

# Spring Library Management Exercises - Documentation

## Exercise 1: Configuring a Basic Spring Application

- Set up Maven project with Spring Core.
- Create applicationContext.xml and define beans for BookService and BookRepository.
- Implement service and repository classes.
- Load context in a main class to test.

## Exercise 2: Implementing Dependency Injection

- Use setter injection in BookService for BookRepository.
- Wire beans using applicationContext.xml.
- Load context and test injection.

## Exercise 3: Implementing Logging with Spring AOP

- Add Spring AOP dependency.
- Create LoggingAspect class to log method execution times.
- Enable AspectJ support in applicationContext.xml.

## Exercise 4: Creating and Configuring a Maven Project

- Create LibraryManagement Maven project.
- Add dependencies for Spring Context, AOP, and WebMVC.
- Configure compiler plugin for Java 1.8.

## Exercise 5: Configuring the Spring IoC Container

- Define BookService and BookRepository beans in applicationContext.xml.
- Setup context loading and bean interaction in main class.

## Exercise 6: Configuring Beans with Annotations

- Use @Service for BookService, @Repository for BookRepository.
- Enable component scanning in applicationContext.xml.

## Exercise 7: Implementing Constructor and Setter Injection

- Configure BookService with constructor and setter injection in XML.
- Validate via test application.

## Exercise 8: Implementing Basic AOP with Spring

- Create LoggingAspect with @Before and @After advice.
- Enable AOP and register aspect in context.
- Observe method logs at runtime.

### **Exercise 9: Creating a Spring Boot Application**

- Generate Spring Boot app with Web, JPA, and H2 dependencies.
- Define Book entity, BookRepository, and BookController.
- Test REST endpoints using Spring Boot.