Step 1: Enable Component Scanning

Update applicationContext.xml to include component scanning for the com.library package:

<?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"/>

</beans>

In the above configuration file, we have added the context:component-scan element to enable component scanning for the com.library package. This allows Spring to automatically detect and register beans annotated with @Component, @Service, @Repository, etc.

Step 2: Annotate Classes

Use @Service annotation for the BookService class:

package com.library.service;

import com.library.repository.BookRepository;

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

import org.springframework.stereotype.Service;

@Service

public class BookServiceImpl implements BookService {

private BookRepository bookRepository;

@Autowired

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

@Override

public void addBook(String title, String author) {

// implementation

}

}

Use @Repository annotation for the BookRepository class:

package com.library.repository;

import org.springframework.stereotype.Repository;

@Repository

public class BookRepositoryImpl implements BookRepository {

// implementation

}

In the above code, we have annotated the BookServiceImpl class with @Service and the BookRepositoryImpl class with @Repository. We have also used @Autowired to inject the BookRepository instance into the BookServiceImpl class.

Step 3: Test the Configuration

Run the LibraryManagementApplication main class to verify the annotation-based configuration:

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

bookService.addBook("Java Programming", "John Doe");

}

}