



Lab work 1 : Basic Java

Part 1: Use the text editor and command line to do the following exercises:

Task1: Visit the website: <https://introcs.cs.princeton.edu/java/11hello/> to do your labwork1.

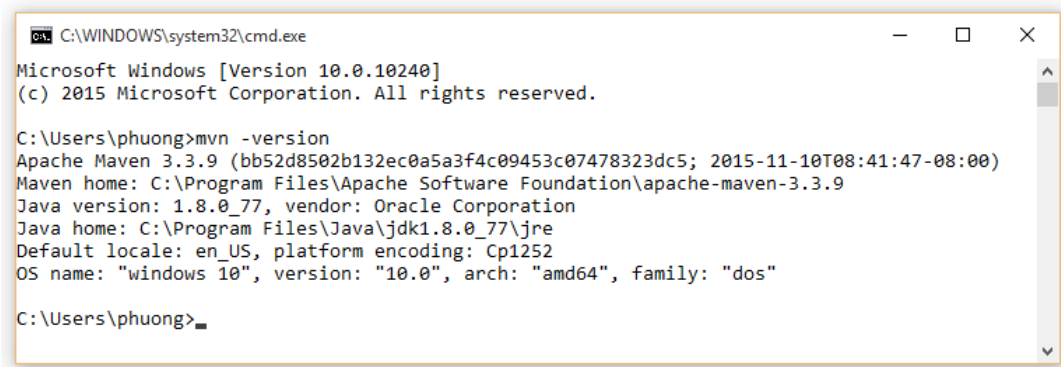
Task 2: Do all the **Exercises** and **Web Exercises** of the “subsection 1.1.” above.

Task 3: Do all the **Exercises** of the “subsection 1.2.” above.

Part 2: Maven and IntelliJ IDEA Installation

Task 1: Download and Install Maven

- Introduction: Apache Maven is a software project management and comprehension tool. Maven is used to compile, test and deploy Java systems. Maven can be used with other IDE like Eclipse or IntelliJ IDEA.
- Download Maven: <http://maven.apache.org/download.cgi>
- Install Maven (here instruction is given for Windows). Be notice that the downloaded version of Apache Maven can be newer than the version in this tutorial, but the steps are the same:
 - **Step 1:** Unzip downloaded **apache-maven-3.3.9-bin.zip** file into a folder where you prefer to store Maven projects. For example, if your preferred folder is C:\Apache, then you should have the folder: **C:\Apache\apache-maven-3.3.9**
 - **Step 2:** Set “Environment Variables”
 - Open Control Panel → System → Advanced System Settings → choose tab “Advanced”, click button “Environment Variables”
 - Add to the end of variable PATH the string C:\Apache\apache-maven-3.3.9\bin
 - **Step 3:** Check to see if Maven is installed successfully
 - Open console, execute the following command:
`mvn -version`
 - If you see the output in your console similarly to the following, then you have installed Maven successfully:



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.

C:\Users\phuong>mvn -version
Apache Maven 3.3.9 (bb52d8502b132ec0a5a3f4c09453c07478323dc5; 2015-11-10T08:41:47-08:00)
Maven home: C:\Program Files\Apache Software Foundation\apache-maven-3.3.9
Java version: 1.8.0_77, vendor: Oracle Corporation
Java home: C:\Program Files\Java\jdk1.8.0_77\jre
Default locale: en_US, platform encoding: Cp1252
OS name: "windows 10", version: "10.0", arch: "amd64", family: "dos"

C:\Users\phuong>
```

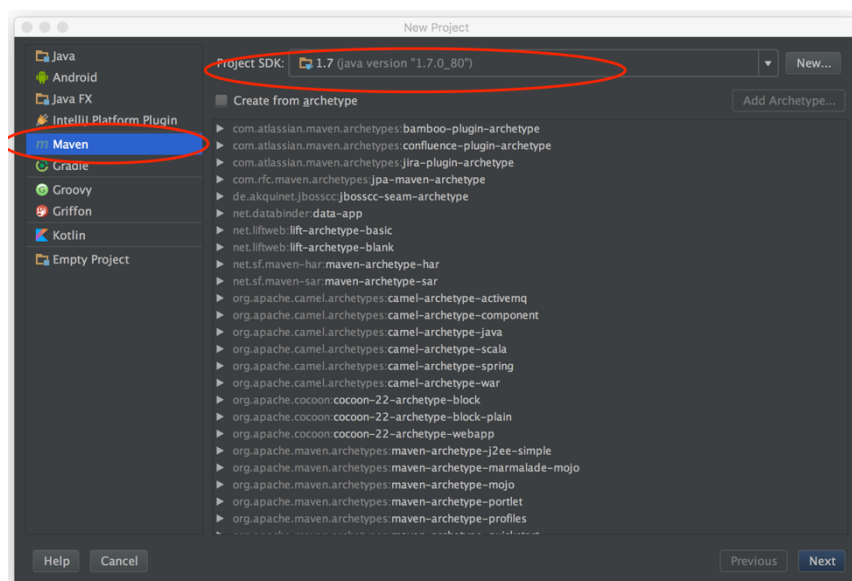
Task 2: Download and Install IntelliJ IDEA Community Version

- Introduction: IntelliJ IDEA Community Version is an open source version of IntelliJ IDEA, an IDE (Integrated Development Environment) for Java and other programming languages such as Scala.
- Download and install IntelliJ IDEA Community Version:

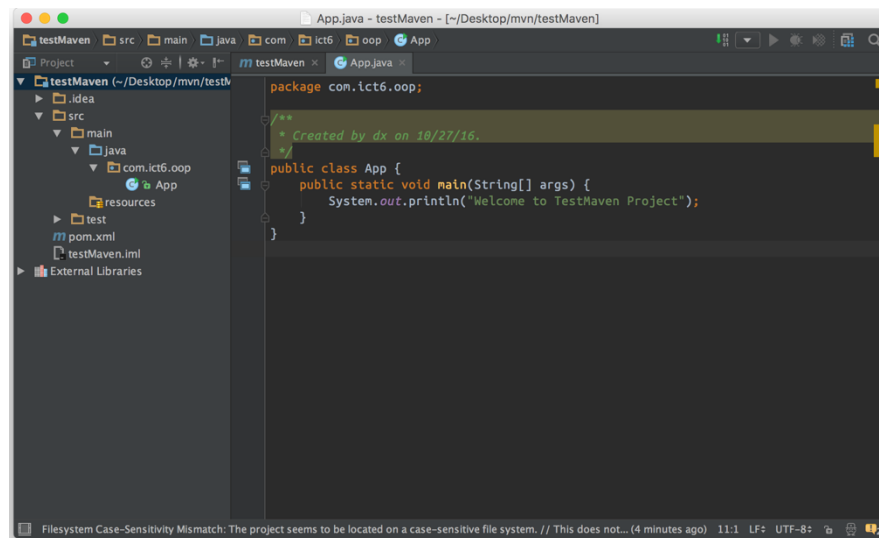
<https://www.jetbrains.com/idea/download/#section=windows>

Task 3: Create a Java project with Maven and IntelliJ IDEA Community Version

- Open IntelliJ IDEA
- Select “Create New Project”
- Create an IntelliJ IDEA project with Maven: click on “Maven” option on the left menu
- Choose Project SDK (Software Development Kit):



- Enter the package name, project name and project location
 - o GroupId (equal to the package name): com.ict10.oop
 - o ArtifactId (equal to the project name): testMaven
 - o Project name: testMaven
 - o Project location: ~/Desktop/mvn/testMaven (give your preferred folder to your project)
- Click the “finish” button. Now you have created a maven project in IntelliJ IDEA.
- To continue:
 - o Create a new package “com.ict10.oop” in Java folder
 - o Create a new Java class “App” in “com.ict10.oop” package



- Build a maven project in IntelliJ IDEA:
 - o Select “testMaven” project
 - o Select “Build menu” → “Rebuild Project” option
- You can see the output in IntelliJ IDEA Console:
- “10:03:35 PM Compilation completed successfully in 2s 172ms”
- Run Maven-based Java application in IntelliJ IDEA:
 - o Select “testMaven” project
 - o Right click on App.java to open context menu
 - o Select “Run App.main()” option



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You can see the output in IntelliJ IDEA Console:

“Welcome to TestMaven Project”

Note 1: If you prefer, you can use other IDEs such as Eclipse, NetBeans, etc. instead of IntelliJ IDEA. Besides, the screenshots are just examples for your references.

Note 2: you need to submit the source codes of your lab works to the google drive folder of the course.