**WEEK-3**

**SPRING CORE AND MAVEN**

**Exercise 2: Implementing Dependency Injection**

**1.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>library-management</artifactId>

    <version>1.0-SNAPSHOT</version>

    <dependencies>

        <!-- Spring Core Dependencies -->

        <dependency>

            <groupId>org.springframework</groupId>

            <artifactId>spring-context</artifactId>

            <version>5.3.34</version>

        </dependency>

        <!-- Logging (required by Spring) -->

        <dependency>

            <groupId>commons-logging</groupId>

            <artifactId>commons-logging</artifactId>

            <version>1.2</version>

        </dependency>

    </dependencies>

    <build>

        <plugins>

            <!-- Plugin to run Java main class -->

            <plugin>

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

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

                <version>3.1.0</version>

                <executions>

                    <execution>

                        <goals><goal>java</goal></goals>

                    </execution>

                </executions>

                <configuration>

                    <mainClass>com.library.LibraryManagementApplication</mainClass>

                </configuration>

            </plugin>

        </plugins>

    </build>

</project>

**2.Book.java:**

package com.library;

public class Book {

    private String title;

    public Book(String title) {

        this.title = title;

    }

    public String getTitle() {

        return title;

    }

}

**3.BookService.java:**

package com.library;

import java.util.List;

public class BookService {

    private BookRepository bookRepository;

    public void setBookRepository(BookRepository bookRepository) {

        this.bookRepository = bookRepository;

    }

    public List<Book> getAllBooks() {

        return bookRepository.findAllBooks();

    }

}

**4.BookRepository.java:**

package com.library;

import java.util.Arrays;

import java.util.List;

public class BookRepository {

    public List<Book> findAllBooks() {

        return Arrays.asList(

            new Book("The Alchemist"),

            new Book("Clean Code"),

            new Book("Spring in Action")

        );

    }

}

**5.LibraryManagementApplication.java:**

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("bookService");

        bookService.getAllBooks().forEach(book ->

            System.out.println("Book: " + book.getTitle())

        );

    }

}

**6.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.BookRepository" />

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

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

    </bean>

</beans>

**Output:**

