**Maven**

Developer : Apache Software Foundation

Initial realize : 13th July 2004

Written in : Java

Type : Project Management Tool, Build Tool.

What is Maven?

\*Maven is a **Build Tool** and **Project Management Tool**.

\* Which is completely **Open Source**.

\* Whenever you created a maven project by default which will give you **Project Structure**.

\*We can also generate Some **Reports** and we can generate project related **documentation**.

\*We can **package** the project also using maven.

Why we are using Maven without using maven what will happen?

\***There are two major problem we are facing :**

**1.)** We have to download all third party library from the different website and attached them in a project manually.

**2.)** Upgradation if tomorrow I want to update all the third party library into the lastest version. I need to remove exiting once and we need to download latest version of third party and again I want attached into the project .

\*So over come this problem we are using Maven.

What is build tool?

\*Build tool is nothing but whenever you create a Maven which will provided something called **Pom.xml**.

What is Pom.xml?

POM expand for **Project Management Tool**

XML expand for **Extensible Markup Language**

**\***the whole Maven project controlled by Pom.xml file. In which we have something called **Dependency** and **Plugin**.

What is Dependency ?

\*When you have dependency in the Pom.xml file which will automatically download all third party library into ur project. If u want to upgrade ur project just change the version of dependencies.

<dependency>

(Inside this we will specify all kind of dependencies which are required to our project…)

<dependency>

What is MVN Local Repository?

\*This dependencies will try to get all the required library whatever the we specified inside the Pom.xml according it will connected Remote maven repository get all the related library into Local Repository.

What is MVN Remote Repository ?

\*All the libraries whatever libraries we need for our project all the libraries available inside the Maven Remote Repository. There is a **mvn repository.com** we can find all kind of library in this website.

What is Plugin?

\*plugin are another type of entry which we have in the Pom.xml file, so plugin are basically having the configuration toughs related to the project.

<plugin>

(here we can specify all the plugin project related configuration we will specific in the plugin like Compile Plugin, Run Plugin etc…)

<plugin>

What is package?

\*Package means once you done your project you don’t know about the entire project so we need to package it and submit to the client, package is possible through the Maven.

What is Maven Archetype?

\*It is basically **Templates** as a developer we may work with a different type of technology different type of project depend up on project we can select particular maven template which will give you default folder structure for your project.

\*Whenever you create the group ID and artefact ID it will create a all the package by combining group and artefact ID.

This both are Developing Purpose

\***src/main/java –** Whatever the code is developer developing keep the code In source code inside the src/main/java.

\***src/main/resource –** developing the code if we need resources and though resources file keep inside the src/main/ resources.

This both are Testing purpose

\***scr/test/java –** It contain all the test or the unit test written by the developer.

\***scr/test/resources -** While they developing though test case they need any resources file they will keep tough test file in the src/test/resources.

**Maven Build Life Cycle:**

**\*Validate –** First we need to validate the code whatever code is written wheather it is correct or not .

\***Compile –** We need to compile code.

\***Test –** Whatever test we written to the test the code to test it.

**\*Package –** Package is nothing but whatever the code is compiled we need to packed it in the form of Jar, War.file

\***Integration Test –** Sometimes this project is Integrating with other Project also.

\***Verify -**  Verify the project.

\***Install –** Install in Local repository.

\***Deploy** – Install in Remote repository.

-------------------------\*-----------------------------\*-------------------------------\*-----------------------------