**Spring Core\_Maven**

Exercise 7: Implementing Constructor and Setter Injection

**LibraryApp.java**

package com.example;

import com.example.service.BookService;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class LibraryApp {

public static void main(String[] args) {

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

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

bookService.addBook("The Alchemist");

}

}

**BookRepository.java**

package com.example.repository;

public class BookRepository {

public void save(String bookName) {

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

}

}

**BookService.java**

package com.example.service;

import com.example.repository.BookRepository;

public class BookService {

private BookRepository bookRepository;

private String serviceName;

// Constructor for constructor injection

public BookService(String serviceName) {

this.serviceName = serviceName;

}

// Setter for setter injection

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void addBook(String bookName) {

System.out.println("[" + serviceName + "] Adding book: " + bookName);

bookRepository.save(bookName);

}

}

**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 for Repository -->

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

<!-- Constructor + Setter injection in BookService -->

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

<!-- Constructor injection -->

<constructor-arg value="Library Management Service" />

<!-- Setter injection -->

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

</bean>

</beans>

**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>com.example</groupId>

<artifactId>library-management</artifactId>

<version>1.0-SNAPSHOT</version>

<dependencies>

<!-- Spring Context Dependency -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.34</version>

</dependency>

</dependencies>

<build>

<plugins>

<plugin>

<groupId>org.codehaus.mojo</groupId>

<artifactId>exec-maven-plugin</artifactId>

<version>3.1.0</version>

<configuration>

<mainClass>com.example.LibraryApp</mainClass>

</configuration>

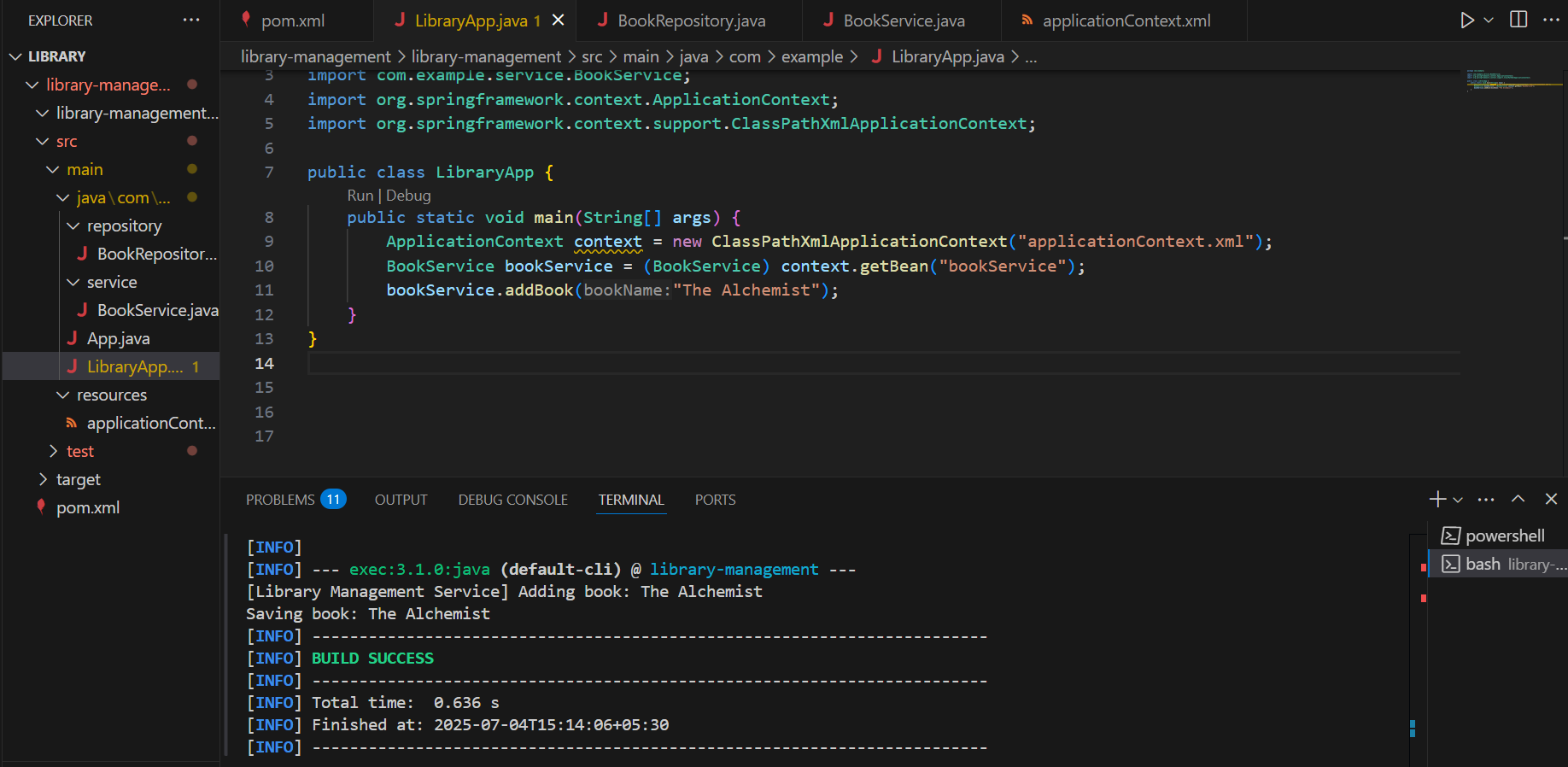
</plugin>

</plugins>

</build>

</project>

**Output:**

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