Exercise 3: Spring AOP Logging

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Exercise 3: Implementing Logging with Spring AOP
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Scenario:
The application needs to log the execution time of service█layer methods.

1.  Add Spring AOP to pom.xml
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-aop</artifactId>
        <version>5.3.38</version>
    </dependency>

2.  Create aspect src/main/java/com/library/aspect/LoggingAspect.java

    package com.library.aspect;

    import org.aspectj.lang.ProceedingJoinPoint;
    import org.aspectj.lang.annotation.Around;
    import org.aspectj.lang.annotation.Aspect;
    import org.springframework.stereotype.Component;

    @Aspect
    @Component
    public class LoggingAspect {

        @Around("execution(* com.library..*(..))")
        public Object logExecutionTime(ProceedingJoinPoint pjp) throws Throwable {
            long start = System.currentTimeMillis();
            Object result = pjp.proceed();
            long time = System.currentTimeMillis() - start;
            System.out.println(pjp.getSignature() + " executed in " + time + "ms");
            return result;
        }
    }

3.  Enable AspectJ support in applicationContext.xml

    <beans ...>
        <context:component-scan base-package="com.library"/>
        <aop:aspectj-autoproxy/>
        ...
    </beans>

4.  Test:  Run LibraryManagementApplication
    Expected console (example):

    BookRepository: Initialized
    BookService: Initialized
    BookService: perform() called
    BookRepository: Display method called
    void com.library.service.BookService.perform() executed in 3ms
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