Notes on installing Java, IntelliJ IDEA Ultimate, and TomEE+.

Part 1. Installation of Open JDK

Visit https://adoptopenjdk.net/archive.html.
Do **not** choose the defaults, rather be sure to choose Open JDK12 and Open J9.
Download and run the JDK installer for jdk-12.0.2+10.2_openj9-0.15.1
Download and run the JRE installer for jdk-12.0.2+10.2_openj9-0.15.1
Set your JAVA_HOME environment variable.
On a MAC, JAVA_HOME is set within the .bash_profile of your home directory.
Export JAVA_HOME=/Library/Java/JavaVirtualMachines/adoptopenjdk-12-openj9.jdk/Contents/Home

From the command line, javac -version and java -version should both report the version number as 12.

You will need to set your JAVA_HOME environment variable. On a MAC, edit the .bash_profile file in your home directory and include the following line:

```
export JAVA_HOME=/Library/Java/JavaVirtualMachines/adoptopenjdk-12-openj9.jdk/Contents/Home
```

If your installation is correct, then from the command line, javac -version and java -version should both report the version as 12.0.2.

Part 2. Installation of IntelliJ IDEA Ultimate

Establish your student credentials with JetBrains for the free version of IntelliJ for educational use: https://www.jetbrains.com/student/. Download and install IntelliJ IDEA Ultimate. We are using Intellij 2019.2

Write a Java program that displays "Hello World". Simply add the line
System.out.println("Hello World");
to the main method. Click the triangle to compile and execute the code.

Part 3. Installation of TomEE+

Visit http://tomee.apache.org/download-ng.html and download the TomEE 8.x.x (e.g 8.0.4) version of **TomEE Plus** (Note: "Plus", not "Plume".)

Copy the TomEE directory to an appropriate directory on your file system. The directory path should contain no spaces. Do not change the name of the TomEE Plus directory.

1. Open IntelliJ and create a new project.
2. Under Java Enterprise /select Web Application and select Create web.xml
3. Select Next and name your project TestWebApp
4. Right click src and create a new servlet
5. Give it the name TestServlet in the package edu.cmu.andrew.yourAndrewID
6. Uncheck Create Java EE6 annotations check box.
7. Select OK
8. In the web.xml file, after the <u>servlet element</u>, create a servlet mapping element as shown here:

   ```
   <servlet-mapping>
           <servlet-name>TestServlet</servlet-name>
           <url-pattern>/*</url-pattern>
   </servlet-mapping>
   ```

9. Open the TestServlet in the src directory. Within the doGet method, add this line of code:

   ```
   response.getWriter().append("Hello from TestServlet ");
   ```

10. Select Run/Edit Configurations/+/TomEE Server/Local
11. Name the server MyTomEE
12. Select Configure
13. In TomEE Home text box, select the folder on the far right.
14. Select open after browsing to the apache-tomee-plus directory. Select OK.
15. Select Deployment and click Fix in the bottom right and then Apply and OK.
16. Select File/Project Structure/Project Settings/Libraries/+/Java
17. Navigate to TomEE plus directory and select lib/apply/OK
18. Select the green Run triangle.
18. A browser runs and you should see Hello from TestServlet.

While testing, leave these alone. You should just work from the defaults provided.
Set the URL of this service with:
Run/Edit Configurations/Deployment/Application Context

Set the URL that the browser will use
Run/Edit Configurations/Open Browser/ URL