

What is Maven?

Maven is an open-source automation and project management tool developed by apache software foundation it is based on POM (Project Object Model).

Maven can build any number of into desired output such as .jar, war, metadata.

Mostly used for Java based projects.

It was initially released on 13 July 2004.

Maven is written in Java.

Meaning of maven is 'Accumulator of knowledge'.

Maven helps in getting the right jar file for each project as these as these may be different version of separate packages.

To download dependencies it is no more needed to visit the official website of each software it cloud now be easily done by visiting "mvnrepository.com"

Dependencies –

It refers to the java libraries that are needed for the project.

Repositories-

Refers to the directories of packaged jar files.

Build Tools:

- C,C++ : Make file
- .Net : Visual studio
- Java : Ant,Maven,Gradle.

Problem without Maven:

1. Adding set of jars in each project-

In core of stubs, spring, we need to add jar files in each project it much include all the dependencies of jars also.

2. Creating the right project structure-

We must create the right project structure in srvlet, strubs etc. otherwise it will not be executed

For eg.

.war file layout

3. Building and deploying the project-

We must have to build and deploy the project so that it may work.

What Maven Does?

1. It makes a project easy to build.
2. It provides project information (for eg. Log document, cross reference sources, mailing list, dependency list, unit test)
3. Easy to add new dependencies
4. Therefore, apache maven help to manager-
 1. Build
 2. Dependencies
 3. Reports
 4. Releases
 5. Distribution

What is build tool?

A build tool take care of everything from building a process. It does following

- Generate source code
- Generate documentation from source code.
- Compiles source code.

- Install the package code in load repo, server repo or central repository.

POM (Project Object Model)

- POM refers to the XML files that have all the information regarding project and configuration details.
- Main configuration file is pom .xml.
- It has the description of the project details regarding the versioning and configuration management of the project.
- The XML file is in the project home directory.

Pom.xml contains:

- Metadata
- Dependencies
- Kind of project
- Kind of output (.jar, .war)
- Description

One Project – One workspace – one pom xml requirement for build

- Source code (present in workspace)
- Compiler (remote repo- local repo- workspace)
- Dependencies (remote repo – local repo – workspace)