Massey University

159.251 Software Design and Construction

Tutorial 2 - Maven

Prerequisites (what you are expected to do before you come to the tutorial)

1. The lecture material on build tools (at least to the end of the Maven section)
2. Complete tutorial 1 on using Git
3. Install both git and maven (see link below) and be able to use them on the terminal (use `git --version` and `mvn --version` to check that they are installed properly). This may require updating environment variables, as when you installed the JDK in 159272.

Tools Required

- Git
- MVN Repository (https://mvnrepository.com/)
- Maven (Download from: https://maven.apache.org/download.cgi)

Objectives

1. Create a Maven project using Eclipse
2. Download dependencies using Maven
3. Clone an existing project from a remote repository

Description

1. **Create a sample Maven project from scratch**
    a. Create a new Maven project using the Eclipse installer (new… other… Maven… Maven project)
    b. Enter “nz.ac.massey.cs.251” as the groupId and “sample_maven_project” as the artifactId.
    c. Add a Hello World program (i.e. a main class with some printing to console of your choice)
    d. Using **Eclipse**, run mvn compile and then run the main class. Take a screenshot of your screen having done this.
    e. Open your **terminal** to the root folder of the project (where the pom.xml file is)
        i. Run `mvn compile`
        ii. Run `mvn exec:java "-Dexec.mainClass=yourApp"` where yourApp is the name of your main class. Take a screenshot of the terminal showing this process.

2. **Download Guava and fix a broken project**
    a. There is a project that uses an external dependency called Google Guava at https://github.com/unshorn/251tutorial2 . It isn't working, help!
    b. You should complete this part using the terminal (it is easier):
        i. In the terminal of a newly made folder, run `git clone <URL> to` download this project
        ii. This project has a package called guavaExamples, and a main class called RunExamples.java
        iii. Read through the other source files to see what the code is doing.
        iv. Try using `mvn compile`. This will fail because Guava is not downloaded.
        v. Update the `pom.xml` so that Google Guava is a dependency
        vi. Using the terminal, compile and run the main class using Maven (hint: -Dexec.mainClass=guavaExamples.RunExamples). Take a screenshot of the commands and output.
        vii. Create a new remote repository (bitbucket or github). Upload this corrected project there and take a screenshot

What to Submit

Screenshots of the following:

1. The running Hello World project using Maven and Eclipse
2. The running Hello World project using Maven and the terminal
3. The running guavaExamples in the terminal
4. The guavaExamples project in the remote repository

Additionally, zip up the guavaExamples project (the entire root folder down) and submit with the screenshots to Stream.