Gradle Tool

=> It is an open source build automation tool

=> Released in the year of 2007, Stable release came in 2009

=> Gradle has taken advantages of both Ant & Maven and removed dis-advantages of both.

=> Gradle written in Groovy Language

=> Gradle tool makes project build automation process easy.

=> Gradle tool used by large projects like Hibernate and Spring.

What is Project Build Process

=> Project Build process contains several phases

1) Download Requied Dependencies (Ex: jdbc driver, hibernate, spring)

2) Add dependencies to project build path

3) Compile Project Source Code

4) Execute Junit Unit Test Classes

5) Package project as a jar or war file (Executable artifact)

=> By performing above steps, we will convert project source code into executable file.

############   Build Tools are used to automate build process of the projects ##############

=> Build Tools are used to convert project source code into executable file

1) Ant

2) Maven

3) Gradle

Gradle Setup

1) Check Java is installed or not (If not available install Java)

```
$ java -version
```

2) Downlod Gradle s/w as Zip file & Extract it (www.gradle.org)

3) Set Path for Gradle in Environment Variables

4) Check Gradle Version

```
$ gradle -v
```

```
# To create a project using gradle we will use below command
$ gradle init
```

build.gradle : It is gradle build script file (groovy or kotlin) - DSL

gradlew : It is a wrapper to run Gradle in Linux & Mac OS machines

gradlew.bat : It is a wrapper to run Gradle in Windows Machines

settings.gradle : To configure global settings of gadle project

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```
$ gradle tasks    === > It will display all gradle tasks
```

Note: In gradle everything is called as Task (Ex : compile, test, build, jar , war, run etc...)

```
$ gradle compileJava    ===> It is used to compile Java Classes

$ gradle build ===> It is used for Compile + Unit Test + Package

$ gradle run  ===> It will run our application main class

$ gradle clean ==> It will delete build directory
```

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```
============================== build.gradle ==========================

plugins {
        id 'java'
}

sourceCompatibility = 1.8
targetCompatibility  = 1.8

repositories {
        mavenCentral ( )
}

dependencies {

        implementation  'mysql-connector-j'

        testImplemention  'junit'
}

jar {
        archieveBaseName = 'app'
        archieveVersion = '1.0'
}
```

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