

Java Technologies - Lab 2

[valid 2025-2026]

Spring Boot

Compulsory (1p)

- Create a Spring Boot application using [spring initializr](#). Add dependencies for Dev Tools, Spring Web.
 - Change the port at which Tomcat runs to 8081.
 - Add an endpoint /hello returning a greeting message defined in application.properties.
 - Add support for Spring Actuator in pom.xml and test some endpoints.
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Homework (2p)

Create a Spring Boot application that must run in multiple environments, such as development, and production. Each environment uses a different database, and the database connection details are provided in application-{profile}.yaml. The application should use JDBC for database access, conditional bean creation with Spring Expression Language (SpEL) and config property injection.

- The host, port, database name, user and password will be specified in the environment.
 - Choose between @ConfigurationProperties or @Value in order to read config data and motivate your decision.
 - Ensure that the application connects to the correct database automatically based on the active profile by printing some values from a database table; use a CommandLineRunner or ApplicationRunner.
 - Verify that command-line arguments take precedence over the ones in application.yaml.
 - Define a scenario where @Profile is used together with @ConditionalOnExpression in order to choose the right database.
 - Implement a custom Actuator endpoint or an InfoContributor to return information about the database to which the application is connected.
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Advanced (2p)

Create a scenario in which multiple services must share configuration but also adapt to different environments (dev, prod), using Spring Cloud Config.

- A Config Server backed by Git
 - Two Config Clients (Service A and Service B)
 - Environment-specific profiles
 - Runtime refresh for dynamic configuration updates
 - Prove that your setup is working (screenshots, server/client logs, etc.)
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Resources

- [Spring Boot Reference Documentation](#)
- [YAML: YAML Ain't Markup Language](#)
- [Spring Profiles](#)

- JDBC Basics