURSE

- Solid basic understanding of Spring and Spring Boot
- Know different projects and be able to create implementations with them
- Be able to independently modify an existing Spring application

COURSE OVERVIEW

Introduction to
Spring + Spring
Boot + REST



More REST +
Data



**Testing +
messaging
services +
microservices**


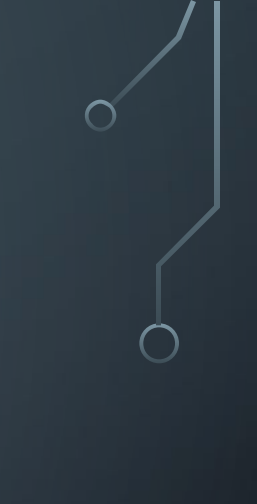
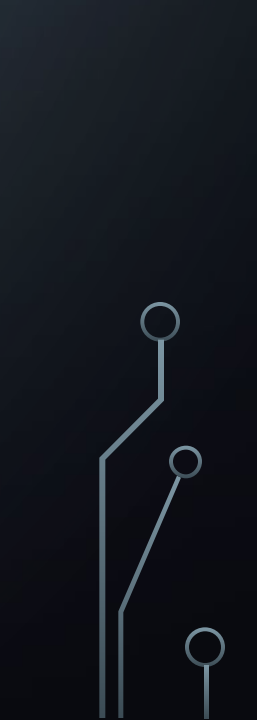


TODAY'S CONTENT

- Testing Spring Boot applications
 - Mocking components
 - Testing REST APIs
- Spring Boot and messaging systems
- Spring Boot and Kafka
- Spring Boot and microservices
 - Discovery
 - Client-side load balancing



HOW ARE YOU?

- How are you doing?
 - Do you expect any disturbances today?
 - What do you hope to learn today?
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- 
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TESTING

WE'RE GOING TO EXPLORE...

- Unit tests: running in isolation
 - MockBean
 - WebMvcTest
- Integration test: bootstrap Spring context
 - SpringBootTest
 - TestConfiguration
 - DataJpaTest



DEMO UNIT TESTING



EXERCISE

- Create a Spring Boot app
- Add Junit 5
- Add a simple method to do some basic calculations: `public double doCalcStuff(String operation, double d1, double d2)`
- Write 4 tests for the method (simple cases)
- Also write a test to test what happens on division by 0

TESTING CONTROLLERS

- `@WebMvcTest` slice annotation to set up the application context needed to test the controller layer



DEMO TESTING CONTROLLERS





EXERCISE

Create an Employee object

Add a controller, service, repository connected to H2 db

Write the tests for this controller



DEMO TESTING DATA LAYER

- `@DataJpaTest` is used to test the repository layer and sets up embedded database for testing purposes
- `@DataJdbcTest` can be used to test persistence layer and also works with an embedded database and JDBC repositories

EXERCISE

- Continue from the last exercise and test the data layer

INTEGRATION TEST

- Covering multiple units
- Covering multiple layers
- Covering flow of a functionality
- This is what `@SpringBootTest` is for
- Configures the application context before running the tests, so more than a unit can be tested

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DEMO INTEGRATION TESTING WITH `@SPRINGBOOTTEST`

EXERCISE

- Continue from the last exercises and check the complete flow from calling the endpoint to the persistence of the data

QUESTIONS?

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- Don't hesitate to contact me, I love to help!