How to Install JSindo for Mac

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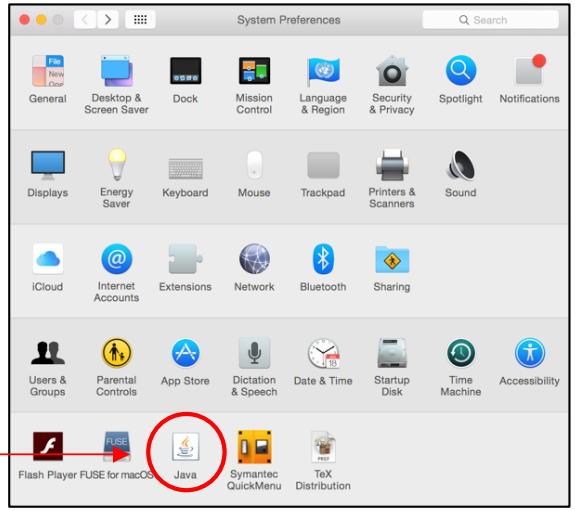
1. Install Java

STEP1: Let's check if your Mac has Java installed or not, and the version of Java if you have.

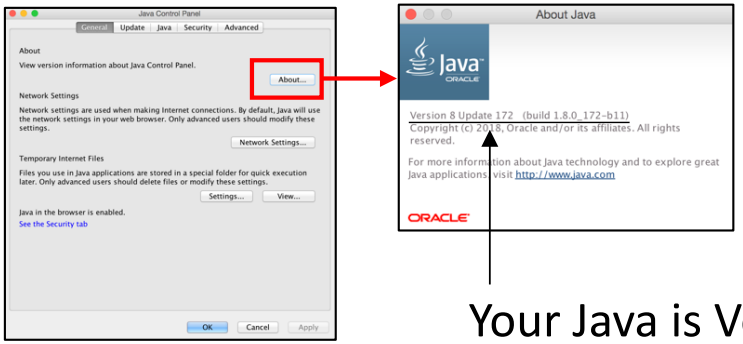
Open the "System Preference".

- If you don't find an icon of Java, your Mac doesn't have a Java yet. In this case, goto STEP2.

- If you find the icon, click the icon to open Java Control Panel, where you can check the version of Java.

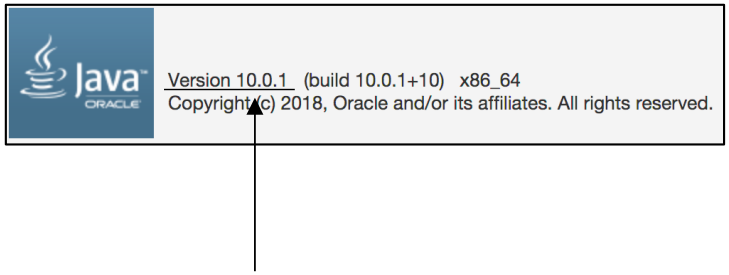


If your Java is Version 8, then you can skip the installation and go to Chap. 2.



Your Java is Version 8 Update 172!

If your Java is a newer one (version 9 and later), it is unfortunately NOT compatible with Java3D library, which JSindo use for visualization. In this case, uninstall Java and re-install version 8.



Unfortunately, your Java is Version 10.0.1…

To uninstall Java (version 10), type the following commands to remove the folders. You will be prompted to enter an adimistrator password.

```
> sudo rm -rf /Library/Internet¥ Plug-Ins/JavaAppletPlugin.plugin
> sudo rm -rf /Library/PreferencePanes/JavaControlPanel.prefPane
> sudo rm -rf /Library/Java/JavaVirtualMachines/jdk-10.0.1.jdk
```

WARNING!

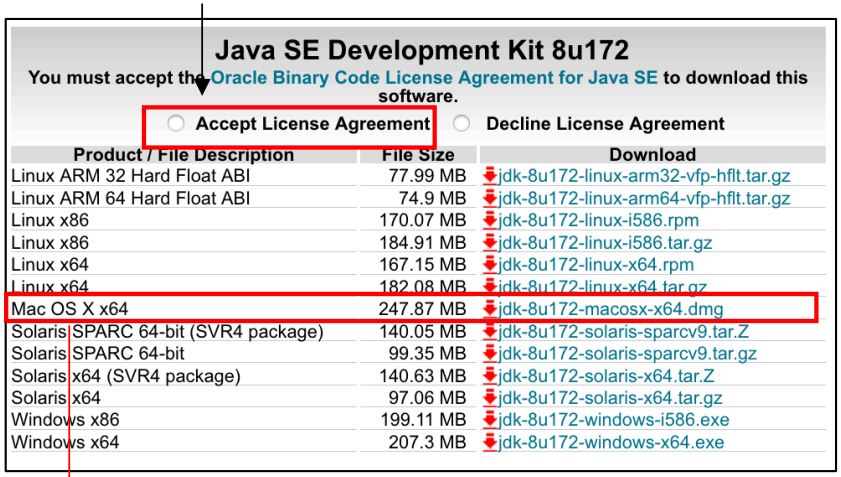
Be sure to type the right folders. You cannot redo this command!

STEP2: Install Java8.

Search “Java SE download” in Google and goto the following website.

http://www.oracle.com/technetwork/java/javase/downloads/index.html

accept



download and double click the dmg file

Click here, follow the instruction, and you’re done.

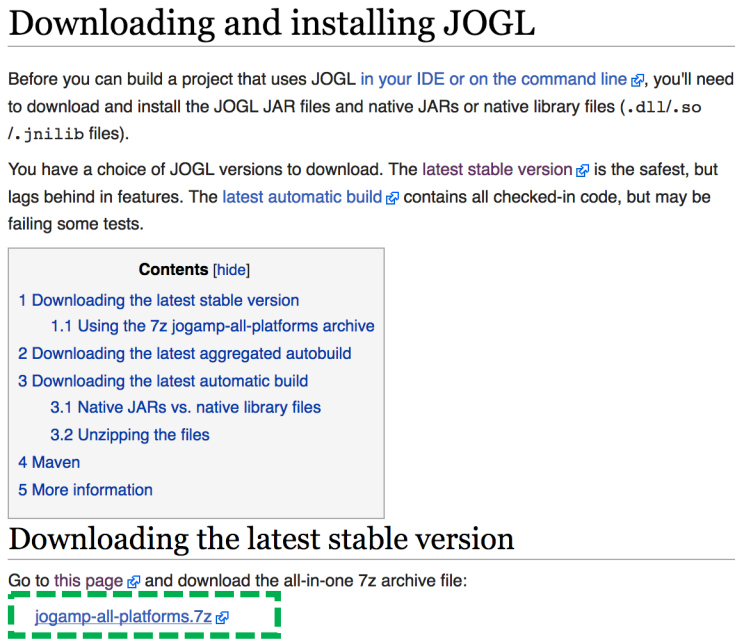
You may do STEP1 to double check you’ve got the right Java installed.

*) If you don’t have enough space, JRE is also OK. But, JDK is recommended since it let you use Java from a command line.

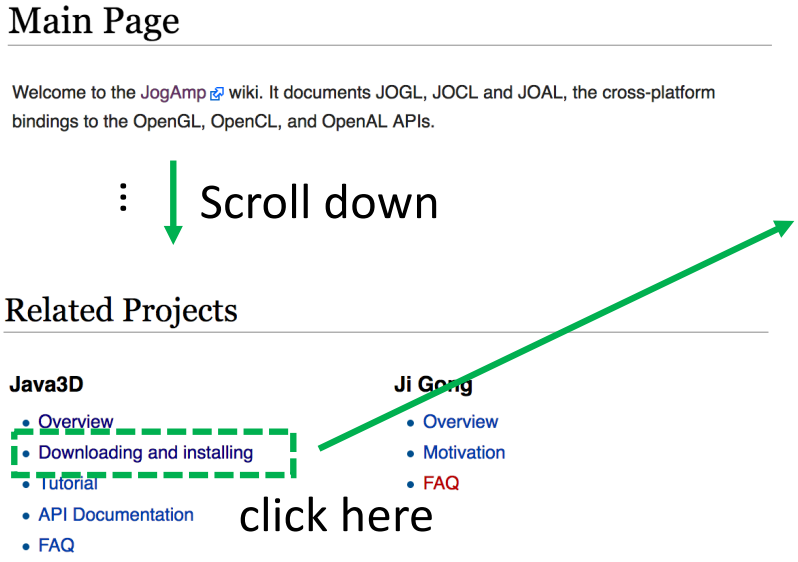
2. Download Java3D

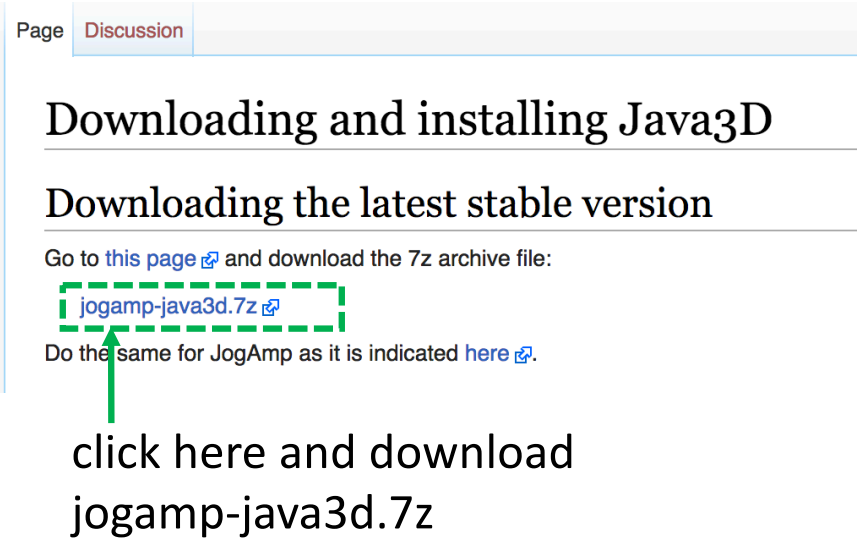
JSindo uses Java3D for visualization. A stable version, 1.6.0, is available from JogAmp. Goto http://jogamp.org

click here and download jogamp-all-platforms.7z



Go back to the Main page and scroll down





Unarchive the two files you've just downloaded. 7z files can be unarchived using, for example, "The Unarchiver",

The Unarchiver
MacPaw Inc.

You will find jar files in jogamp-all-platforms/jar and in jogamp-java3d. The following jar files are needed for JSindo:

```
jogamp-all-platforms/jar/
     gluegen-rt.jar
     gluegen.jar
     gluegen-rt-natives-macosx-universal.jar
     jogl-all.jar
     jogl-all-natives-macosx-universal.jar
```

```
jogamp-java3d/
     j3dcore.jar
     j3dutils.jar
     vecmath.jar
```

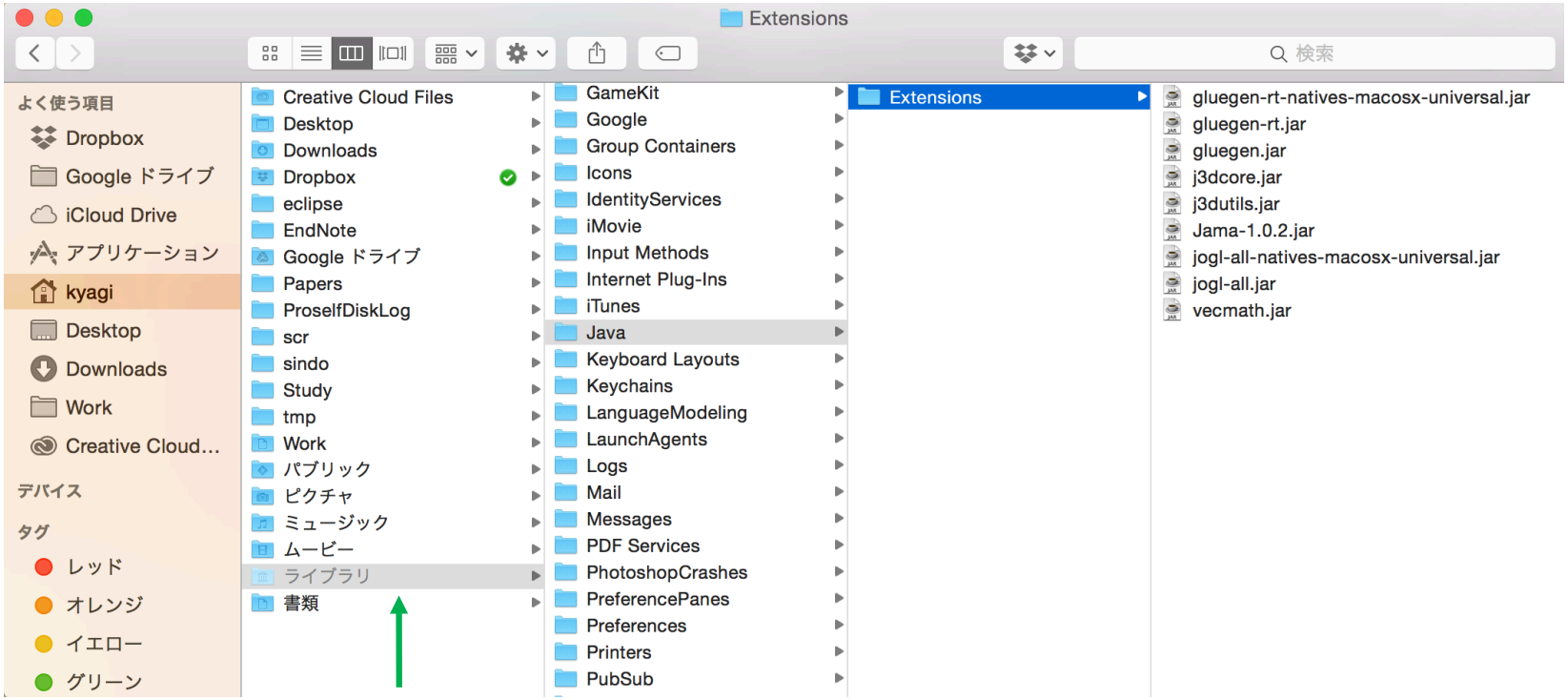
3. Download JAMA

JAMA is a linear algebra library for JAVA. We use it for matrix multiplications, diagonalization, and so on. It can be downloaded from,

https://math.nist.gov/javanumerics/jama/

4. Copy jar files

Copy the jar files to an extension folder, which is set to ~/Library/Java/Extensions. Click Go menu of finder with option key pressed (~/Library is hidden) and choose Library. Create the folder if you don‘t have it yet, then copy the jar files in this folder.



5. Download and test JSindo

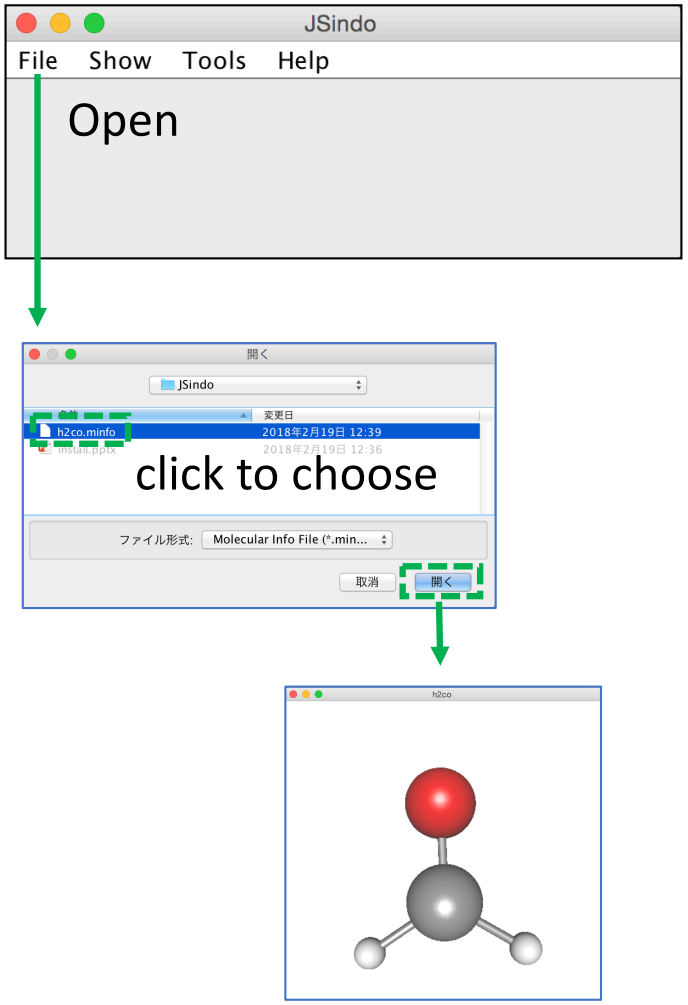
Download JSindo-4.x.jar and sample.zip (or sample.tar.gz) from our website:
http://www.riken.jp/TMS2012/tms/en/research/software/sindo/index.html

Now, double click JSindo-4.0.jar. You should see a control panel of JSindo. If you don't see the panel, review the installation of Java.

Let's open "sample/h2co.minfo" included in sample.zip. Double click sample.zip to unzip the file.

In JSindo control panel, click File -> Open, choose "h2co.minfo", and click Open. If you see formaldehyde, you're done with the first step!

If this step fails, it is highly likely that JogAmp/ Java3D has a problem. Double check if the right jarfiles are located in the folder.



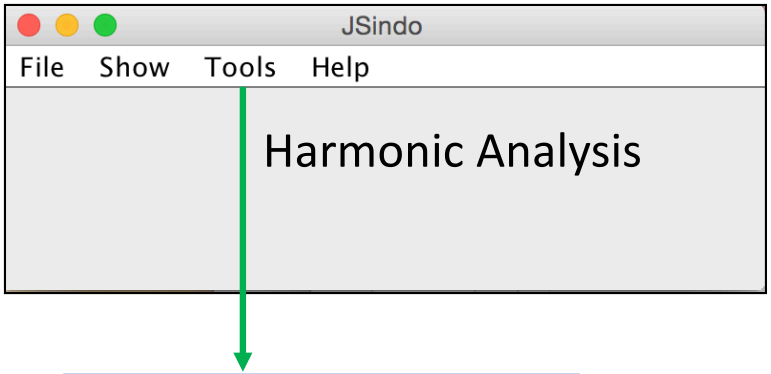
Finally, goto Tools -> Harmonic Analysis. This should create a panel of “Normal modes”.

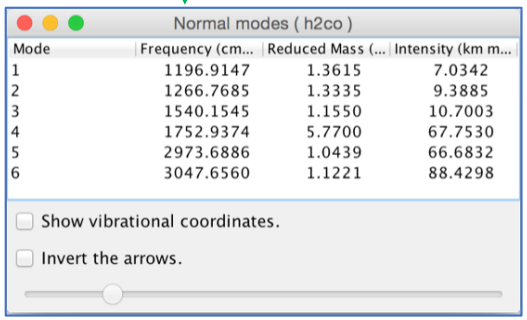
If you don’t see this panel, JAMA isn’t working. Check if the jarfile of JAMA is set correctly.

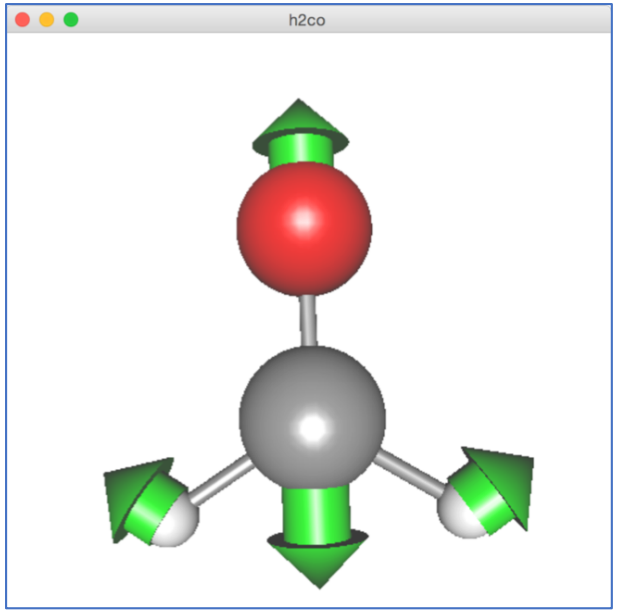
If the panel appears, you’re all set! Congratulations!

Check on ”show vibrational coordinates”, and choose a mode you want to see. Vibrational motion will be indicated by arrows. You can “Invert the arrows” by a check box, and change the magnitude using a slider.

Thanks for using JSindo!
Enjoy!







FAQ

1. How do I use JSindo from a command line?

Make sure you have installed JDK, not JRE, which let you use java from a command line. Type “java –version” in the terminal. If you get a version info, then you’re OK. If not, install JDK (see Chap. 1).

Then, you can start JSindo by

```
>java –cp /path/to/JSindo-4.0.jar JSindo
```

You may add the following line in your ~/.bashrc,

```
alias jsindo='java –cp /path/to/JSindo-4.0.jar JSindo'
```

After source, you can invoke the program by typing “jsindo” in the command.

```
> . ~/.bashrc
> jsindo
```

2. Is it possible NOT to use the extension folder?

Create a new folder (${HOME}/JSindo/jar in the example below), and copy all jar files in there,

```
> jsindo_jar=${HOME}/JSindo/jar
> mkdir -p $jarfiles

> cp /path/to/jogamp-all-platforms/jar/gluegen.jar    $jsindo_jar
> cp /path/to/jogamp-all-platforms/jar/gluegen-rt.jar $jsindo_jar
> cp /path/to/jogamp-all-platforms/jar/jogl-all.jar   $jsindo_jar
> cp /path/to/jogamp-all-platforms/jar/gluegen-rt-natives-macosx-universal.jar $jsindo_jar
> cp /path/to/jogamp-all-platforms/jar/jogl-all-natives-macosx-universal.jar   $jsindo_jar

> cp /path/to/jogamp-java3d/j3dutils.jar $jsindo_jar
> cp /path/to/jogamp-java3d/j3dcore.jar  $jsindo_jar
> cp /path/to/jogamp-java3d/vecmath.jar  $jsindo_jar

> cp /path/to/Jama-1.0.3.jar $jsindo_jar
> cp /path/to/JSindo-4.0.jar $jsindo_jar
```

Then, type the following command to invoke JSindo:

```
>java –cp "$jsindo_jar/*" JSindo
```

3. Is it possible to retain the installed Java, and use Java8 only for JSindo?

Probably, yes. You need to invoke java8 directly from a command line. (See FAQ #1)

I could run JSindo with Java8 executable by the following command:

```
> /Library/Java/JavaVirtualMachines/jdk1.8.0_172.jdk/Contents/Home/bin/java ¥
                                                  –cp /path/to/JSindo-4.0.jar JSindo
```

Note that the folder name may be different, and check carefuly the location of the Java8 executable.