**Exercise 7: Implementing Constructor and Setter Injection**

**Scenario:**

The library management application requires both constructor and setter injection for better control over bean initialization.

**Steps:**

1. **Configure Constructor Injection:**
   * Update applicationContext.**xml** to configure constructor injection for **BookService**.
2. **Configure Setter Injection:**
   * Ensure that the **BookService** class has a setter method for **BookRepository** and configure it in **applicationContext.xml**.
3. **Test the Injection:**
   * Run the **LibraryManagementApplication** main class to verify both constructor and setter injection.

**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">

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

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

<constructor-arg ref="bookRepository"/>

</bean>

</beans>

**BookService.java**

package com.example.library;

public class BookService {

private BookRepository bookRepository;

public BookService(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void listBooks() {

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

}

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

}

**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">

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

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

<constructor-arg ref="bookRepository"/>

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

</bean>

</beans>

**LibraryManagementApplication.java**

package com.example.library;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class LibraryManagementApplication {

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