**Exercise4: Creating and Configuring a Maven Project**

**Objective:** The goal is to setup the foundation for the Library Management Application using the Maven as our build tool and dependency manager.

This is like building a blueprint of a house before adding rooms, furniture, and all the fancy things.

**Scenario:**

Imagine, starting fresh with a brand-new project for managing library operations. To keep it clean, modular, and easy to scale, maven is used.

Creation and configuring a maven project:

* Create a new Maven project.
* Add core spring dependencies so we can use Spring Context, AOP and web MVC.
* Configure Maven to compile project using Java 1.8 for maximum compatability.

Steps for configuring a Maven project:

**Step1:** Create a New Maven Project.

Initially, go to **Create New Project**-Select Maven and include below details.

|  |  |
| --- | --- |
| **Field** | **Value** |
| **Group ID** | com.library |
| **Artifact ID** | LibraryManagement |
| **Version** | 1.0 |
| **Packaging** | Jar |

This creates a new folder structure:

LibraryManagement/

├── src/main/java

├── src/main/resources

├── src/test/java

├── pom.xml

**Step2**: Add Spring Dependencies

The below libraries need to be included in pom.xml,

* spring-context
* spring-aop
* spring-webmvc
* servlet-api

|  |
| --- |
| <dependencies>  <!-- Spring Context: Core IoC container -->  <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>  <!-- Spring Web MVC: For building web applications -->  <dependency>  <groupId>org.springframework</groupId>  <artifactId>spring-webmvc</artifactId>  <version>5.3.36</version>  </dependency>  <!-- Servlet API: Needed by Spring Web -->  <dependency>  <groupId>javax.servlet</groupId>  <artifactId>javax.servlet-api</artifactId>  <version>4.0.1</version>  <scope>provided</scope>  </dependency>  </dependencies> |

**Step3**: Configure Java Version

Under the <build> section the below tags are included in pom.xml

|  |
| --- |
| <build>  <plugins>  <!-- Maven 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> |