

# Exercise 1: Configuring a Basic Spring Application

---

## 1. Set Up a Spring Project

I created a maven project called `LibraryManagement` and added Spring dependencies in the `pom.xml`.

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
    http://maven.apache.org/xsd/maven-4.0.0.xsd">

  <modelVersion>4.0.0</modelVersion>

  <groupId>com.library</groupId>
  <artifactId>LibraryManagement</artifactId>
  <version>1.0-SNAPSHOT</version>

  <dependencies>
    <dependency>
      <groupId>org.springframework</groupId>
      <artifactId>spring-context</artifactId>
      <version>5.3.9</version>
    </dependency>
  </dependencies>
</project>
```

---

## 2. Configure the Application Context

I made `applicationContext.xml` file in `src/main/resources` folder with the beans.

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.springframework.org/schema/beans
    http://www.springframework.org/schema/beans/spring-beans.xsd">

  <bean id="bookRepository" class="com.library.repository.BookRepository"/>
```

```
<bean id="bookService" class="com.library.service.BookService">
    <property name="bookRepository" ref="bookRepository"/>
</bean>

</beans>
```

---

### 3. Define Service and Repository Classes

I created these 2 class files inside their package folders.

**File: BookRepository.java**

```
package com.library.repository;

public class BookRepository {
    public void saveBook() {
        System.out.println("Book saved to repo");
    }
}
```

**File: BookService.java**

```
package com.library.service;

import com.library.repository.BookRepository;

public class BookService {
    private BookRepository bookRepository;

    public void setBookRepository(BookRepository bookRepository) {
        this.bookRepository = bookRepository;
    }

    public void addBook() {
        bookRepository.saveBook();
        System.out.println("Book added from service");
    }
}
```

---

### 4. Run the Application

Created a main class to test the spring config.

**File: MainApp.java**

```
import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;
import com.library.service.BookService;

public class MainApp {
    public static void main(String[] args) {
        ApplicationContext context = new
ClassPathXmlApplicationContext("applicationContext.xml");
        BookService bookService = (BookService) context.getBean("bookService");
        bookService.addBook();
    }
}
```

---

**Output**

Book saved to repo  
Book added from service