**EXERCISE 7: IMPLEMENTING CONSTRUCTOR AND SETTER INJECTION**

**Step 1: Configure Constructor Injection**

<?xml version="1.0" encoding="UTF-8"?>

<beans xmlns="http://www.springframework.org/schema/beans"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xmlns:context="http://www.springframework.org/schema/context"

xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans.xsd

http://www.springframework.org/schema/context

http://www.springframework.org/schema/context/spring-context.xsd">

<!-- Enable component scanning for the com.library package -->

<context:component-scan base-package="com.library"/>

<!-- Define BookRepository bean -->

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

<!-- Define BookService bean with constructor injection for BookRepository -->

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

<constructor-arg ref="bookRepository"/>

</bean>

</beans>

**Step 2: Configure Setter Injection**

package com.library.service;

import com.library.repository.BookRepository;

import org.springframework.beans.factory.annotation.Autowired;

import org.springframework.stereotype.Service;

@Service

public class BookService {

private final BookRepository bookRepository;

// Constructor injection

@Autowired

public BookService(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

// Setter method for BookRepository (for demonstration purposes)

@Autowired

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void performSomeService() {

System.out.println("Performing service in BookService");

bookRepository.displayRepositoryInfo();

}

}

**Step 3: Test the Injection**

package com.library;

import com.library.service.BookService;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class MainApplication {

public static void main(String[] args) {

// Load the Spring context from applicationContext.xml

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

// Retrieve the BookService bean

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

// Use the BookService to perform some action

bookService.performSomeService();

}

}