Maven

Creating Applications with Maven

Lesson Objectives

- In this lesson, you will learn about:
- Overview
- Testing your application
- Generating Java Projects using Maven in Eclipse Luna
  - Setting Maven in Eclipse Environment
  - Adding/Updating Dependencies
  - Importing Project
  - Creating Maven Module
- Creating Web application using Maven
  - Creating Maven web Module

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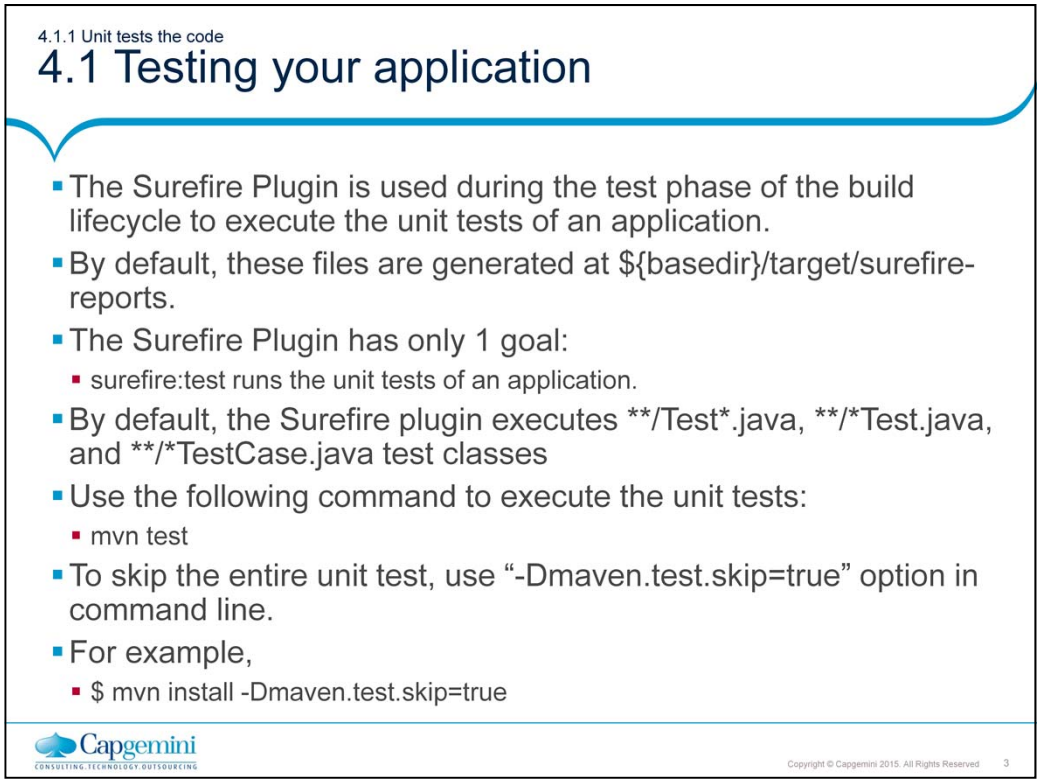
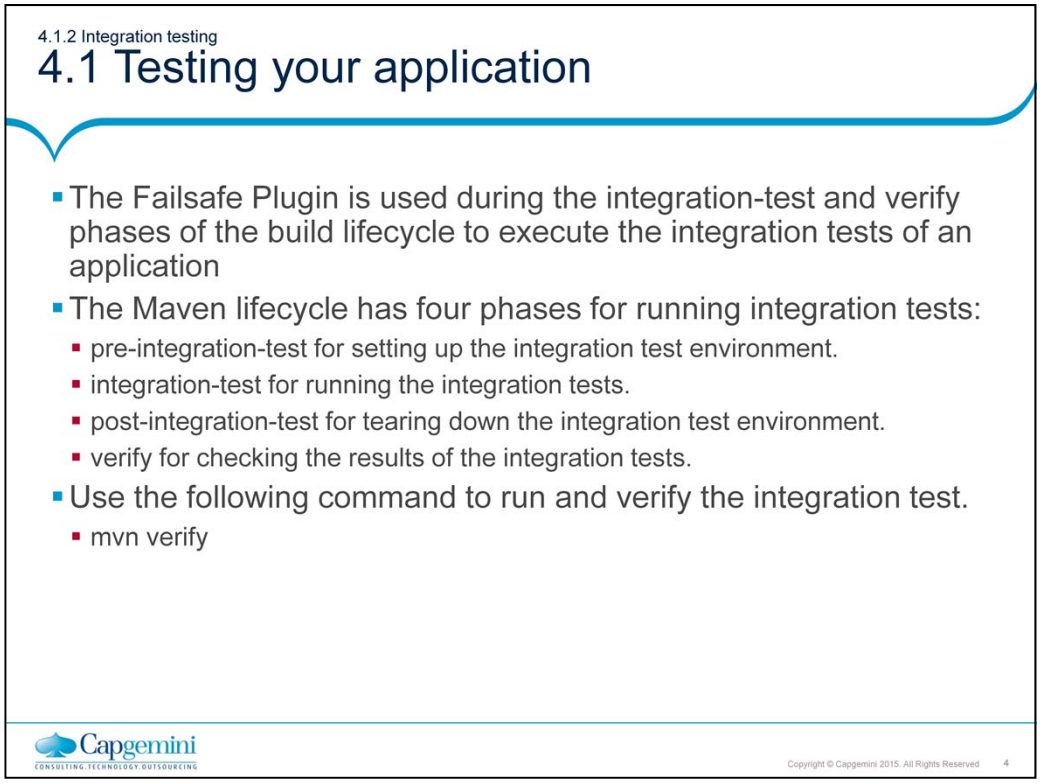


It generates reports in 2 different file formats:

- Plain text files (*.txt)
- XML files (*.xml)



The Failsafe Plugin has only 2 goals:

failsafe:integration-test runs the integration tests of an application.

failsafe:verify verifies that the integration tests of an application passed.

The Failsafe plugin will look for **/IT*.java, **/*IT.java, and **/*ITCase.java.

4.1.3 Running unit test in Integration test phase

4.1 Testing your application

- Add these code snippet in pom.xml

```
.....
<executions>
        <execution>
                <id>unit-tests</id>
                <phase>test</phase>
                <goals>
                        <goal>test</goal>
                </goals>
                <configuration>
                <!-- Never skip running the tests when the test phase is invoked -->
                <skip>false</skip>
                        <includes>
                        <!-- Include unit tests within integration-test phase. -->

                        <include>**/*Tests.java</include>
                        </includes>
                        <excludes>
                        <!-- Exclude integration tests within (unit) test phase. -->

                        <exclude>**/*IntegrationTests.java</exclude>
                        </excludes>
                </configuration>
        </execution>
<executions>
......
```

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4.2.1 Starting Eclipse at JDK

4.2 Setting Maven in Eclipse Environment

- Maven requires Eclipse using a JDK, instead of a JRE.
- To check with what Java version (JRE or JDK) Eclipse is running, do the following:
  - Open the menu item "Help > About Eclipse". (On the Mac, it's in the Eclipse-menu, not the Help-menu)
  - Click on "Installation Details".
  - Switch to the tab "Configuration"
  - Search for a line that starts with "-vm". The line following it shows which Java binary is used.

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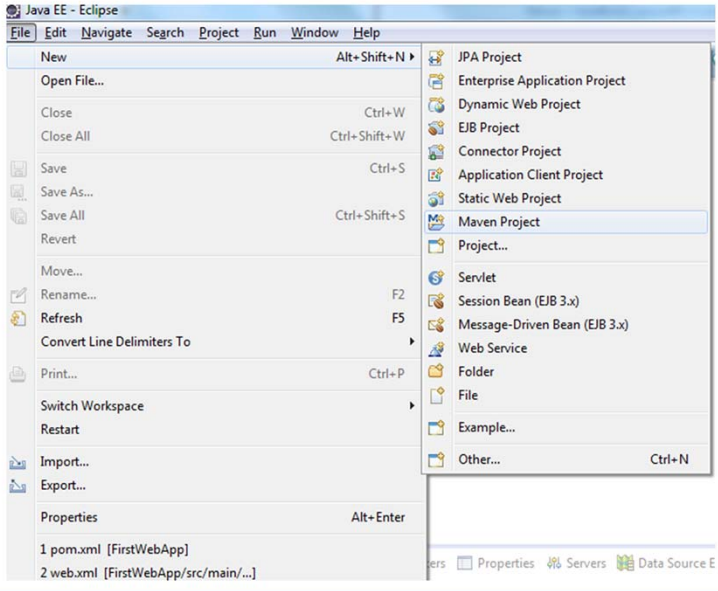
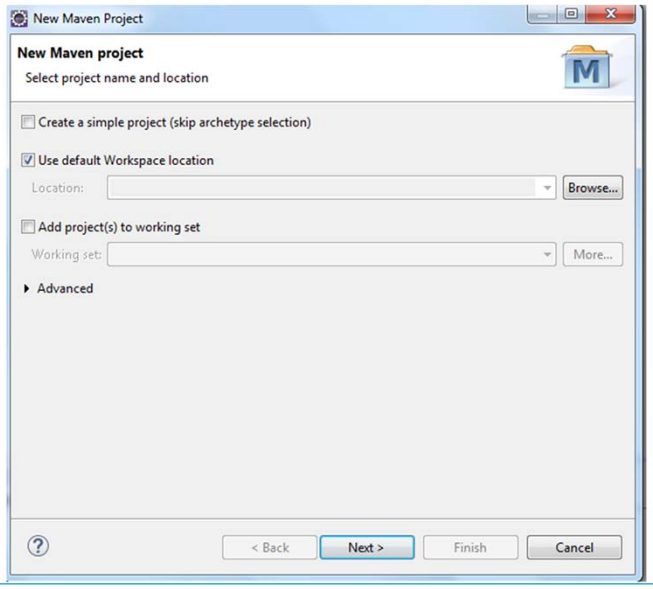
4.3.1 Maven Project in Eclipse

4.3 Creating Maven Project in Eclipse Luna



4.3.2 Maven Project in Eclipse

4.3 Creating Maven Project in Eclipse Luna



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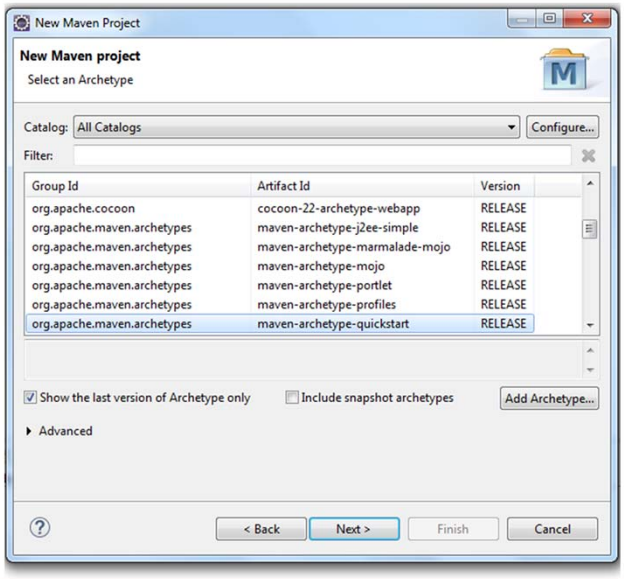
4.3.3 Maven Project in Eclipse

4.3 Creating Maven Project in Eclipse Luna



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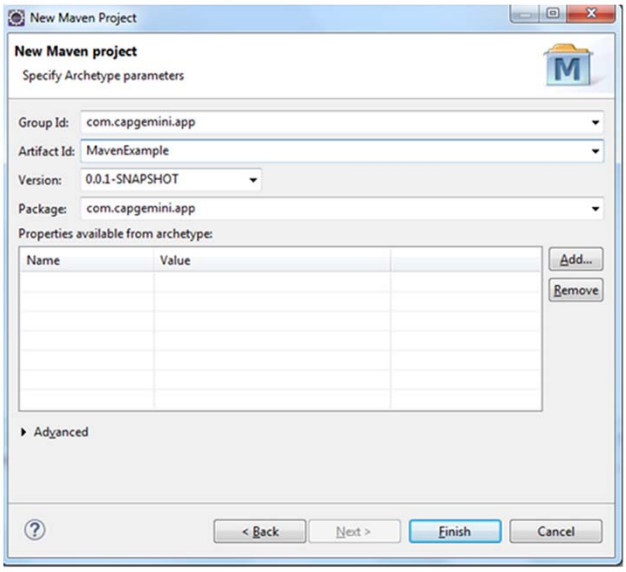
4.3.4 Maven Project in Eclipse

4.3 Creating Maven Project in Eclipse Luna



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4.3.5 Maven Project in Eclipse

4.3 Creating Maven Project in Eclipse Luna

- Update the jUnit version to 4.11 in pom.xml

*MavenExample/pom.xml

```
1  <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://w
2    xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.a
3    <modelVersion>4.0.0</modelVersion>
4
5    <groupId>com.capgemini.app</groupId>
6    <artifactId>MavenExample</artifactId>
7    <version>0.0.1-SNAPSHOT</version>
8    <packaging>jar</packaging>
9
10   <name>MavenExample</name>
11   <url>http://maven.apache.org</url>
12
13   <properties>
14     <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
15   </properties>
16
17   <dependencies>
18     <dependency>
19       <groupId>junit</groupId>
20       <artifactId>junit</artifactId>
21       <version>4.11</version>
22       <scope>test</scope>
23     </dependency>
24   </dependencies>
25 </project>
```

Overview | Dependencies | Dependency Hierarchy | Effective POM | pom.xml

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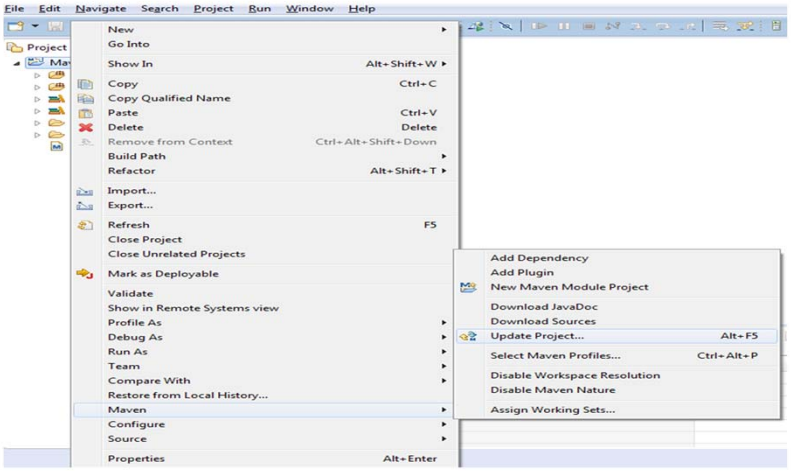
4.3.6 Maven Project in Eclipse

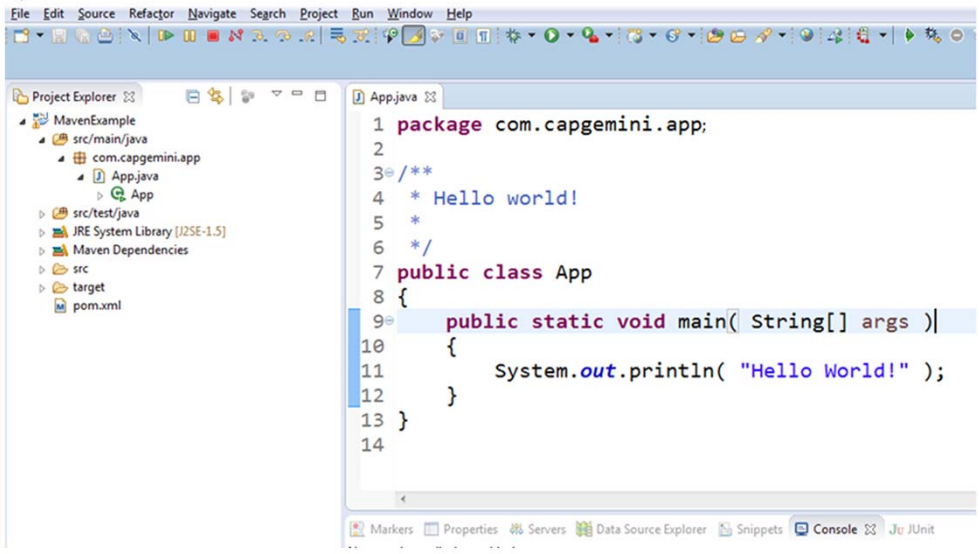
4.3 Creating Maven Project in Eclipse Luna

- Update the project as shown:



4.3.7 Maven Project in Eclipse

4.3 Creating Maven Project in Eclipse Luna



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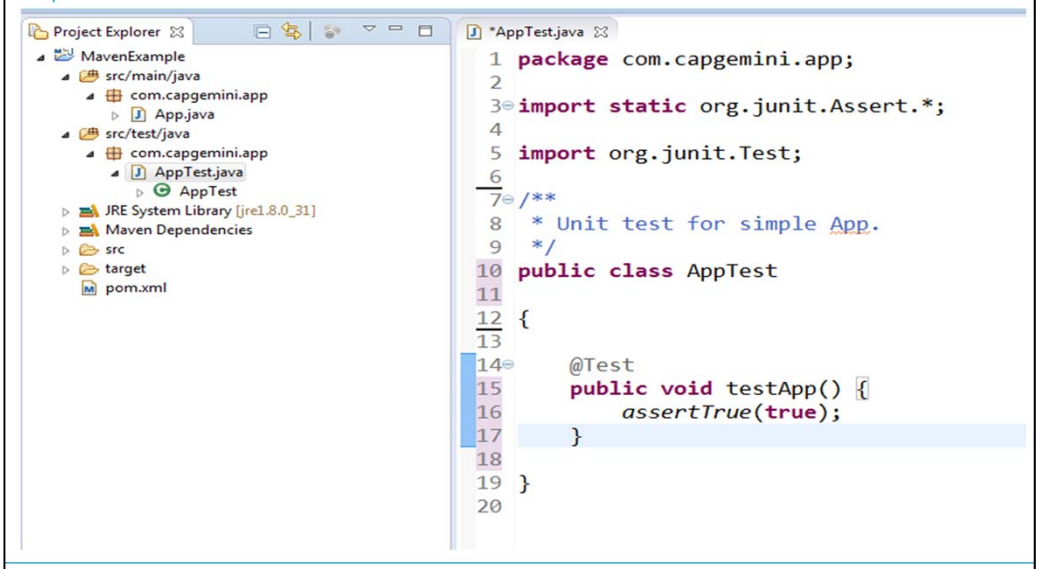
4.3.8 Maven Project in Eclipse

4.3 Creating Maven Project in Eclipse Luna



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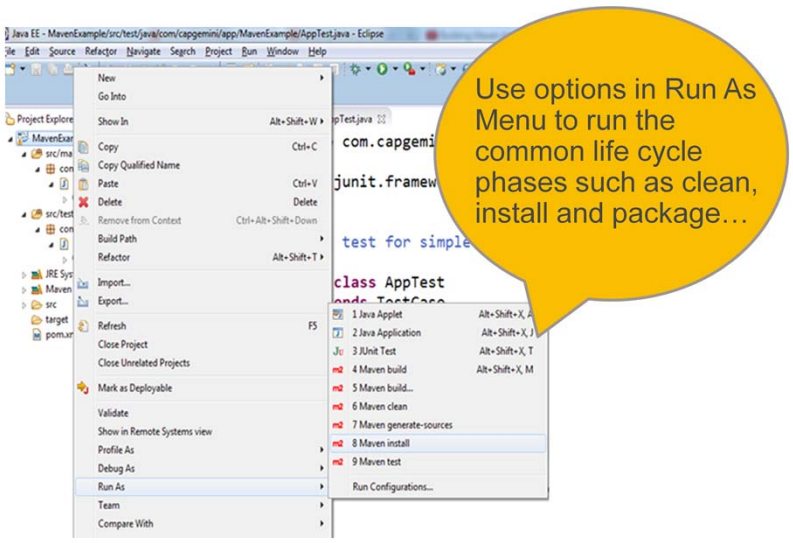
4.3.9 Maven Project in Eclipse

4.3 Creating Maven Project in Eclipse Luna



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4.3.10 Adding and Updating Dependencies

4.3 Creating Maven Project in Eclipse Luna

- Eclipse offers two options for adding dependencies to a project.
  - By manually editing the POM file to type in the XML to add the dependency.
    - Open the pom.xml using XML Editor
    - Edit the pom by adding /updating dependency and save the file.
  - Searching for a dependency using groupId
    - Open the pom.xml using Maven POM Editor
    - Click on Dependency tab to add the dependency.
    - Search the dependency by entering groupId or artifactID.
    - Eclipse queries the dependency in repository indexes and even shows a version of the artifact that is currently in local Maven repository

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4.3 Creating Maven Projects in Eclipse Luna

- Creating and executing the “Maven Example!” program

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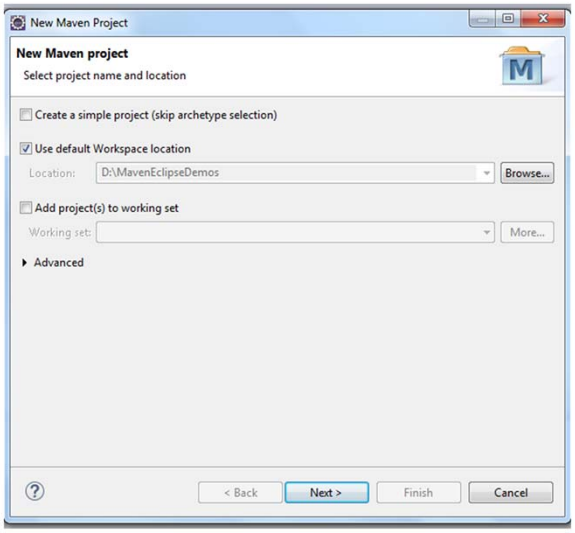
4.4.1 Adding and Updating Dependencies

4.4 Creating Web application using Maven



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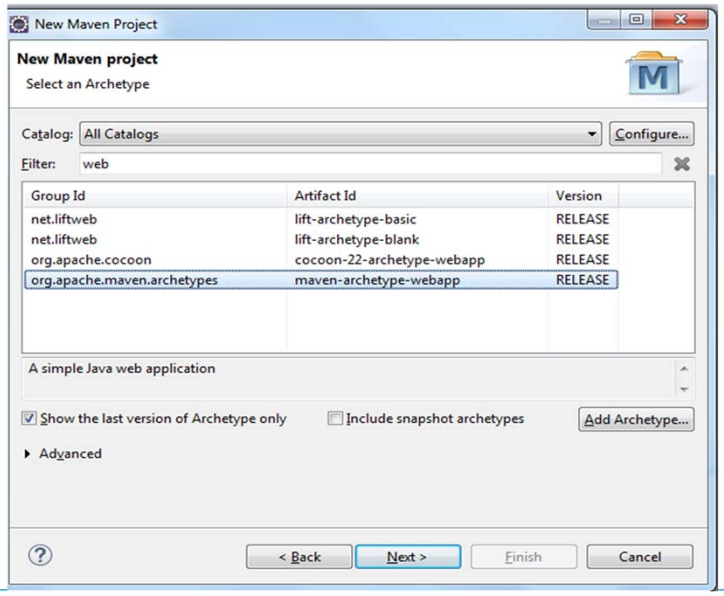
4.4.2 Adding and Updating Dependencies

4.4 Creating Web application using Maven



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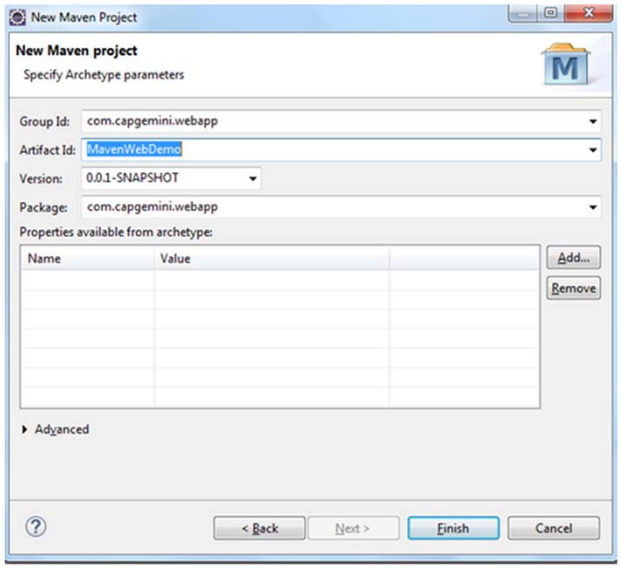
4.4.3 Adding and Updating Dependencies

4.4 Creating Web application using Maven



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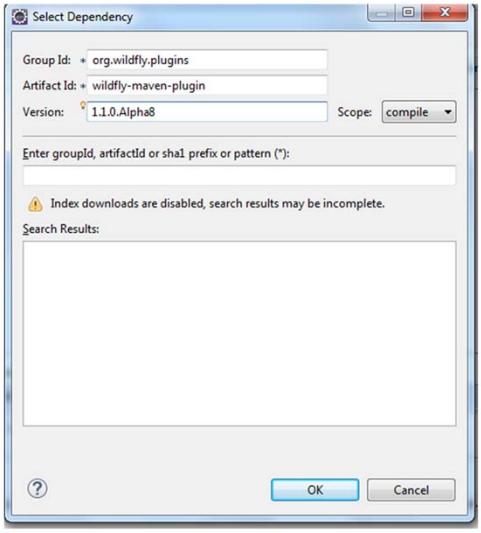
4.4.4 Adding and Updating Dependencies

4.4 Creating Web application using Maven



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4.4.5 Adding and Updating Dependencies

4.4 Creating Web application using Maven

```
10   <dependencies>
11     <dependency>
12       <groupId>junit</groupId>
13       <artifactId>junit</artifactId>
14       <version> 4.11 </version>
15       <scope>test</scope>
16     </dependency>
17     <dependency>
18         <groupId>org.wildfly.plugins</groupId>
19         <artifactId>wildfly-maven-plugin</artifactId>
20         <version>1.1.0.Alpha8</version>
21     </dependency>
22   </dependencies>
23   <build>
24     <finalName>MavenWebDemo</finalName>
25   </build>
26 </project>
27
```

Overview | Dependencies | Dependency Hierarchy | Effective POM | pom.xml

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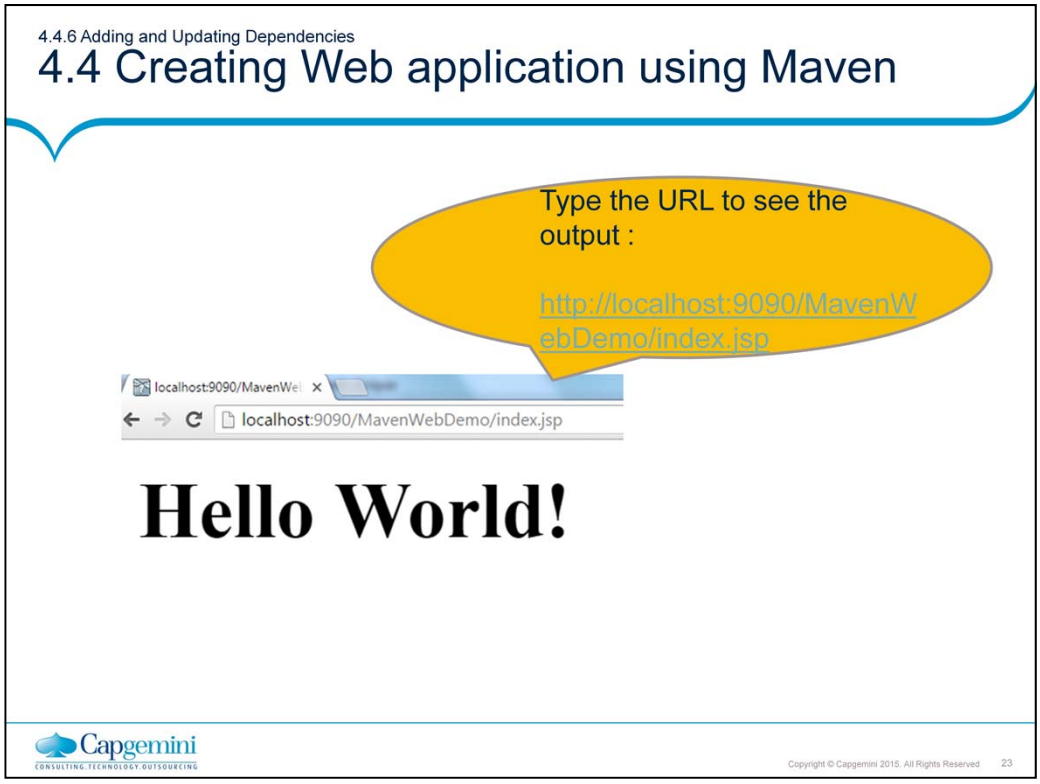
4.4.6 Adding and Updating Dependencies

4.4 Creating Web application using Maven



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4.4.7 Adding and Updating Dependencies

4.4 Creating Web application using Maven

Creating and executing the “Maven Example!” program

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4.4.8 Integrating Maven with Eclipse

Lab: 2

- 2.1: Configure environment to run Maven project
- 2.2: Creating a sample Maven project

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Summary

- In this lesson, you have learn about:
  - Overview
  - Testing your application
- Generating Java Projects using Maven
  - Using archetype
  - Creating Maven Module
- Generating Java web application Projects using Maven

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Review Question

- Question 1: mvn deploy command executes all the build phases in the default lifecycle
  - True
  - False
- Question 2:Configuration of dependencies, is specified in which of the following files?
  - pom.xml
  - setting.xml
  - .m2 folder
  - test files

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Review Question

- Question 3: _____repository for containing released artifacts and _____ repository for storing deployed snapshots.

- Question 4: Which of the following statements is true?
  - groupId and artifactId must be same in a project.
  - groupId and artifactId may be same in a project.
  - groupId and artifactId must not be same in a project.

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