**Exercise 2: Implementing Dependency Injection**

**Scenario:**

In the library management application, you need to manage the dependencies between the BookService and BookRepository classes using Spring's IoC and DI.

**Steps:**

1. **Modify the XML Configuration:**

Update **applicationContext.xml** to wire **BookRepository** into **BookService**.

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

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

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

    </bean>

</beans>

1. **Update the BookService Class:**

Ensure that **BookService** class has a setter method for **BookRepository**.

**BookService.java**

package com.library.service;

import com.library.repository.BookRepository;

public class BookService {

    private BookRepository bookRepository;

    public void setBookRepository(BookRepository bookRepository) {

        this.bookRepository = bookRepository;

    }

    public void addBook(String bookName) {

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

        bookRepository.saveBook(bookName);

    }

}

**BookRepository.java**

package com.library.repository;

public class BookRepository {

    public void saveBook(String bookName) {

        System.out.println("Book '" + bookName + "' saved to the repository.");

    }

}

**MainApp.java**

package com.library;

import com.library.service.BookService;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class MainApp {

    public static void main(String[] args) {

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

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

        bookService.addBook("Spring in Action");

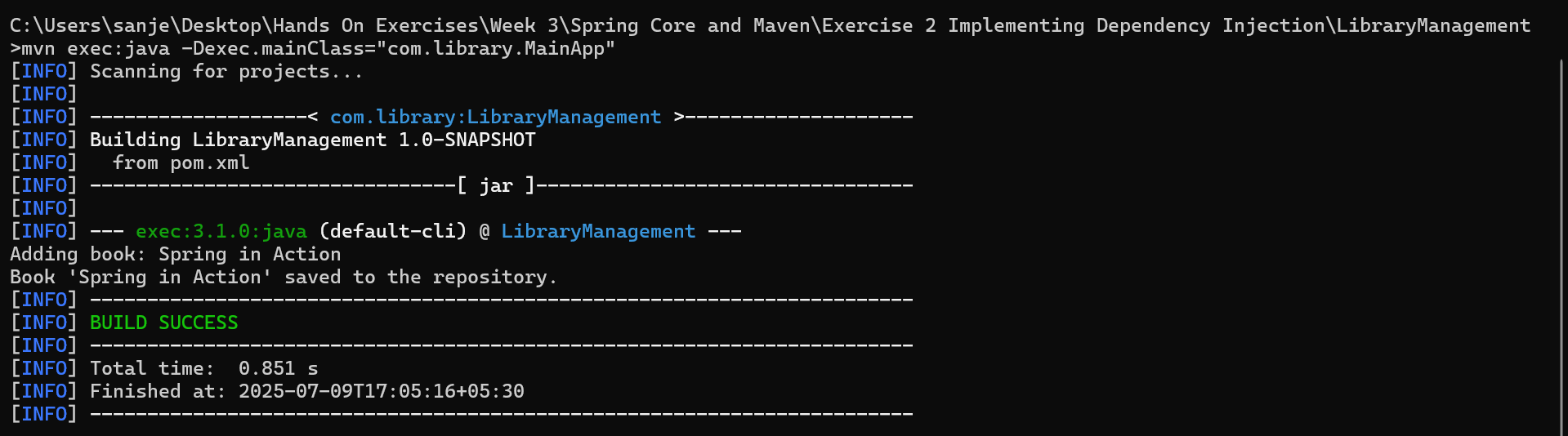
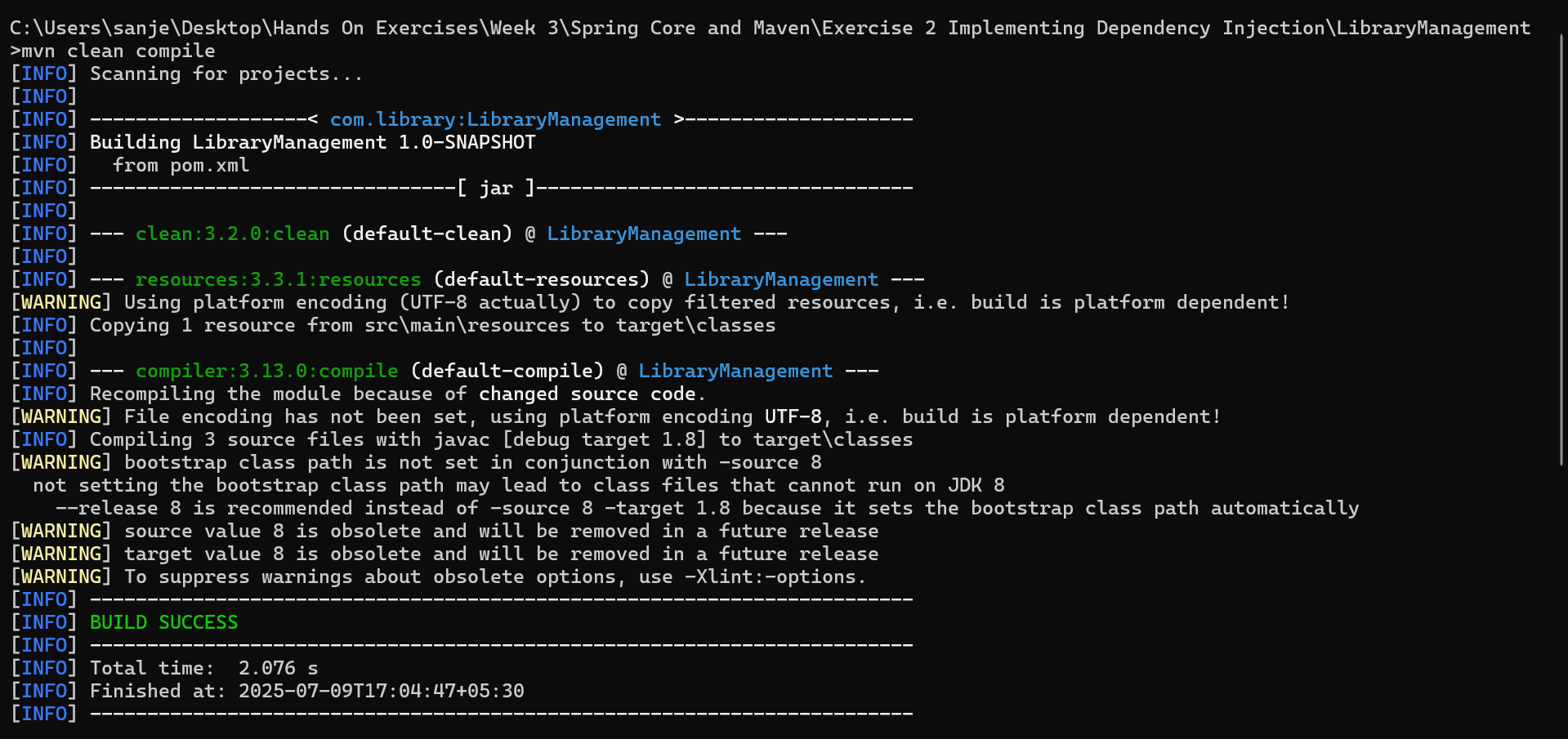
    }

}

1. **Test the Configuration:**

Run the **LibraryManagementApplication** main class to verify the dependency injection

**Output:**

****