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

**1. pom.xml (root)**

<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.library</groupId>

<artifactId>LibraryManagement</artifactId>

<version>1.0.0</version>

<!-- java 1.8 compiler -->

<properties>

<maven.compiler.source>1.8</maven.compiler.source>

<maven.compiler.target>1.8</maven.compiler.target>

</properties>

<dependencies>

<!-- spring context / core -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-context</artifactId>

<version>5.3.30</version>

</dependency>

<!-- spring aop -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-aop</artifactId>

<version>5.3.30</version>

</dependency>

<!-- spring webmvc -->

<dependency>

<groupId>org.springframework</groupId>

<artifactId>spring-webmvc</artifactId>

<version>5.3.30</version>

</dependency>

</dependencies>

<build>

<plugins>

<!-- compiler plugin already controlled via <properties/> -->

<!-- exec plugin: lets us run “mvn exec:java” without classpath hassle -->

<plugin>

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

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

<version>3.1.0</version>

<configuration>

<mainClass>com.library.LibraryApp</mainClass>

</configuration>

</plugin>

</plugins>

</build>

</project>

**2. src/main/java/com/library/config/AppConfig.java**

package com.library.config;

import org.springframework.context.annotation.ComponentScan;

import org.springframework.context.annotation.Configuration;

/\*\* annotation‑based spring configuration \*/

@Configuration

@ComponentScan(basePackages = "com.library")

public class AppConfig { }

**3. src/main/java/com/library/service/GreetingService.java**

package com.library.service;

import org.springframework.stereotype.Component;

@Component

public class GreetingService {

public String greet() {

return "hello, spring!";

}

}

**4. src/main/java/com/library/LibraryApp.java**

package com.library;

import org.springframework.context.annotation.AnnotationConfigApplicationContext;

import com.library.config.AppConfig;

import com.library.service.GreetingService;

/\*\* small test to prove the maven project + spring deps work \*/

public class LibraryApp {

public static void main(String[] args) {

AnnotationConfigApplicationContext ctx =

new AnnotationConfigApplicationContext(AppConfig.class);

GreetingService gs = ctx.getBean(GreetingService.class);

System.out.println("greeting: " + gs.greet());

ctx.close();

}

}

**build & run commands**

bash

mvn clean package

mvn exec:java

**OUTPUT**

