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

**pom.xml:**

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<groupId>org.example</groupId>

<artifactId>LibraryManagement</artifactId>

<version>1.0-SNAPSHOT</version>

<packaging>jar</packaging>

<name>LibraryManagement</name>

<url>http://maven.apache.org</url>

<properties>

<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>

</properties>

<dependencies>

<dependency>

<groupId>junit</groupId>

<artifactId>junit</artifactId>

<version>3.8.1</version>

<scope>test</scope>

</dependency>

<!-- Spring Context -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.33</version>

</dependency>

</dependencies>

</project>

**applicationContent.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">

<!-- BookRepository Bean -->

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

<!-- BookService Bean using both constructor and setter injection -->

<bean id="bookService" class="org.example.BookService">

<!-- Constructor Injection -->

<constructor-arg value="Madurai Public Library"/>

<!-- Setter Injection -->

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

</bean>

</beans>

**BookRepository.java**

package org.example;

public class BookRepository {

public void saveBook(String title) {

System.out.println("Saving book: " + title);

}

}

**BookService.java**

package org.example;

public class BookService {

private final String libraryName; // Constructor injected

private BookRepository bookRepository; // Setter injected

// Constructor

public BookService(String libraryName) {

this.libraryName = libraryName;

}

// Setter for DI

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void addBook(String title) {

System.out.println("[" + libraryName + "] Adding book: " + title);

bookRepository.saveBook(title);

}

}

**App.java**

package org.example;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class App

{

public static void main(String[] args) {

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

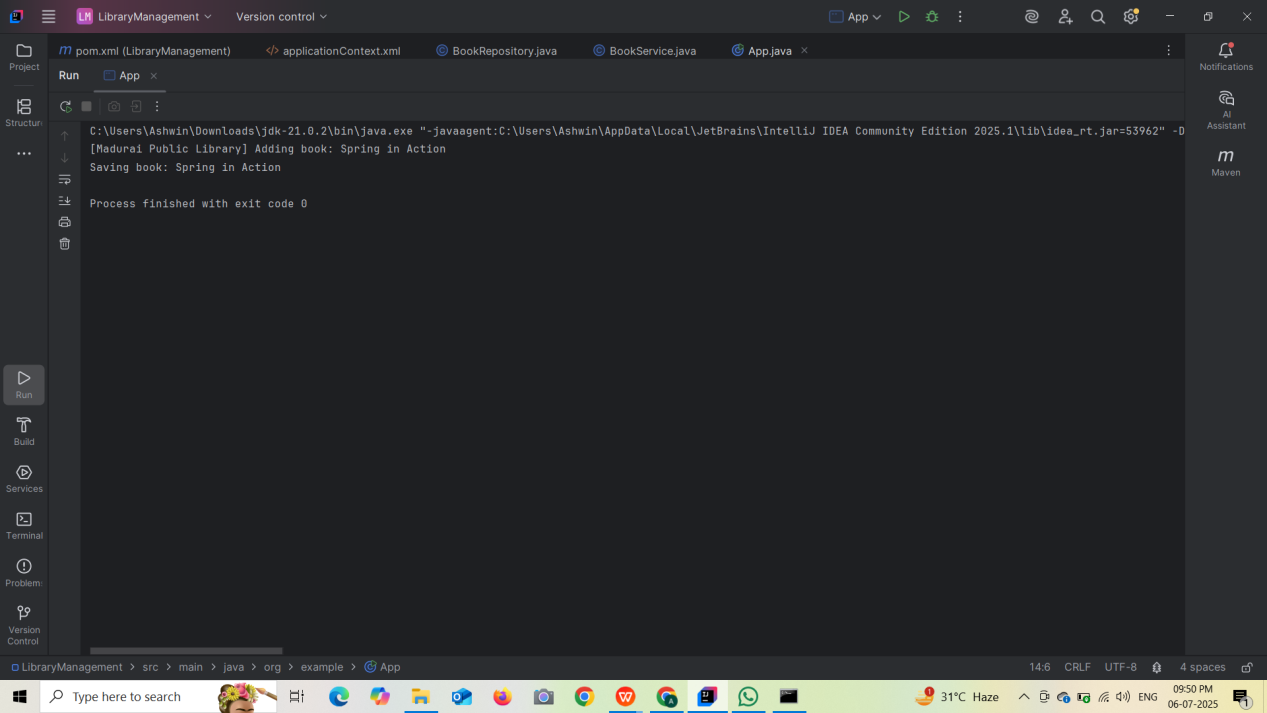
BookService bookService = (BookService) context.getBean("bookService");

bookService.addBook("Spring in Action");

}

}

**OUTPUT:**

****