**Exercise 1: Configuring a Basic Spring Application:**

Solution:

ApplicationContent.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

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

<!-- Tell Spring to manage BookRepository -->

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

<!-- Tell Spring to manage BookService and connect it to BookRepository -->

<bean id="bookService" class="com.library.Bookservice">

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

</bean>

</beans>

*After Creation of Packages(com.library, com.library.repository, com.library\_main), classes are created:*

Bookservice.java:

**package** com.library;

**import** com.library.repository.BookRepository;

**public** **class** Bookservice {

**private** BookRepository bookRepository;

// Setter for dependency injection

**public** **void** setBookRepository(BookRepository bookRepository) {

**this**.bookRepository = bookRepository;

}

**public** **void** displayBook() {

System.***out***.println("Book Retrieved: " + bookRepository.getBook());

}

}

BookRepository.java:

**package** com.library.repository;

**public** **class** BookRepository {

**public** String getBook() {

**return** "The Alchemist by Paulo Coelho";

}

}

MainApp.java:

**package** com.library\_main;

**import** org.springframework.context.ApplicationContext;

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

**import** com.library.Bookservice;

**public** **class** MainApp {

**public** **static** **void** main(String[] args) {

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

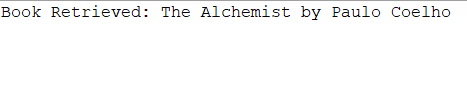
Bookservice bookService = (Bookservice) context.getBean("bookService");

bookService.displayBook();

}

}

Output:



**Exercise 2: Implementing Dependency Injection:**

**Solution:**

ApplicationContent.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">

<!-- Define BookRepository Bean -->

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

<!-- Define BookService Bean with Dependency Injection -->

<bean id="bookService" class="com.library.Bookservice">

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

</bean>

</beans>

Bookservice.java:

**package** com.library;

**import** com.library.repository.BookRepository;

**public** **class** Bookservice {

**private** BookRepository bookRepository;

// Setter for Dependency Injection

**public** **void** setBookRepository(BookRepository bookRepository) {

**this**.bookRepository = bookRepository;

}

**public** **void** displayBook() {

System.***out***.println("Book Retrieved: " + bookRepository.getBook());

}

}

BookRepository.java:

**package** com.library.repository;

**public** **class** BookRepository {

**public** String getBook() {

**return** "The Alchemist by Paulo Coelho";

}

}

MainApp.java:

**package** com.library\_main;

**import** org.springframework.context.ApplicationContext;

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

**import** com.library.Bookservice;

**public** **class** MainApp {

**public** **static** **void** main(String[] args) {

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

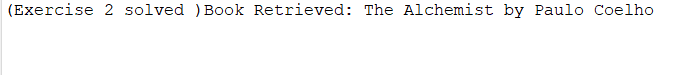
Bookservice bookService = (Bookservice) context.getBean("bookService");

bookService.displayBook();

}

}

Output:



**Exercise 4: Creating and Configuring a Maven Project:**

**Solution:**

ApplicationContent.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="helloService" class="com.library.HelloService" />

</beans>

HelloService.java:

**package** com.library;

**public** **class** HelloService {

**public** **void** sayHello() {

System.***out***.println("Spring is working in the Maven Project(Exercise 4 solved)");

}

}

MainApp.java:

**package** com.library\_main;

**import** org.springframework.context.ApplicationContext;

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

**import** com.library.HelloService;

**public** **class** MainApp {

**public** **static** **void** main(String[] args) {

ApplicationContext context = **new** ClassPathXmlApplicationContext("ApplicationContent.xml");

HelloService helloService = (HelloService) context.getBean("helloService");

helloService.sayHello();

}

}

Dependencies added in pom.xml:

<dependencies>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.36</version>

</dependency>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-aop</artifactId>

<version>5.3.36</version>

</dependency>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-webmvc</artifactId>

<version>5.3.36</version>

</dependency>

<dependency>

<groupId>javax.servlet</groupId>

<artifactId>javax.servlet-api</artifactId>

<version>4.0.1</version>

<scope>provided</scope>

</dependency>

</dependencies>

OUTPUT:

