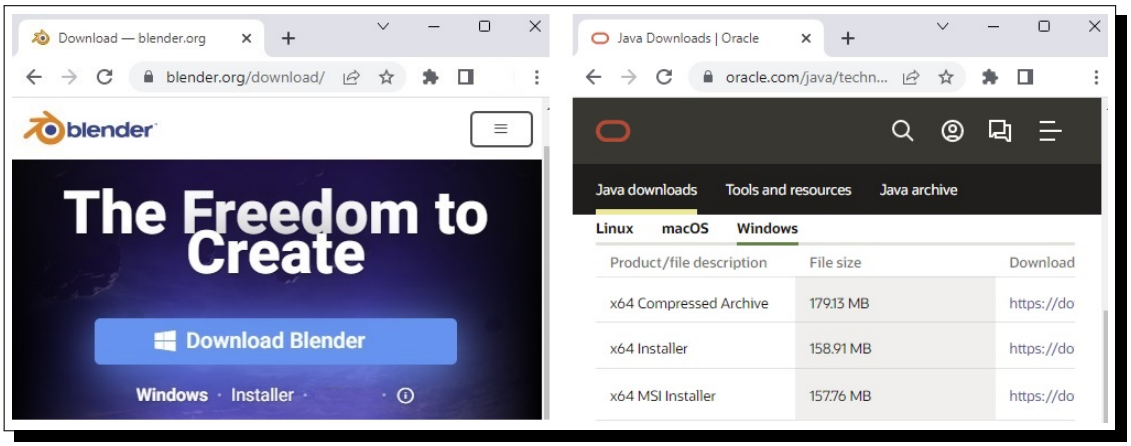
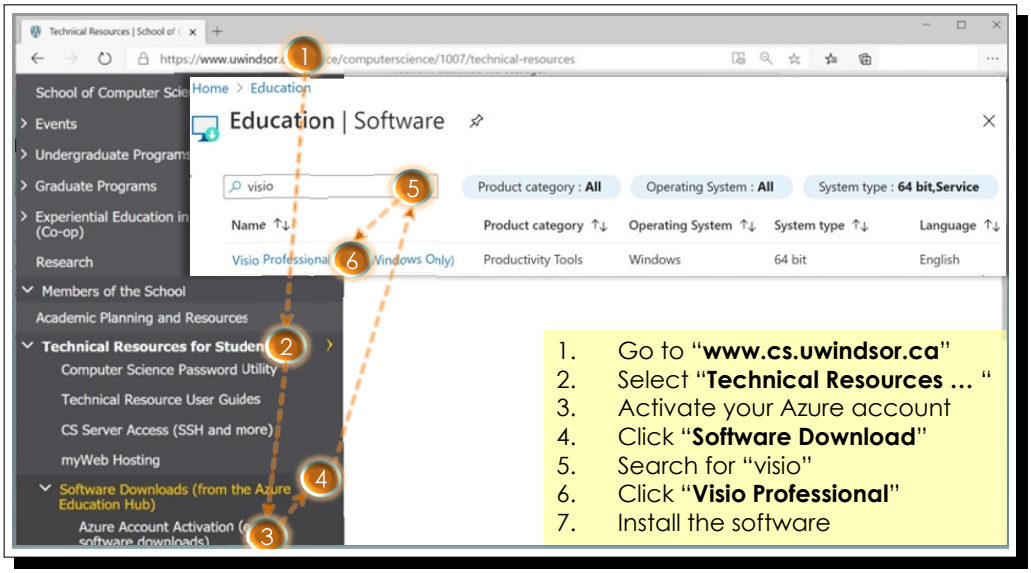
# SOFTWARE INSTALLATION ON WINDOWS

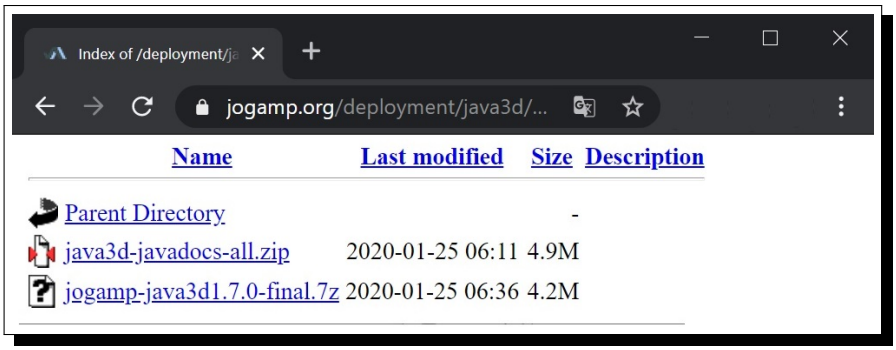
1. **Blender Simulation Software**
   - Go to *Blender Website* and download the latest version of installer.
   - Run the executable installer and follow the instructions for installation.




2. **Java Development Kit (JDK)**
   (a) Go to *Oracle Website* and download the latest version of JDK installer.
   (b) Run the executable installer and follow the instructions for installation.

3. (optional) **Visio Professional**
   - Connect to the University network via GlobalProtecct (refer to *this video* for installation)
   - Follow the instructions in the figure below to download and install the latest version of Visio Pro available at the Azure Ecuation Hub.





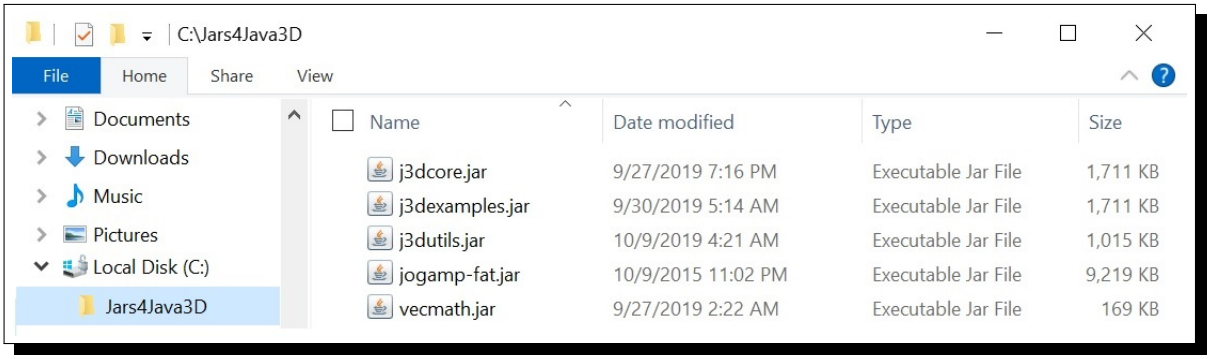

## 4. Java 3D Installation

(a) The Jars for Java3D are retrievable in a zipped file (shown in the above figure) available at *this link* for the latest stable version. The JogAmp fat JAR is also retrievable *here* as `jogamp-fat-all.7z` file. The jar files in both zip files can be extracted with *7-Zip*.

(b) Create a folder under the `C:/` and name it `Jars4Java3D`, i.e., `C:/Jars4Java3D`.

(c) Extract to this folder all the jar files in `jogamp-java3d1.7.0-final.7z`, including `j3dcore.jar`, `j3dexamples.jar`, `j3dutils.jar`, and `vecmath.jar`.

(d) Extract to the same folder the `jogamp-fat.jar` file in `jogamp-fat-all.7z`.

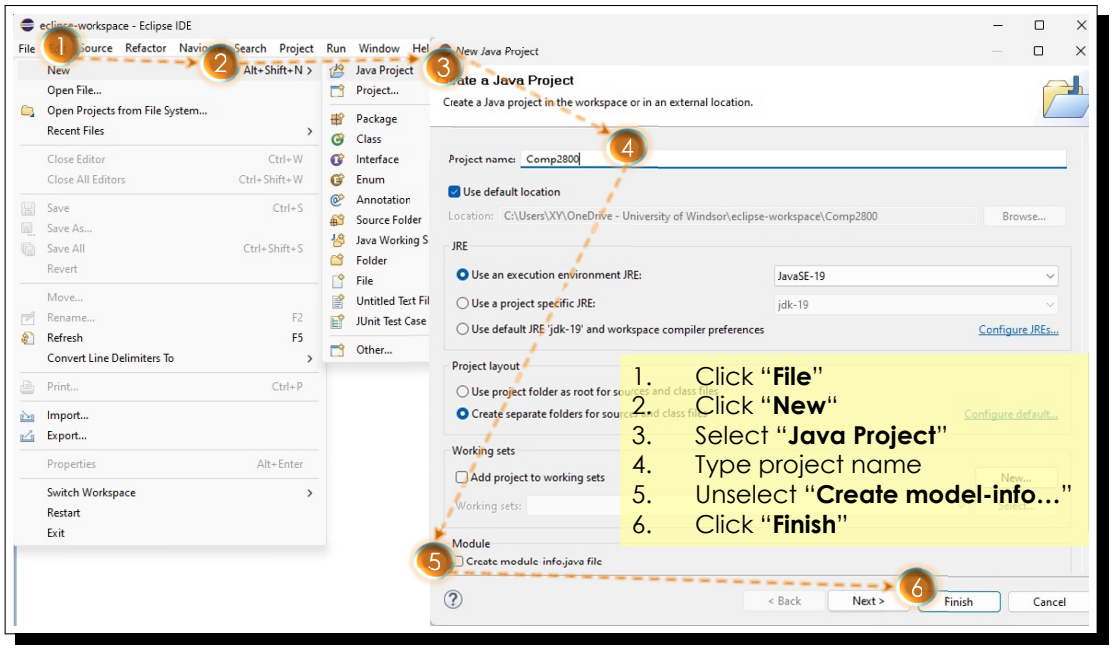


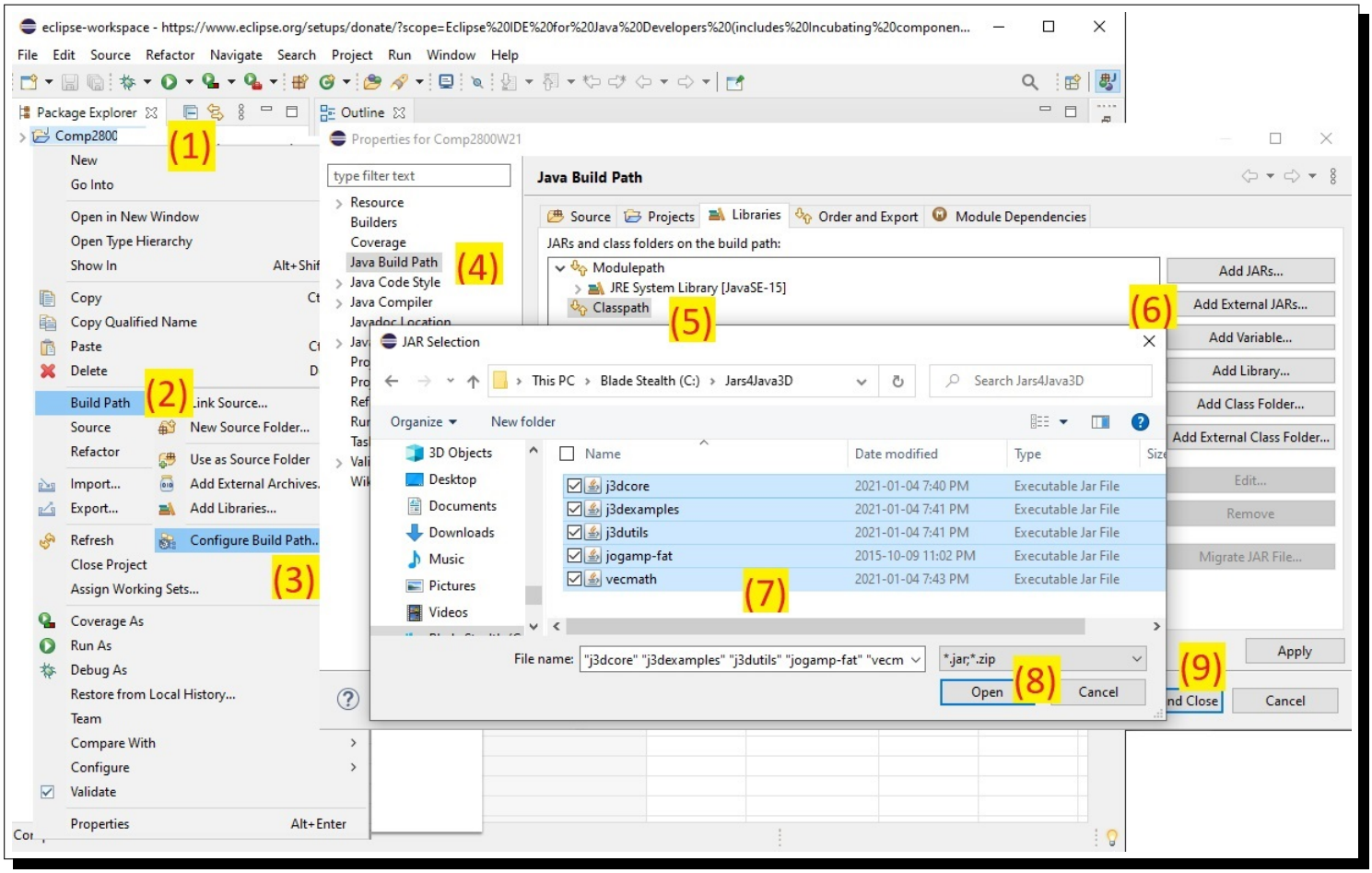

## 5. Eclipse Installation and Setup


(a) Download the installer from *www.eclipse.org/downloads/* as shown in the above figure.

(b) Start *eclipse* after the installer finishes installing "`Eclipse IDE for Java Developers`".

(c) Create a new Java project as `Comp2800XY`, where `XY` needs to be replaced by the initials of your name, and set JRE by default to the one installed in Step 1.



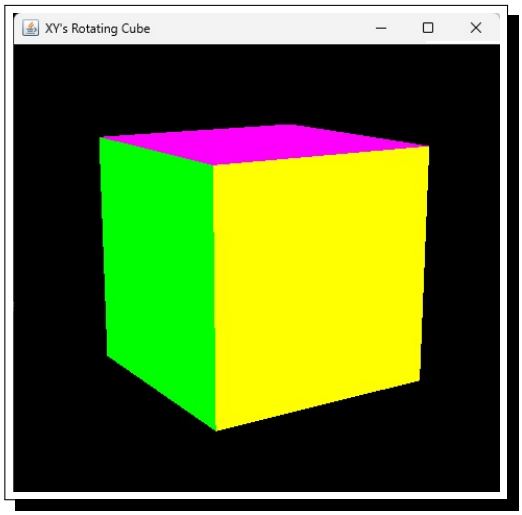

(e) Select `Classpath` under the `Libraries` tab in the window opened up by clicking `Java Build Path`.

(f) Choose to `Add External JARs` and open the jar files after locating them in the folder. The setup is completed after applying the changes and closing the popup windows.

(g) Create a java class file and name it to `RotatingCube.java`, whose codes can be copied

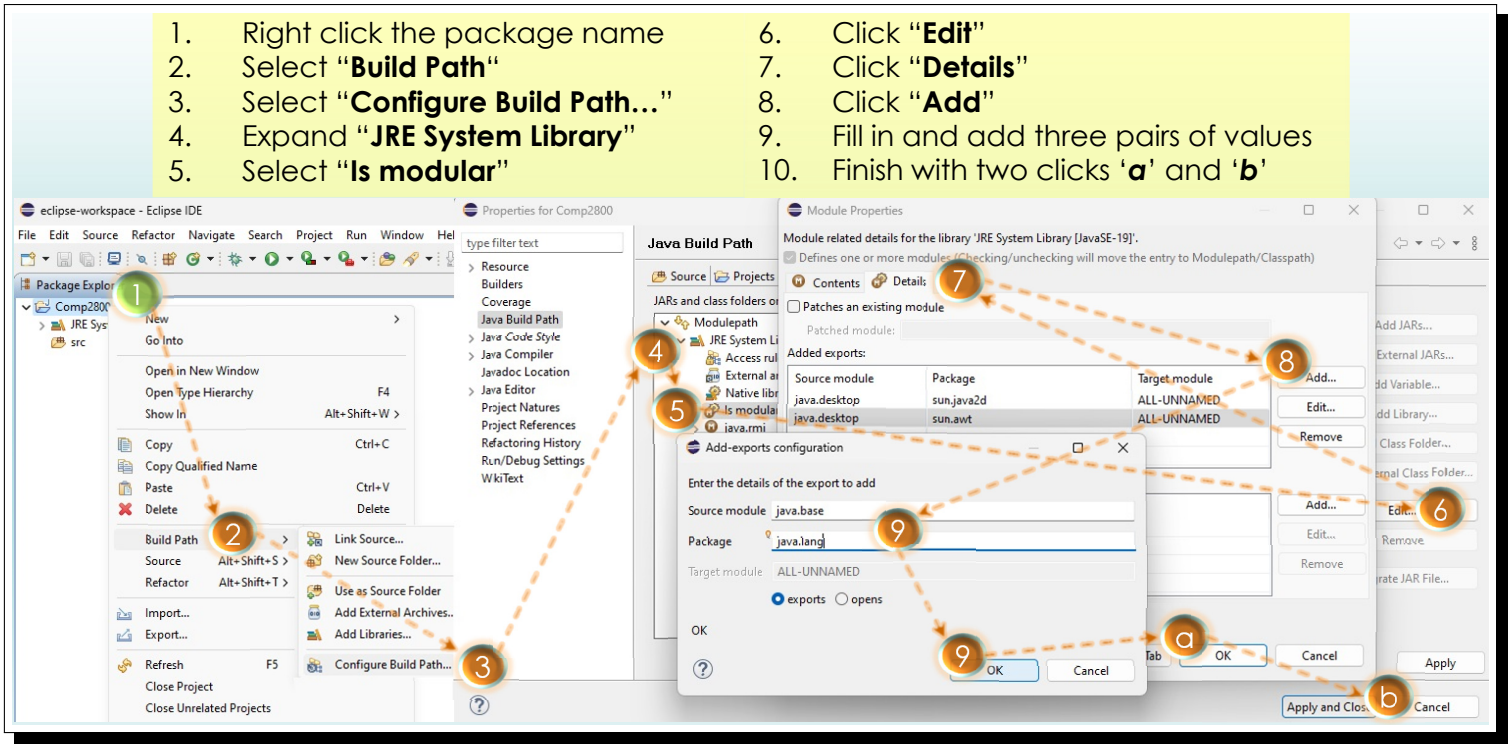
from the file posted in `Resources->Java3D Files` folder.

(h) Installation is successful if the `RotatingCube` program renders a spinning colored cube as shown in the right figure. Pressing the arrow keys should change the cube's location/size. Pressing the '=' key brings the cube back to its original location.




(i) Online documentation for the Java3D classes is available by following this *link*.

(j) Due to a bug of `JogAmp`, the setup of eclipse may encounter a problem that results in an error message as "`Index -1 out of bounds for length 1`" when running the testing program `RotatingCube.java`. In such a case, a solution[1] is to add three VM arguments by following the steps as shown in the following figure, which sets the values of `java.base/java.lang`, `java.desktop/sun.awt`, and `java.desktop/sun.java2d` to `ALL-UNNAMED`.




[1]This solution was discovered by Thang Tran, a student who kindly shares the information with the class.