**Exercise 2: Implementing Dependency Injection**

**CODE :**

**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>LibraryDI</artifactId>

<version>1.0-SNAPSHOT</version>

<dependencies>

<!-- Spring Core & Context -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>6.1.4</version>

</dependency>

<!-- Logging -->

<dependency>

<groupId>org.slf4j</groupId>

<artifactId>slf4j-simple</artifactId>

<version>2.0.13</version>

</dependency>

</dependencies>

</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">

<!-- Repository bean -->

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

<!-- BookService with dependency injection -->

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

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

</bean>

</beans>

**BookRepository.java**

package com.library.repository;

import java.util.Arrays;

import java.util.List;

public class BookRepository {

public List<String> findAll() {

return Arrays.asList("Atomic Habits", "Zero to One", "Deep Work");

}

}

**BookService.java**

package com.library.service;

import com.library.repository.BookRepository;

import java.util.List;

public class BookService {

private BookRepository bookRepository;

// Setter method for Dependency Injection

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public List<String> getBooks() {

return bookRepository.findAll();

}

}

**LibraryApp.java**

package com.library;

import com.library.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 service = context.getBean("bookService", BookService.class);

service.getBooks().forEach(System.out::println);

}

}

**Output:**

