**1: Configuring a Basic Spring Application**

**BookRepository.java**

package com.library.repository;

public class BookRepository {

public void storeBook(String title) {

System.out.println("Repository: Book '" + title + "' stored successfully.");

}

}

**BookService.java**

package com.library.service;

import com.library.repository.BookRepository;

public class BookService {

private BookRepository repo;

public void setRepo(BookRepository repo) {

this.repo = repo;

}

public void registerBook(String title) {

System.out.println("BookService: Processing book '" + title + "'");

repo.storeBook(title);

}

}

**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="bookRepo" class="com.library.repository.BookRepository" />

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

<property name="repo" ref="bookRepo"/>

</bean>

</beans>

#### **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) {

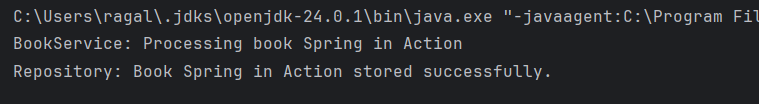
ApplicationContext context = new ClassPathXmlApplicationContext("applicationContext.xml");

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

service.registerBook("Spring in Action");

}

}

****

**2: Implementing Dependency Injection**

**pom.xml**

<?xml version="1.0" encoding="UTF-8"?>

<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>

<properties>

<maven.compiler.source>17</maven.compiler.source>

<maven.compiler.target>17</maven.compiler.target>

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

</properties>

<dependencies>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.34</version>

</dependency>

<dependency>

<groupId>org.slf4j</groupId>

<artifactId>slf4j-simple</artifactId>

<version>2.0.13</version>

</dependency>

</dependencies>

</project>

**BookRepository.java**

package com.library.repository;  
  
 public class BookRepository {  
 public void saveBook(String bookName) {  
 System.*out*.println("Book '" + bookName + "' has been saved to the repository.");  
 }  
 }

**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("BookService: Adding book '" + bookName + "'");  
 bookRepository.saveBook(bookName);  
 }  
 }

**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("Effective Java");  
 }  
 }

**ApplicationContext**

<?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

https://www.springframework.org/schema/beans/spring-beans.xsd">

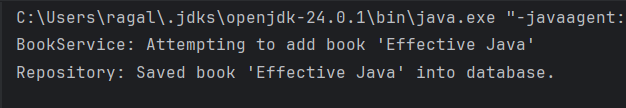
<bean id="bookRepo" class="com.library.repository.BookRepository"/>

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

<property name="repo" ref="bookRepo"/>

</bean>

</beans>



**4: Creating and Configuring a Maven Project**

**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.library</groupId>  
 <artifactId>LibraryManagement</artifactId>  
 <version>1.0-SNAPSHOT</version>  
  
 <dependencies>  
 <!-- Spring Core + Context -->  
 <dependency>  
 <groupId>org.springframework</groupId>  
 <artifactId>spring-context</artifactId>  
 <version>5.3.34</version>  
 </dependency>  
  
 <!-- Spring AOP -->  
 <dependency>  
 <groupId>org.springframework</groupId>  
 <artifactId>spring-aop</artifactId>  
 <version>5.3.34</version>  
 </dependency>  
  
 <!-- Spring Web MVC -->  
 <dependency>  
 <groupId>org.springframework</groupId>  
 <artifactId>spring-webmvc</artifactId>  
 <version>5.3.34</version>  
 </dependency>  
  
 <!-- Servlet API (provided) -->  
 <dependency>  
 <groupId>javax.servlet</groupId>  
 <artifactId>javax.servlet-api</artifactId>  
 <version>4.0.1</version>  
 <scope>provided</scope>  
 </dependency>  
  
 <!-- Logging (optional) -->  
 <dependency>  
 <groupId>org.slf4j</groupId>  
 <artifactId>slf4j-simple</artifactId>  
 <version>2.0.13</version>  
 </dependency>  
 </dependencies>  
  
 <build>  
 <plugins>  
 <!-- Compiler Plugin for Java 8 -->  
 <plugin>  
 <groupId>org.apache.maven.plugins</groupId>  
 <artifactId>maven-compiler-plugin</artifactId>  
 <version>3.11.0</version>  
 <configuration>  
 <source>1.8</source>  
 <target>1.8</target>  
 </configuration>  
 </plugin>  
 </plugins>  
 </build>  
 </project>

**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  
 https://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>

**BookRepository.java**

package com.library.repository;  
  
 public class BookRepository {  
 public void saveBook(String bookName) {  
 System.*out*.println("BookRepository: Saving book '" + bookName + "' to the database.");  
 }  
 }

**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("BookService: Adding book '" + bookName + "'");  
 bookRepository.saveBook(bookName);  
 }  
 }

**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("Clean Code by Robert C. Martin");  
 }  
 }

