

# Spring core and Maven Exercises

## Exercise 1: Configuring a Basic Spring Application

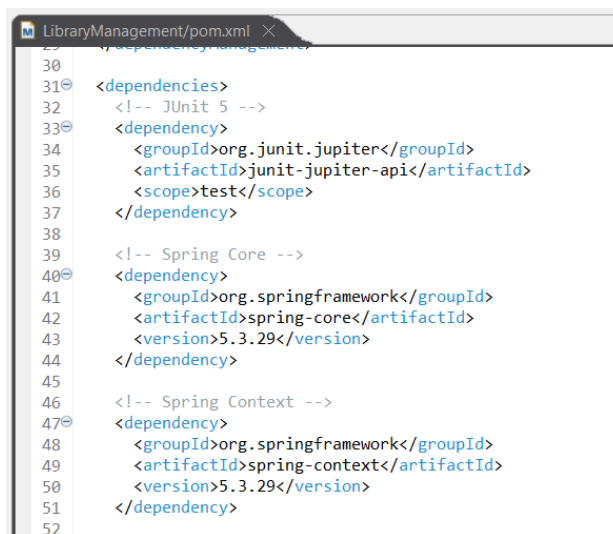
### Scenario:

Your company is developing a web application for managing a library. You need to use the Spring Framework to handle the backend operations.

### Steps:

#### 1. Set Up a Spring Project:

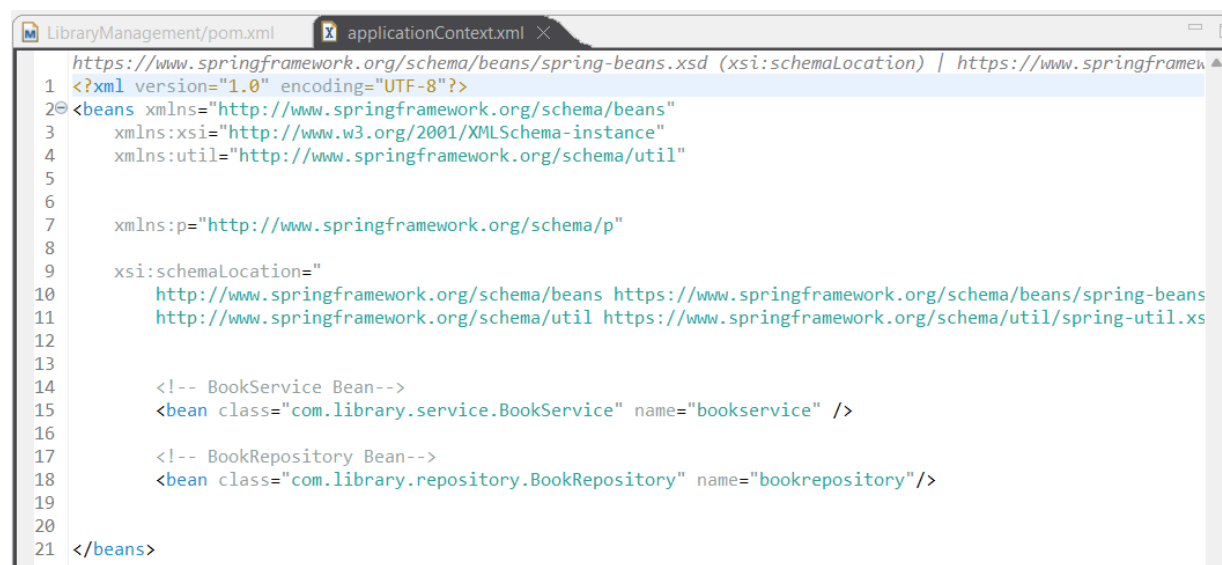
- Create a Maven project named **LibraryManagement**.
- Add Spring Core dependencies in the **pom.xml** file.



```
30
31 <dependencies>
32   <!-- JUnit 5 -->
33   <dependency>
34     <groupId>org.junit.jupiter</groupId>
35     <artifactId>junit-jupiter-api</artifactId>
36     <scope>test</scope>
37   </dependency>
38
39   <!-- Spring Core -->
40   <dependency>
41     <groupId>org.springframework</groupId>
42     <artifactId>spring-core</artifactId>
43     <version>5.3.29</version>
44   </dependency>
45
46   <!-- Spring Context -->
47   <dependency>
48     <groupId>org.springframework</groupId>
49     <artifactId>spring-context</artifactId>
50     <version>5.3.29</version>
51   </dependency>
52
```

#### 2. Configure the Application Context:

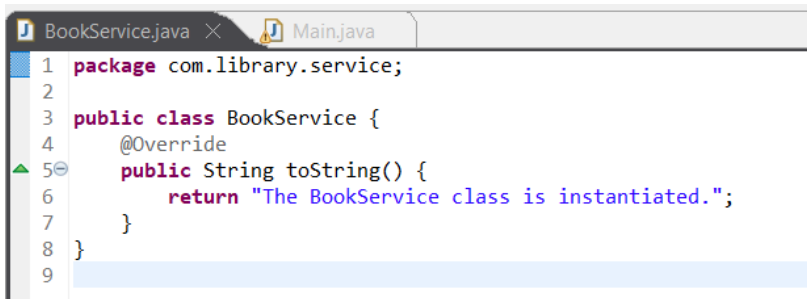
- Create an XML configuration file named **applicationContext.xml** in the **src/main/resources** directory.
- Define beans for **BookService** and **BookRepository** in the XML file.



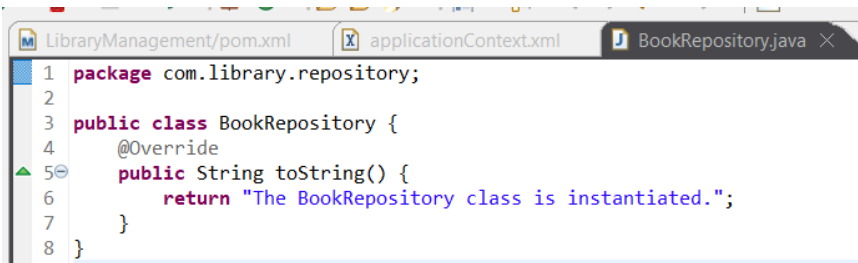
```
LibraryManagement/pom.xml  applicationContext.xml
https://www.springframework.org/schema/beans/spring-beans.xsd (xsi:schemaLocation) | https://www.springframew
1 <?xml version="1.0" encoding="UTF-8"?>
2 <beans xmlns="http://www.springframework.org/schema/beans"
3   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
4   xmlns:util="http://www.springframework.org/schema/util"
5
6
7   xmlns:p="http://www.springframework.org/schema/p"
8
9   xsi:schemaLocation="
10     http://www.springframework.org/schema/beans https://www.springframework.org/schema/beans/spring-beans
11     http://www.springframework.org/schema/util https://www.springframework.org/schema/util/spring-util.xs
12
13
14   <!-- BookService Bean-->
15   <bean class="com.library.service.BookService" name="bookservice" />
16
17   <!-- BookRepository Bean-->
18   <bean class="com.library.repository.BookRepository" name="bookrepository"/>
19
20
21 </beans>
```

### 3. Define Service and Repository Classes:

- Create a package **com.library.service** and add a class **BookService**.
- Create a package **com.library.repository** and add a class **BookRepository**.



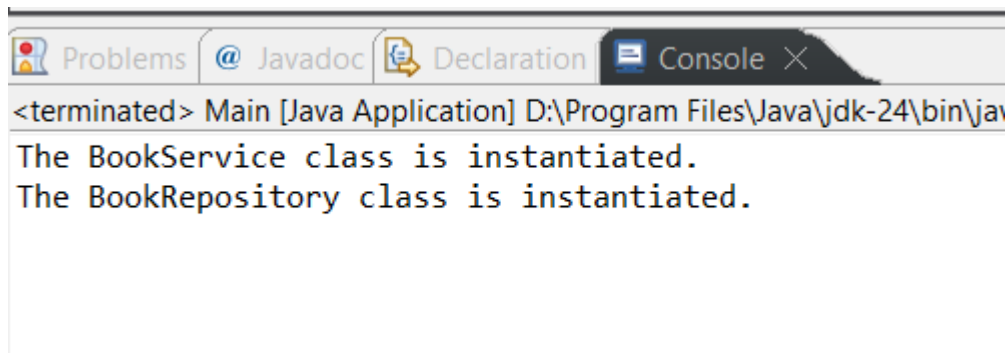
```
1 package com.library.service;
2
3 public class BookService {
4     @Override
5     public String toString() {
6         return "The BookService class is instantiated.";
7     }
8 }
9
```



```
1 package com.library.repository;
2
3 public class BookRepository {
4     @Override
5     public String toString() {
6         return "The BookRepository class is instantiated.";
7     }
8 }
9
```

### 4. Run the Application:

- Create a main class to load the Spring context and test the configuration.



```
<terminated> Main [Java Application] D:\Program Files\Java\jdk-24\bin\jav
The BookService class is instantiated.
The BookRepository class is instantiated.
```