LoggingAspect.java

package com.library.aspect;

import org.aspectj.lang.annotation.After;

import org.aspectj.lang.annotation.Aspect;

import org.aspectj.lang.annotation.Before;

import org.springframework.stereotype.Component;

@Aspect

@Component

public class LoggingAspect {

// Before advice: Log before method execution

@Before("execution(\* com.library.service.BookService.\*(..))")

public void logBefore() {

System.out.println("LoggingAspect: Before method execution");

}

// After advice: Log after method execution

@After("execution(\* com.library.service.BookService.\*(..))")

public void logAfter() {

System.out.println("LoggingAspect: After method execution");

}

}

applicationContext.xml

<beans xmlns="http://www.springframework.org/schema/beans"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xmlns:context="http://www.springframework.org/schema/context"

xmlns:aop="http://www.springframework.org/schema/aop"

xsi:schemaLocation="http://www.springframework.org/schema/beans

http://www.springframework.org/schema/beans/spring-beans.xsd

http://www.springframework.org/schema/context

http://www.springframework.org/schema/context/spring-context.xsd

http://www.springframework.org/schema/aop

http://www.springframework.org/schema/aop/spring-aop.xsd">

<!-- Enable component scanning -->

<context:component-scan base-package="com.library"/>

<!-- Enable AspectJ auto-proxying -->

<aop:aspectj-autoproxy/>

<!-- Other beans like BookService and BookRepository can be defined here -->

</beans>

Main.java

package com.library;

import com.library.service.BookService;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class Main {

public static void main(String[] args) {

// Load the Spring context

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

// Get the BookService bean

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

// Test the BookService with AOP logging

bookService.addBook("Spring in Action");

}

}

LoggingAspect: Before method execution

Saving book: Spring in Action

Book added: Spring in Action

LoggingAspect: After method execution