

## Exercise 2: Implementing Dependency Injection

### Code:

#### 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
           https://www.springframework.org/schema/beans/spring-beans.xsd">

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

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

</beans>
```

#### BookService.java:

```
package com.library.service;

import com.library.repository.BookRepository;

public class BookService {

    private BookRepository bookRepository;

    public void setBookRepository(BookRepository bookRepository) {
        this.bookRepository = bookRepository;
    }

    public void addBook(String bookName) {
        System.out.println("Adding book: " + bookName);
        bookRepository.saveBook(bookName);
    }
}
```

### LibraryApp.java:

```
package com.libraries;
```

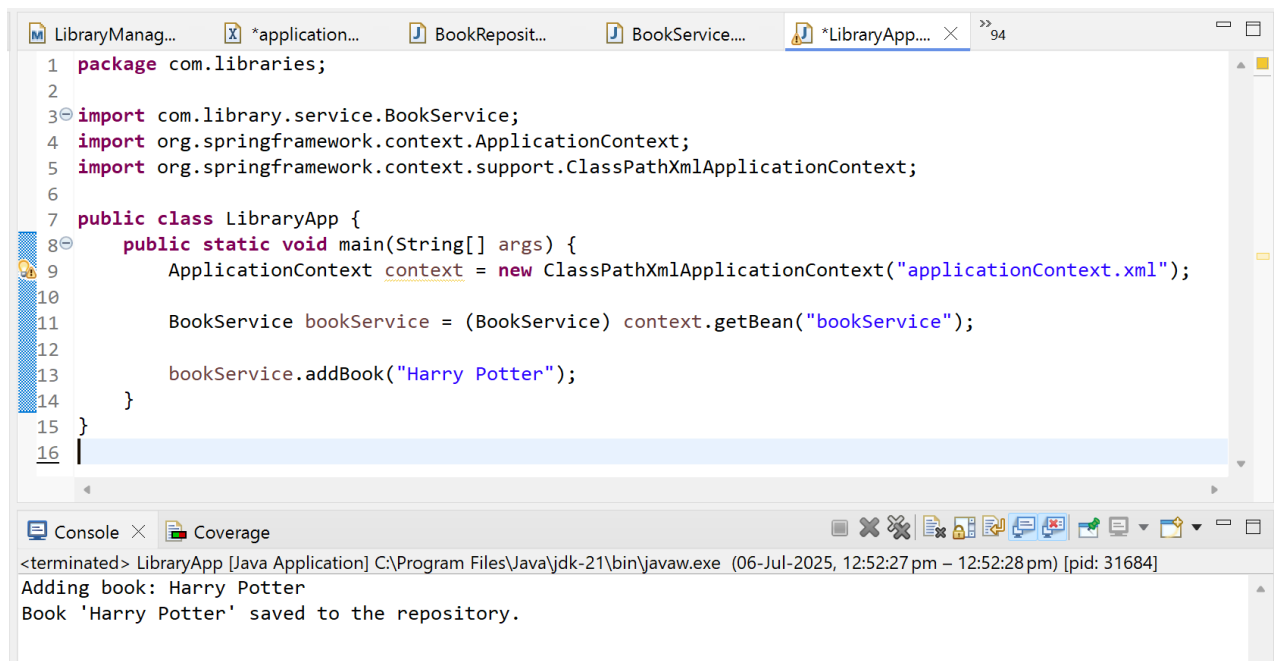
```
import com.library.service.BookService;
```

```
import org.springframework.context.ApplicationContext;
```

```
import org.springframework.context.support.ClassPathXmlApplicationContext;
```

```
public class LibraryApp {  
    public static void main(String[] args) {  
        ApplicationContext context = new ClassPathXmlApplicationContext("applicationContext.xml");  
        BookService bookService = (BookService) context.getBean("bookService");  
        bookService.addBook("Harry Potter");  
    }  
}
```

### Output:



The screenshot shows an IDE window with the following tabs: LibraryManag..., \*application..., BookReposit..., BookService..., and \*LibraryApp... The code in the editor is the same as shown in the previous block. The console output at the bottom shows the execution of the program:

```
<terminated> LibraryApp [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (06-Jul-2025, 12:52:27 pm - 12:52:28 pm) [pid: 31684]  
Adding book: Harry Potter  
Book 'Harry Potter' saved to the repository.
```