**Week-3 Spring Core Maven**

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.

**Code:**

**BookRepository.java**

package com.bookstore.LibraryManagement;

public class BookRepository {

public void saveBook() {

System.*out*.println("Book saved to the database.");

}

}

**BookService.java**

package com.bookstore.LibraryManagement;

public class BookService {

private BookRepository bookRepository;

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void issueBook() {

System.*out*.println("Issuing book...");

bookRepository.saveBook();

}

}

**BookStoreApp.java**

package com.bookstore.LibraryManagement;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class BookStoreApp {

public static void main(String[] args) {

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

BookService service = (BookService) context.getBean("bookService");

service.issueBook();

}

}

**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.bookstore.LibraryManagement.BookRepository" />

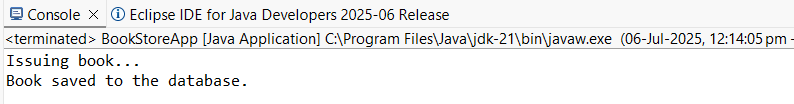
<bean id="bookService" class="com.bookstore.LibraryManagement.BookService">

<property name="bookRepository" ref="bookRepository"/>

</bean>

</beans>

**Output:**



1. **Implementing Dependency Injection**

**Scenario:**

In the library management application, you need to manage the dependencies between the BookService and BookRepository classes using Spring's IoC and DI.

**Code:**

**BookRepository.java**

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public class BookRepository {

public void saveBook() {

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}

}

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package com.bookstore.LibraryManagement;

public class BookService {

private BookRepository bookRepository;

public void setBookRepository(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void issueBook() {

System.*out*.println("Issuing book...");

bookRepository.saveBook();

}

}

**BookStoreApp.java**

package com.bookstore.LibraryManagement;

import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class BookStoreApp {

public static void main(String[] args) {

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

BookService service = (BookService) context.getBean("bookService");

service.issueBook();

}

}

**applicationContext.xml**

<?xml version="1.0" encoding="UTF-8"?>

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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.bookstore.LibraryManagement.BookRepository" />

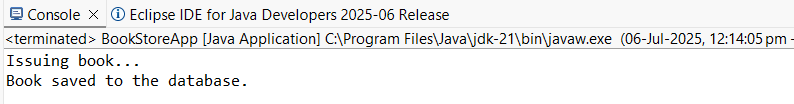
<bean id="bookService" class="com.bookstore.LibraryManagement.BookService">

<property name="bookRepository" ref="bookRepository"/>

</bean>

</beans>

**Output:**



1. **Creating and Configuring a Maven Project**

**Scenario:**

You need to set up a new Maven project for the library management application and add Spring dependencies.

**Code:**

**pom.xml**

<dependencies>

<!-- Spring Context -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.34</version>

</dependency>

<!-- Spring AOP -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-aop</artifactId>

<version>5.3.34</version>

</dependency>

<!-- Spring WebMVC -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-webmvc</artifactId>

<version>5.3.34</version>

</dependency>

</dependencies>

**Maven Compiler Plugin:**

<build>

<plugins>

<plugin>

<groupId>org.apache.maven.plugins</groupId>

<artifactId>maven-compiler-plugin</artifactId>

<version>3.8.1</version>

<configuration>

<source>1.8</source>

<target>1.8</target>

</configuration>

</plugin>

</plugins>

</build>

**BookRepository.java**

package com.bookstore.LibraryManagement;

public class BookRepository {

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System.*out*.println("Book saved to the database.");

}

}

**BookService.java**

package com.bookstore.LibraryManagement;

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**BookStoreApp.java**

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import org.springframework.context.ApplicationContext;

import org.springframework.context.support.ClassPathXmlApplicationContext;

public class BookStoreApp {

public static void main(String[] args) {

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

BookService service = (BookService) context.getBean("bookService");

service.issueBook();

}

}

**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.bookstore.LibraryManagement.BookRepository" />

<bean id="bookService" class="com.bookstore.LibraryManagement.BookService">

<property name="bookRepository" ref="bookRepository"/>

</bean>

</beans>

**Output:**

