# Exercise 4 – Maven Project Setup with Spring

## 1. Objective

To set up a Maven-based Java project named LibraryManagement, configure it with Spring dependencies and use Maven Compiler Plugin to compile using Java 1.8.

## 2. Algorithm

Step 1: Create a Maven project using the Maven archetype generator.  
Step 2: Navigate to the generated project directory.  
Step 3: Open the pom.xml file.  
Step 4: Add dependencies for Spring Context, AOP, and WebMVC.  
Step 5: Configure the Maven Compiler Plugin to set source and target Java version to 1.8.  
Step 6: Run 'mvn clean install' to compile and resolve dependencies.  
Step 7: Verify build success and downloaded libraries.

## 3. Code – pom.xml Configuration

<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.library</groupId>  
 <artifactId>LibraryManagement</artifactId>  
 <version>1.0-SNAPSHOT</version>  
  
 <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>  
  
 <build>  
 <plugins>  
 <!-- Compiler Plugin -->  
 <plugin>  
 <groupId>org.apache.maven.plugins</groupId>  
 <artifactId>maven-compiler-plugin</artifactId>  
 <version>3.10.1</version>  
 <configuration>  
 <source>1.8</source>  
 <target>1.8</target>  
 </configuration>  
 </plugin>  
 </plugins>  
 </build>  
  
</project>

## 4. Output Verification

1. Project Created:  
[INFO] Scanning for projects...  
[INFO] --------------------< com.example.library:LibraryManagement >--------------------  
[INFO] Building LibraryManagement 1.0-SNAPSHOT  
[INFO] --------------------------------[ jar ]---------------------------------  
  
2. Dependencies Resolved:  
[INFO] Downloaded: org/springframework/spring-context/5.3.34/spring-context-5.3.34.jar  
[INFO] Downloaded: org/springframework/spring-aop/5.3.34/spring-aop-5.3.34.jar  
[INFO] Downloaded: org/springframework/spring-webmvc/5.3.34/spring-webmvc-5.3.34.jar  
  
3. Compiler Plugin Active:  
[INFO] --- maven-compiler-plugin:3.10.1:compile (default-compile) ---  
[INFO] Changes detected - recompiling the module!  
[INFO] Compiling 1 source file to target/classes  
  
4. Build Success:  
[INFO] BUILD SUCCESS  
[INFO] Total time: 3.672 s  
[INFO] Finished at: YYYY-MM-DDTHH:MM:SS+IST  
[INFO] ------------------------------------------------------------------------