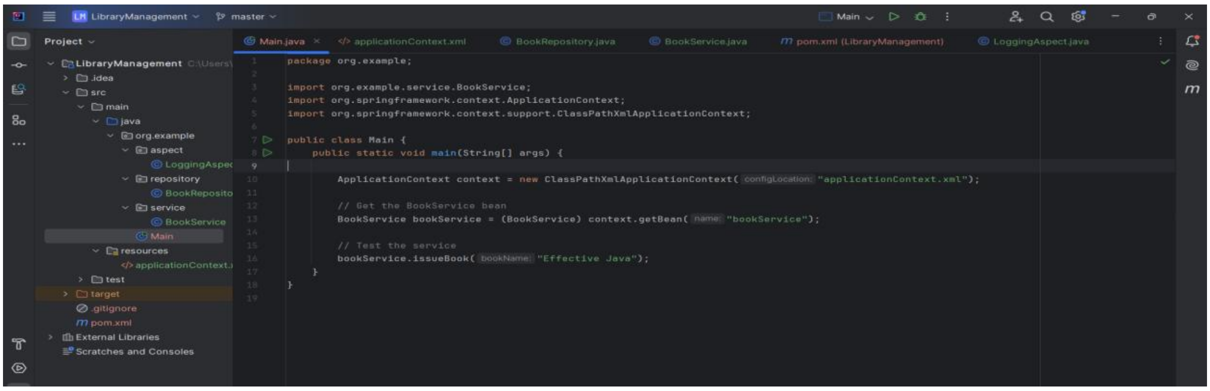
Week – 3 Additional HandsOn

Exercise 5: Configuring the Spring IoC Container

Scenario:

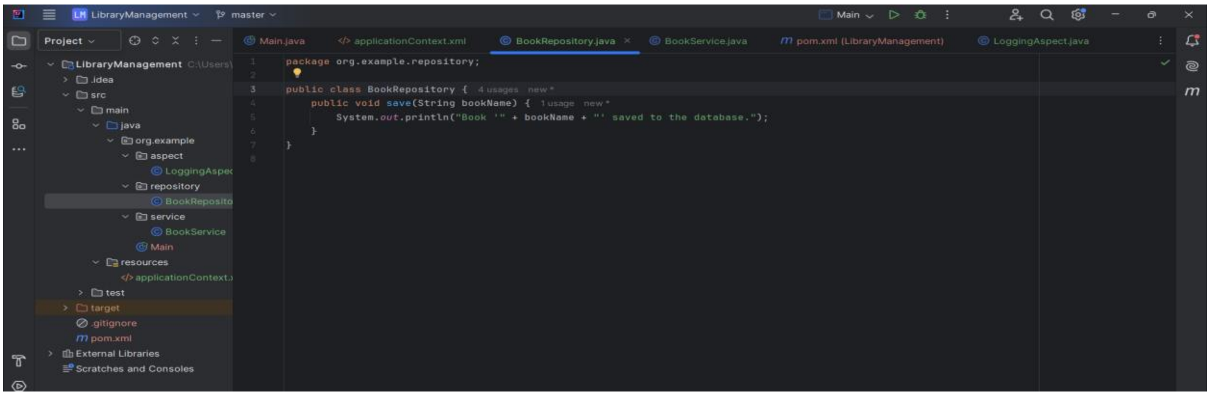
The library management application requires a central configuration for beans and dependencies.

Main.java



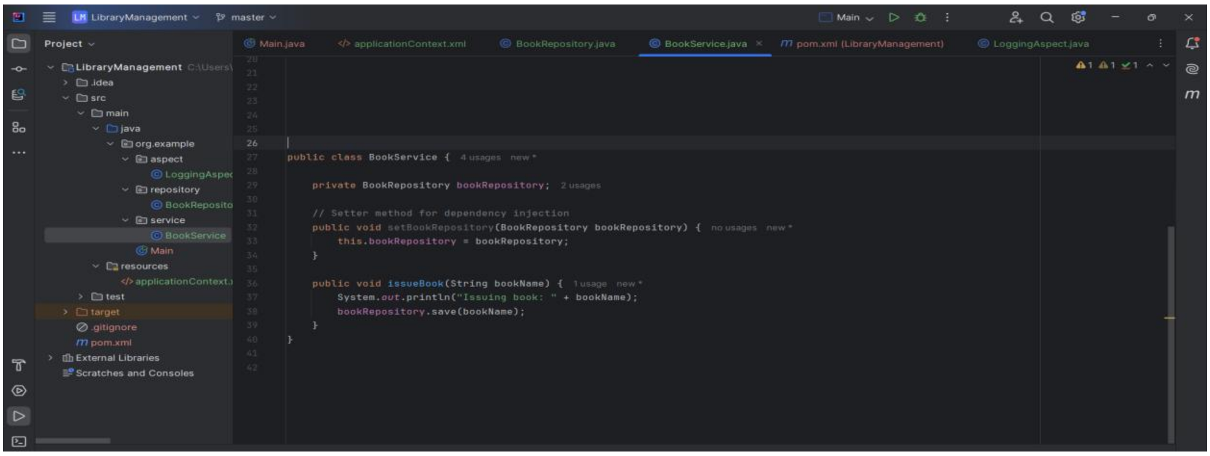
```java
package org.example;

import org.example.service.BookService;
import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;

public class Main {
    public static void main(String[] args) {

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

        // Get the BookService bean
        BookService bookService = (BookService) context.getBean("bookService");

        // Test the service
        bookService.issueBook("Effective Java");
    }
}
```

Repository



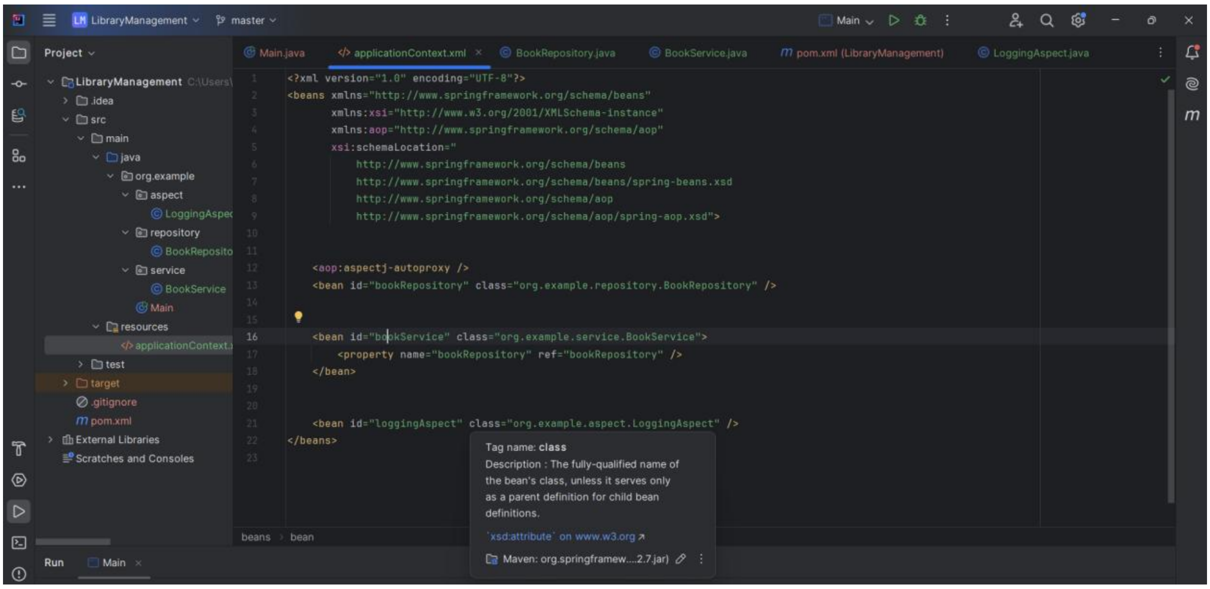
```java
package org.example.repository;

public class BookRepository {
    public void save(String bookName) {
        System.out.println("Book '" + bookName + "' saved to the database.");
    }
}
```

Service



```java
public class BookService {

    private BookRepository bookRepository;

    // Setter method for dependency injection
    public void setBookRepository(BookRepository bookRepository) {
        this.bookRepository = bookRepository;
    }

    public void issueBook(String bookName) {
        System.out.println("Issuing book: " + bookName);
        bookRepository.save(bookName);
    }
}
```

applicationContext.xml



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


    <aop:aspectj-autoproxy />
    <bean id="bookRepository" class="org.example.repository.BookRepository" />


    <bean id="bookService" class="org.example.service.BookService">
        <property name="bookRepository" ref="bookRepository" />
    </bean>


    <bean id="loggingAspect" class="org.example.aspect.LoggingAspect" />
</beans>
```

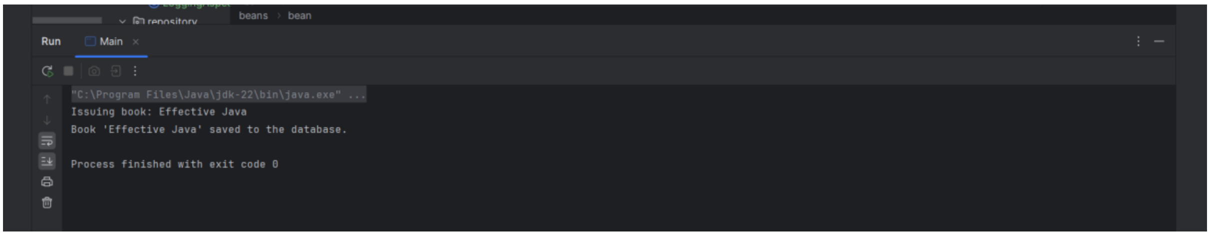
Tag name: **class**

Description : The fully-qualified name of the bean's class, unless it serves only as a parent definition for child bean definitions.

`xsd:attribute` on www.w3.org ↗

Maven: org.springframew....2.7.jar)

Output



```
"C:\Program Files\Java\jdk-22\bin\java.exe" ...
Issuing book: Effective Java
Book 'Effective Java' saved to the database.

Process finished with exit code 0
```