what is maven

Build Tool: Maven

What is Maven?

"Maven is a tool that is used to compile, validate, code, and analyze the source code."

"Maven manages the building, reporting, and documentation from source control and management (SCM)."

"Maven projects are configured through Project Object Model (POM)."

"POM.xml file contains documentation for all of the objects, properties, methods, and events."

What Maven is Capable of?

\* "Information of the project is centralized through Maven."

\* "Our software project is modified by it."

\* "Build process is managed."

\* Data about the Software Project is gathered and then build itselt

\* Document the software and our project

\* Deployable artifacts can be generated from your source code

\* Your source code is compiled packged, test and distributed

\* Reports is created, website is generated for the project

Maven Build lifecycle:

\* in maven, the build is run using a predefined and ordered set & slips to call the build library

\* The build tasks that will be performed during each are determined by the configuration in the Project file,

and in particular the selected Packages vil packaging

\* maven relies on Build lifecycle to define the process of building and distributing artifacts (e.g.: sor files, war f…

\* There are three built-in build life cycles

\* Default - handles project building and deployment

\* clean - handles project cleaning

\* site - handles project's site site generation

Maven Architecture:

PLUG-IN -1 PLIG-IN-2 PLUG-IN-3 PLUG-IN-4

CORE ENGINE

REMOTE LOCAL

REPOSITORIES REPOSITORIES

Maven Artifacts:

\* An artifact is a file resulting from packaging a project.

\* Can be Jar, war, ear, .xml file for example:~

\* Artifacts are deployed in repositories, so they can be used as dependencies by other projects

\* Artifacts are identified by the three components:

\* Group ID -> An unique identifier for a group & related artifacts. usually named like Java packages (ex: P.Jpercire. mobile)

\* Artifact id -> A unique identifier, within the context & groupid, that identifies the artifact project (Ex: Puzzle)

\* Version -> Also called artifact coordinates

MAVEN REPOSITORY FLOW:~

REMOTE REPOSITORY

STEP-2

DEVELOPER

STEP-3

^ ^

LOCAL REPO >>>> STEP-1 ^

^ <<<<<STEP-4

\* Step 1: When developer execute mvn, it will go and check in local repository,

if found plugin and dependencies developer will see the output.

\* Step 2: If not found in local repository from developer machine it will go and search in remote repository.

\* Step 3: From remote repository required dep. will get stored in local repository.

\* Step 4: From local repository developer will get the output.

Project Object Model (POM):

\* POM - XML file located at the root of the project (Pom.xml)

\* It includes configuration for your project, including:

- information about the project

- configuration details to build the project

- contains default values for most of the projects

- sources dir, target dir, resources

- dependencies of the projects

- configuration about plugins and goals

- used repositories

Declaring Dependencies:~

\* Group ID - A unique identifier for the group of related artifacts

\* Artifact ID - An artifact is a file which is made after packaging a project, and

Artifact ID is a unique identifier, within the context of group ID and it identifies the artifacts.

\* Version - it is an identifiver for the release or build of project

HOW TO INSTALL MAVEN ON WINDOWS:~

Prerequisites:

\* A system running windows

\* A working internet connection

\* Access to an account with administrator privileges

\* A copy of Java installed and ready to use, with the JAVA\_HOME environment variable set up

(Learn how to set up the JAVA\_HOME environment variable in our guide to)