

Apache Maven



Endrigo Antonini

Apache Maven

From the reason to the implementation



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Agenda

- ⌚ What is Maven?
- ⌚ Why use Maven?
- ⌚ How POM works?
- ⌚ What is a Repository?
- ⌚ Why using a Local Cache sever?



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What is ...

maven



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What is Maven?



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What is Maven?

- ⦿ Was originally designed to simplify the build processes in the Jakarta Turbine project;
- ⦿ Create a standard way to build the project



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What is Maven?



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What is Maven?

The main goal!!



Allow a developer to comprehend the complete state of the development;



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What is Maven?

The main goal!!



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What is Maven?



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What is Maven?

Build process easy:

Make the build process transparent to
the developer;



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What is Maven?

Build process easy:

Make the build process transparent to
the developer;



You still need to know what's happening



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What is Maven?



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What is Maven?

Uniform build system

Just learn once how the build process works;



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What is Maven?

Uniform build system

Just learn once how the build process works;



Using the POM (Project Object Model) - we will talk about this later!



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What is Maven?



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What is Maven?

Provide quality project information

Dependency list;

Unit test, coverage;

Developer list...



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What is Maven?



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What is Maven?

Best practices development

Separate test code of the main code;
Test cases do not affect the main
distribution



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Best practices development

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Maven also suggests a project structure to easily work with the projects



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What is Maven?



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What is Maven?

Migration to new features

Easy way to update the maven, plugin, dependency.



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Why use Maven?



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Why use Maven?

- ⦿ Well adopted by Java developers;
- ⦿ Make easy to start a project;
- ⦿ Don't need to download the same lib over and over again!
- ⦿ Different developers, same config!



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How POM works?



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How POM works?

- POM -> Project Object Model
- XML based
- Single file configuration
- Structural configuration



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How POM works?



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How POM works?

- ➊ Divided in sections:

```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/
  maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>com.eidoscode.utils</groupId>
  <artifactId>generics-utils</artifactId>
  <version>1.1.3-SNAPSHOT</version>
  <packaging>jar</packaging>
  <name>Generics Utils</name>
  <description>...</description>
  <url>http://www.eidoscode.com/</url>
  <inceptionYear>2012</inceptionYear>
  <dependencies> ... </dependencies>
  <developers> ... </developers>
  <build> ... </build>
  <reporting> ... </reporting>
</project>
```



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Project
Information



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</project>
```

Main group
Information



Dependency?



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Dependency?

- Used to indicated the full name of a dependency, version, and scope

```
<dependencies>
    <dependency>
        <groupId>junit</groupId>
        <artifactId>junit</artifactId>
        <version>4.11</version>
        <scope>test</scope>
    </dependency>
    <dependency>
        <groupId>log4j</groupId>
        <artifactId>log4j</artifactId>
        <version>1.2.17</version>
    </dependency>
</dependencies>
```



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        <scope>test</scope>
    </dependency>
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        <groupId>log4j</groupId>
        <artifactId>log4j</artifactId>
        <version>1.2.17</version>
    </dependency>
</dependencies>
```

The scope can be devided in:

- compile (default)
- provided
- runtime
- test
- system
- import



Developers?



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Developers?

- Used to indicated the team of the project

```
<developers>
  <developer>
    <id>eantonini</id>
    <name>Endrigo Antonini</name>
    <url>http://www.eidoscode.com/</url>
    <roles>
      <role>Developer</role>
    </roles>
  </developer>
</developers>
```



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Builds?



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Builds?

- Used to indicate plugins configurations about the build process

```
<build>
  <plugins>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-jar-plugin</artifactId>
      <executions>
        <execution>
          <goals>
            <goal>test-jar</goal>
          </goals>
        </execution>
      </executions>
    </plugin>
  </plugins>
</build>
```



Reporting?



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Reporting?

- Used to indicate plugins configurations about the generated reports

```
<reporting><plugins>
  <plugin>
    <artifactId>maven-javadoc-plugin</artifactId>
    <version>2.9</version>
  </plugin>
  <plugin>
    <artifactId>maven-changes-plugin</artifactId>
    <version>2.8</version>
    <reportSets><reportSet>
      <reports>
        <report>github-report</report>
      </reports>
    </reportSet></reportSets>
  </plugin>
</plugins></reporting>
```



What is a repository?



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What is a repository?

- ⦿ Stores libraries and it's different versions;
- ⦿ There are several repositories through the web;
- ⦿ Anyone can create a repository of his own libs;
- ⦿ Easy to download libs;
- ⦿ Easy to distribute libs;



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Why using a Local Cache Server?



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Why using a Local Cache Server?

- Reduces the internet connectivity;
- Guarantee that all developers use the same lib;
- First download is slow (through the internet) other downloads are faster (local network);
- Easy to distribute private libs;



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Reference:



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Reference:

- <http://maven.apache.org/>



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<http://www.linkedin.com/in/endrigoantonini/>

<http://www.github.com/eidoscode/>

<http://www.github.com/antonini/>

