**Exercise 5: Configuring the Spring IoC Container**

**Scenario:**

The library management application requires a central configuration for beans and dependencies.

**Steps:**

1. **Create Spring Configuration File:**
   * Create an XML configuration file named **applicationContext.xml** in the **src/main/resources** directory.
   * Define beans for **BookService** and **BookRepository** in the XML file.
2. **Update the BookService Class:**
   * Ensure that the **BookService** class has a setter method for **BookRepository**.
3. **Run the Application:**
   * Create a main class to load the Spring context and test the configuration.

**CODE:**

**src/main/resources/applicationContext.xml**

<?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">

<!-- Define the BookRepository bean -->

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

<!-- Define the BookService bean and inject the BookRepository bean -->

<bean id="bookService" class="com.example.library.BookService">

<property name="bookRepository" ref="bookRepository"/>

</bean>

</beans>

**BookService.java**

package com.example.library;

public class BookService {

private BookRepository bookRepository;

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void listBooks() {

bookRepository.findAll().forEach(book -> System.out.println(book));

}

}

**BookRepository.java**

package com.example.library;

import java.util.Arrays;

import java.util.List;

public class BookRepository {

public List<String> findAll() {

return Arrays.asList("Book 1", "Book 2", "Book 3");

}

}

**MainApplication.java**

package com.example.library;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class MainApplication {

public static void main(String[] args) {

ApplicationContext context = new ClassPathXmlApplicationContext("applicationContext.xml");

BookService bookService = context.getBean("bookService", BookService.class);

bookService.listBooks();

}

}

**OUTPUT:**

Book 1

Book 2

Book 3