**Week-3 Hands-on**

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

Pom.xml:

<project xmlns="http://maven.apache.org/POM/4.0.0"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0

http://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<groupId>com.example</groupId>

<artifactId>library-management</artifactId>

<version>1.0-SNAPSHOT</version>

<dependencies>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.34</version>

</dependency>

</dependencies>

<build>

<plugins>

<plugin>

<groupId>org.codehaus.mojo</groupId>

<artifactId>exec-maven-plugin</artifactId>

<version>3.1.0</version>

<configuration>

<mainClass>Main</mainClass>

</configuration>

</plugin>

</plugins>

</build>

</project>

Main.java:

import org.springframework.context.annotation.\*;

public class Main {

public static void main(String[] args) {

AnnotationConfigApplicationContext context = new AnnotationConfigApplicationContext(AppConfig.class);

BookService service = context.getBean(BookService.class);

service.addBook("Clean Code");

context.close();

}

}

@Configuration

class AppConfig {

@Bean

public BookService bookService() {

return new BookService(bookRepository());

}

@Bean

public BookRepository bookRepository() {

return new BookRepository();

}

}

class BookService {

private final BookRepository bookRepository;

public BookService(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void addBook(String title) {

bookRepository.save(title);

}

}

class BookRepository {

public void save(String title) {

System.out.println("Saving book: " + title);

}

}

OUTPUT:

A screenshot of a computer

AI-generated content may be incorrect.

**Exercise 2: Implementing Dependency Injection**

Pom.xml:

<dependencies>

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.34</version>

</dependency>

</dependencies>

Main.java:

import org.springframework.context.annotation.\*;

class BookService {

private BookRepository bookRepository;

public BookService(BookRepository bookRepository) {

this.bookRepository = bookRepository;

}

public void addBook(String title) {

bookRepository.save(title);

}

}

class BookRepository {

public void save(String title) {

System.out.println("Saving book: " + title);

}

}

@Configuration

class AppConfig {

@Bean

public BookRepository bookRepository() {

return new BookRepository();

}

@Bean

public BookService bookService(BookRepository bookRepository) {

return new BookService(bookRepository);

}

}

public class Main {

public static void main(String[] args) {

AnnotationConfigApplicationContext context = new AnnotationConfigApplicationContext(AppConfig.class);

BookService service = context.getBean(BookService.class);

service.addBook("Java Basics");

context.close();

}

}

**OUTPUT:**

A screenshot of a computer

AI-generated content may be incorrect.