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Enterprise Programming using JAVA

Chapter-1: Foundation of Enterprise Programming

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What is Maven?

Maven is a project management and comprehension tool that provides developers a complete build lifecycle framework.

Development team can automate the project's build infrastructure in almost no time as Maven uses a standard directory layout and a default build lifecycle.

Maven - Eclipse IDE

Eclipse provides an excellent plugin m2eclipse which seamlessly integrates Maven and Eclipse together.

Installing m2eclipse plugin

Use one of the following to install m2eclipse −
EclipseURLEclipse 3.5
Eclipse 3.6 (Helios)

Maven - Eclipse IDE

Import a maven project in Eclipse

- Open Eclipse.
- Select **File > Import >** option.
- Select Maven Projects Option. Click on Next Button.
- Select Project location, where a project was created using Maven. We've created a Java Project consumer Banking in the previous chapters. Go to Creating Java Project chapter, to see how to create a project using Maven.
- Click Finish Button.

Maven - Eclipse IDE

Convert an Existing Eclipse Project to a Maven Project (for newer Eclipse versions):

- Right-click on your project in the **Project Explorer**.
- Choose **Configure** > **Convert to Maven Project**.
- Follow the wizard to configure your project as a Maven project.

Maven - Eclipse IDE

Manually Create a pom.xml (if needed):

- If your project doesn't have a pom.xml, you can create one manually.
- Right-click on your project in the **Project Explorer**.
- Choose **New** > **File**.
- Name the file pom.xml.
- Edit the pom.xml to define your project's dependencies, build settings, and other configurations.

Maven - POM

- POM stands for Project Object Model.
- It is fundamental unit of work in Maven.
- It is an XML file that resides in the base directory of the project as pom.xml.
- The POM contains information about the project and various configuration detail used by Maven to build the project(s).
- POM also contains the goals and plugins. While executing a task or goal, Maven looks for the POM in the current directory. It reads the POM, gets the needed configuration information, and then executes the goal.

Maven - POM

Some of the configuration that can be specified in the POM are following −

project dependencies
plugins
goals
build profiles
project version
developers
mailing list

Maven - POM

Before creating a POM, we should first decide the project **group** (groupId), its **name** (artifactId) and its version as these attributes help in uniquely identifying the project in repository.

Maven - POM

```
<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.companyname.project-group</groupId>
<artifactId>project</artifactId>
<version>1.0</version>
</project>
```

PPT Content Resources Reference Sample:

1. **Book Reference**

   Jim Farley, William Crawford, David Flanagan. Java Enterprise in a Nutshell, O'Reilly

2. **Book Reference**

   Rocha, R., Purificação, J. (2018). Java EE 8 Design Patterns and Best Practices: Build Enterprise-ready Scalable Applications with Architectural Design Patterns. Germany: Packt Publishing..

3. **Website Reference**

   https://www.scribd.com/document/268349254/Java-8-Programming-Black-Book .

4. **Sources**

   https://developers.redhat.com/topics/enterprise-java

5. **Article**

   https://www.researchgate.net/publication/276412369_Advanced_Java_Programming

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