Maven

Build Tools / Build Automation / management

→ **Build Tool or Build management** : is a process that we compile and assemble all the source code into object files.

Ex: 100 app.java files
    100 object files (.class files)

→ Maven is a java based build tool used for java based projects.

- Compiling source code
- packing Binaries / artifacts
- running Automated tests
- Deploying to production system
- Creating Documentation

** Diff with other tools :

1. Open source
2. it is not only build tool and also project management tool
3. it has set of standards and object modules, So, no need to instruct.
4. default project lifecycle
5. dependency management.

* Default life cycle:

1. generate - source
2. compile
3. test
4. package
5. integration
6. install
7. deploy

clean : it deletes all runtime files
site : documentation

*. diff source and binary code:

1. Source code which we can customize
2. binary code is a product which we can buy directly

*. Standard Directory Layout:

1. main (java files)
2. test (test files)

* **GAV** : how maven identify which plugin or project
to select when we instruct a goal. (G·A·V)

    G — Group id
    A — Artifact id
    V — Version id

    mvn archetype : generate (compile)

* **pom** :

→ project object model is fundamental unit of work in ma~
pom is an xml file that contains information about
project and configuaration.

→ pomconf file contains below list.
    1. Describe a project
    2. name and version. Artifact type, Source code
      location, Dependencies
    3. plugins
    4. profiles
    5. it uses xml by default.

* **Maven profile** :

def : build profile is a set of configurations values
which can be used to set or overside default
values of maven build.

    mvn clean (default)
    mvn - pdemo specify goal (all plugins)

* **Multy - Module projects** :

→ If you have 1000 files in app.java project it is
difficult to maintain, so make modules / components
like add, sub, dev of calculater project and copy src.
pom file in each.

* **Dependency? how maven know:**

→ if Sub is depend on add file then we need to kee~
add file GAV into Sub file dependency.