**Day 11: 30-10-2025:**

**Maven :** Maven is known as open source automation build tool.

Build tool is responsible to compile program, run the program, test program, creating jar(.java/.class) or war(html/css/js/xml/jsp/java/.class) file(build file),ear file(EJB), help to download the external dependencies in form of jar file, help to create the documentation.

All build tool provide common project structure which we an use in all java IDE.

Before maven we were using Ant tool.

Maven and Gradle

Maven tool is base upon java technologies and xml base. Maven use pom.xml (project object model). this file contains all configuration details to build the application. We provide configuration details in tag format.

Gradle : Gradle xml less. We build file their we provide configuration details in key-value pairs.

Maven goals

mvn validate

mvn compile

mvn test

mvn package

mvn deploy

mvn install

creating maven project using command prompt

open the command

mvn archetype:generate

default project number 2289 for simple core project -🡪 hit enter

it ask specific version --🡪 hit enter

groupId --🡪 collection of project

artifactId-🡪 Projectname

version 🡪 1.0

package 🡪 com

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Maven provide 3 types of repository

1. Local repository
2. Remote repository : it is a public repository
3. Private or organization repository

Pom.xml file first check jar file present in local repository or not base upon dependencies we provided in pom.xml file

By default in window insider user directory .m2 folder which contains all required jar file.

mvn validate : it check the pom.xml file syntax or tag details.

mvn clean : clean the project and it remove target folder.

mvn compile : compile the whole project. It create target folder and keep all .class file.

mvn test : run testing file

mvn package : jar or war file

mvn site : help to create the documentation for your project

which create site folder and inside that folder contains lot of file. Open index.html file to check documentation in html format.

**maven life cycle**

mainly divided into 3 sub types

1. default : compile, validate, package, test
2. clean : clean : to clean our old build files
3. site : site : create the documentation.

each life cycle contains one or more than goal.