**Exercise 2: Implementing Dependency Injection**

**Step 1: Modify applicationContext.xml**

Define the beans and 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">

<!-- Define the BookRepository bean -->

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

<!-- Define the BookService bean and inject the BookRepository -->

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

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

</bean>

</beans>

**Step 2: Update the BookService class**

Add a setter method for BookRepository so Spring can inject it.

**BookService.java**

package com.example.service;

import com.example.repository.BookRepository;

public class BookService {

private BookRepository bookRepository;

// Setter for Dependency Injection

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void displayBooks() {

System.out.println("Fetching books from repository...");

bookRepository.getAllBooks();

}

}

**BookRepository.java**

package com.example.repository;

public class BookRepository {

public void getAllBooks() {

System.out.println("List of all books from the repository.");

}

}

**Step 3: Test the Configuration**

Create a LibraryManagementApplication class with a main method to load the context and test.

**LibraryManagementApplication.java**

package com.example;

import com.example.service.BookService;

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.displayBooks();

}

}

**OUTPUT:**

Fetching books from repository...

List of all books from the repository.