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

**Step 1: Configure Constructor Injection**

Update applicationContext.xml to configure constructor injection for BookService:

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

<constructor-arg ref="bookRepository"/>

</bean>

**Step 2: Configure Setter Injection**

Ensure that the BookService class has a setter method for BookRepository and configure it in applicationContext.xml:

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

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

</bean>

**Step 3: Test the Injection**

Run the LibraryManagementApplication main class to verify both constructor and setter injection:

package com.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.class);

System.out.println("Book Service: " + bookService);

System.out.println("Book Repository: " + bookService.getBookRepository());

}

}

**Output:**

Book Service: com.library.service.BookService@12345678

Book Repository: com.library.repository.BookRepository@90123456

This indicates that both constructor and setter injection have successfully initialized the BookService bean with the BookRepository dependency.

**Note:** In the BookService class, you need to have both a constructor and a setter method for BookRepository:

package com.library.service;

public class BookService {

private BookRepository bookRepository;

public BookService(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

// Service methods

}