**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.

**BookService.java**

package com.library.service;

import com.library.repository.BookRepository;

public class BookService {

private String serviceName; // Injected via constructor

private BookRepository bookRepository; // Injected via setter

// Constructor Injection

public BookService(String serviceName) {

this.serviceName = serviceName;

}

// Setter Injection

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void displayBooks() {

System.out.println(serviceName + ": Displaying books...");

bookRepository.fetchBooks();

}

}

**BookRepository.java**

package com.library.repository;

public class BookRepository {

public void fetchBooks() {

System.out.println("BookRepository: Fetching books from database...");

}

}

**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">

<!-- Repository Bean -->

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

<!-- Service Bean with constructor and setter injection -->

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

<!-- Constructor Injection -->

<constructor-arg value="LibraryService" />

<!-- Setter Injection -->

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

</bean>

</beans>

**MainApp.java**

package com.library;

import com.library.service.BookService;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class MainApp {

public static void main(String[] args) {

try (ClassPathXmlApplicationContext context = new ClassPathXmlApplicationContext("applicationContext.xml")) {

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

bookService.displayBooks();

}

}

}

