**Exercise 5: Configuring the Spring IoC Container**

Create an XML configuration file named applicationContext.xml in the src/main/resources directory

<?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 BookRepository Bean -->

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

    <!-- Define BookService Bean -->

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

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

    </bean>

</beans>

Ensure that BookService has a setter method for BookRepository

package com.library.service;

import com.library.repository.BookRepository;

public class BookService {

    private BookRepository bookRepository;

    // Setter method for dependency injection

    public void setBookRepository(BookRepository bookRepository) {

        this.bookRepository = bookRepository;

    }

    // A sample method to get a book

    public String getBookDetails(int bookId) {

        return bookRepository.findBookById(bookId);

    }

}

Create a main class to load the Spring Context

package com.library;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

import com.library.service.BookService;

public class LibraryManagementApplication {

    public static void main(String[] args) {

        // Load Spring Context

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

        // Retrieve the BookService bean

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

        // Test the BookService

        System.out.println(bookService.getBookDetails(1));

    }

}

