Installing Java, Java 3D, and Eclipse in a Windows Environment

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1   Introduction

This document is a guide to installing *Java*, *Java3D*, and *Eclipse* in a Windows environment. Our intended audience is undergraduates, graduate students or postdoctoral fellows in science and engineering who have some knowledge of programming and who would like use *Eclipse* and *Java* to develop scientific applications in their area of specialty.

2   Installing *Java 2*, *Java3D*, and *Eclipse* in a Windows Environment

2.1   Downloading and Installing the Java™ 2 SDK, SE 1.4.2

In this section we describe how to download and install the various components you will need to create applications in *Eclipse* using *Java* and *Java3D*.   The screen shots below are current as of April 2006.

First, go to the Eclipse website, http://www.eclipse.org/.

Figure 2.1-1: The Eclipse Homepage

From this page go to *Downloads*.

Figure 2.1-2: The Eclipse Download Page

First you will need to download and install a Java Runtime Environment (JRE) and other components from Sun. Under the heading "**Get Eclipse**", you will see a paragraph that says in part:

> *... You will need a Java runtime environment (JRE) to use Eclipse. All downloads are provided under the terms and conditions of the Eclipse.org Software User Agreement unless otherwise specified.*

Click on the link in the sentence "You will need a Java runtime environment (JRE) ".

Figure 2.1-3: Java Runtimes

Go to the row labeled "Sun Windows" and chose Java™ 2 SDK, Standard Edition Version 1.4.2. You will now be at the Sun download page.

Figure 2.1-4: Sun Download Page

You want the SDK (Software Development Kit), so choose **Download J2SE SDK**

Figure 2.1-5: Sun SDK SE 1.4.2_11 Download Page
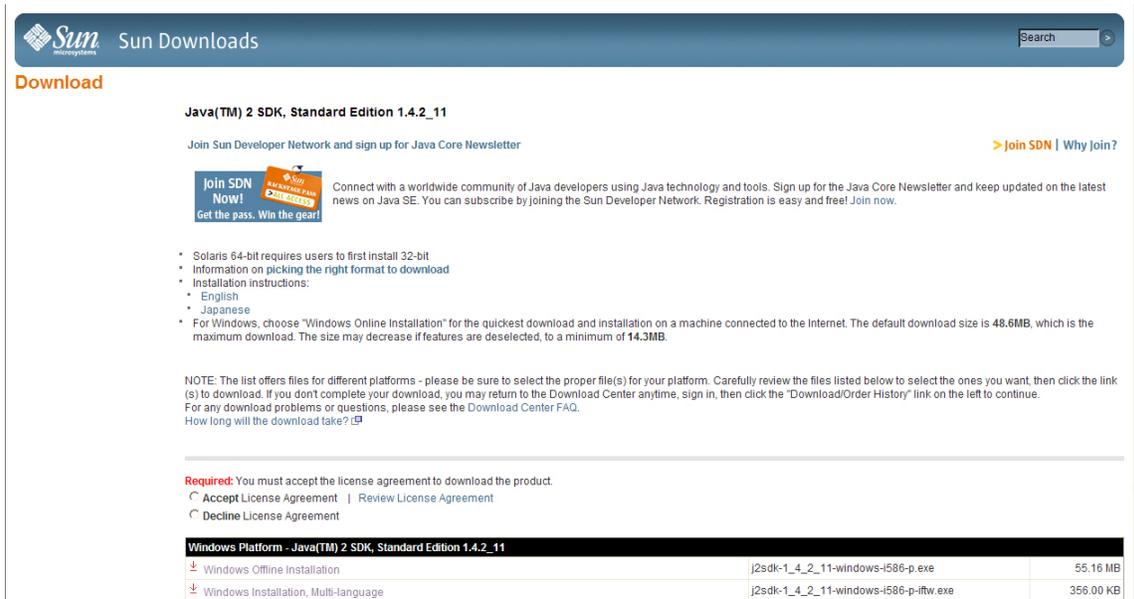
Download the *.exe* file from **Windows Platform - Java(TM) 2 SDK, Standard Edition 1.4.2_11:   Windows Offline Installation,** j2sdk-1_4_2_11-windows-i586-p.exe**.**

Install the package by double clicking on the downloaded *.exe* file. After the install, do not restart your machine.

2.2   Downloading the Eclipse SDK 3.1.2

Go back to the Eclipse download page and click on Eclipse SDK 3.1.2, Windows (103 MB) [torrents].

Choose a mirror site (University of Buffalo CSE Department is a good site for the US) and download the eclipse zip package *eclipse-SDK-3.1.2-win32.zip*.

There is no installer package for *eclipse*. Create a folder on your *C:* drive named *Development*, and create a folder in that folder named *Tools*. Unzip the above *.zip* file into the *Development > Tools* folder.   This will create an *eclipse* folder *C:\Development\Tools\eclipse* and the unzip process will put the contents of the IDE there.

2.3   Downloading and Installing Java 3D™ API 1.3.1

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Go to Sun's download page at http://java.sun.com/downloads/. You will be at the
following page:

Figure 2.3-6: Java Technology Downloads

From the "*Full J2SE Technology Downloads List*" pull down menu choose *Java3D*.
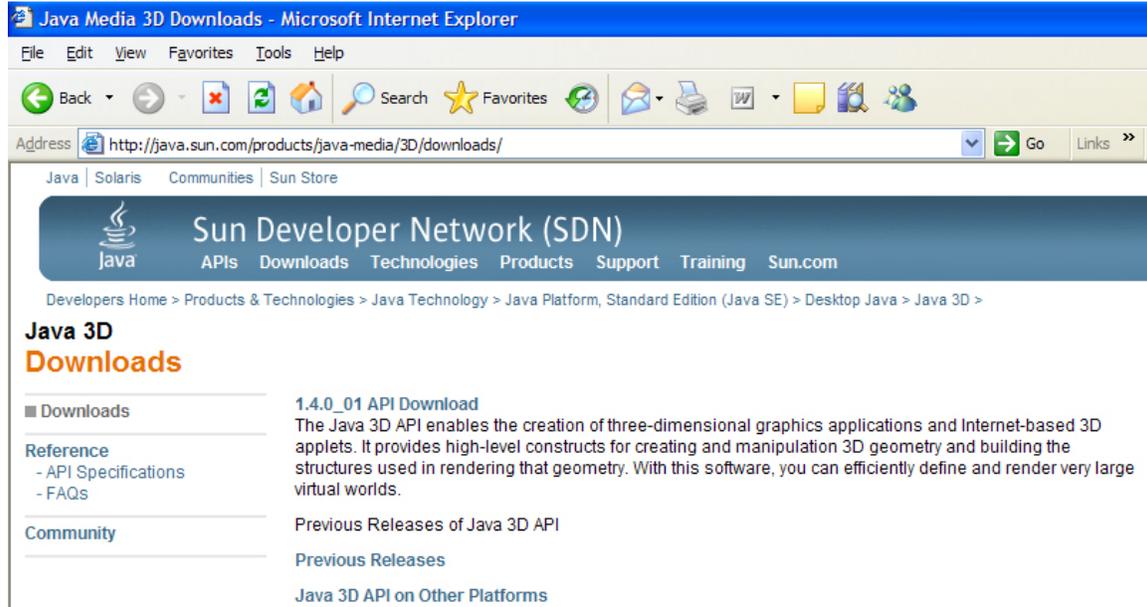
Figure 2.3-1: Java3D Downloads Page

Chose *1.4.0_01 API Download*. On the next page choose download *1.4.0_01 API.*. You will be a page that looks in part like:
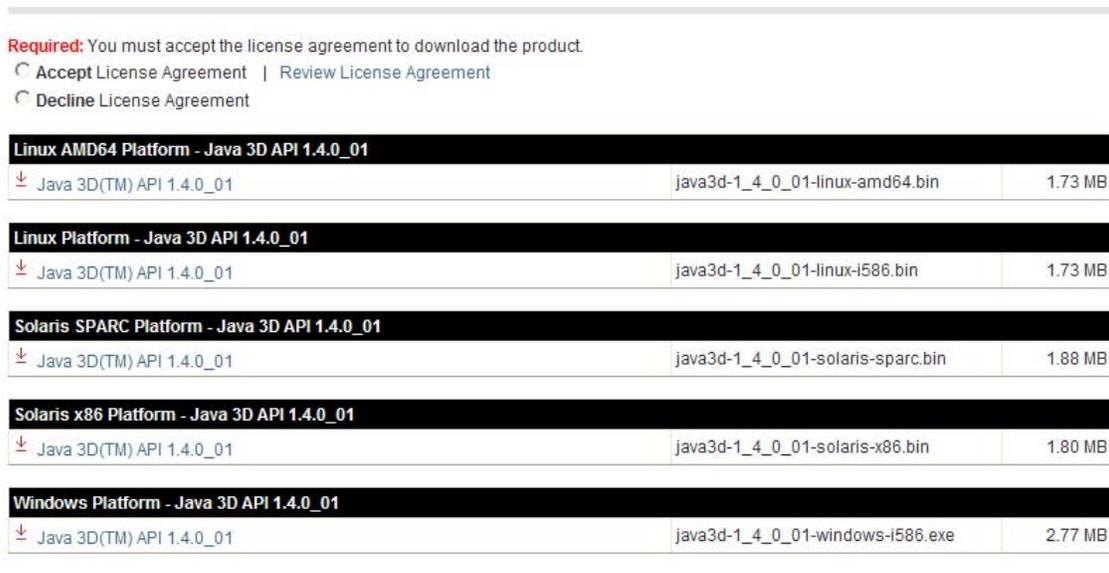
Figure 2.3-2: Final Java3D Downloads Page

Accept the license agreement and under **Windows Platform - Java 3D(TM) API 1.3.1** choose *Java 3D for Windows (OpenGL Version) SDK for the JDK (includes Runtime)* to download the *.exe* package *java3d-1_3_1-windows-i586-opengl-sdk.exe.*

Once the *.exe* file is downloaded double-click to install. The install will automatically find the directory where you installed the Java2 SDK package and install Java3D there.

Reboot your machine and delete the installers.

3 Downloading a Code Base and Creating a Project in *Eclipse*

3.1 Downloading the Code Base

Download the project code base from the web. This could for example be the *SundquistDLIC* code base, which you can find at http://web..mit.edu/viz/soft/ . In the narrative below we will refer generically to the folder which contains this code base as *ProjectName*. This would for example be the *SundquistDLIC* folder containing that code base, or another code base from the *TEAL Project*, or a different set of code entirely.

3.2 Creating a Project in Eclipse

Create a folder in your *C:\Development* drive named *Projects*. Place the code you have downloaded in a folder named *C:\Development\Projects\ProjectName*.

Chose "*File>New>Project*" in the Eclipse menus. Then choose "Java Project".
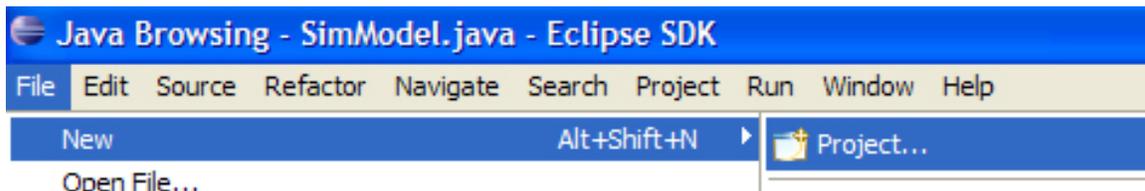
Figure 3.2-1: Creating a Project in Eclipse

In the dialog box that comes up (see Figure 3.2-2), enter "*ProjectName*".
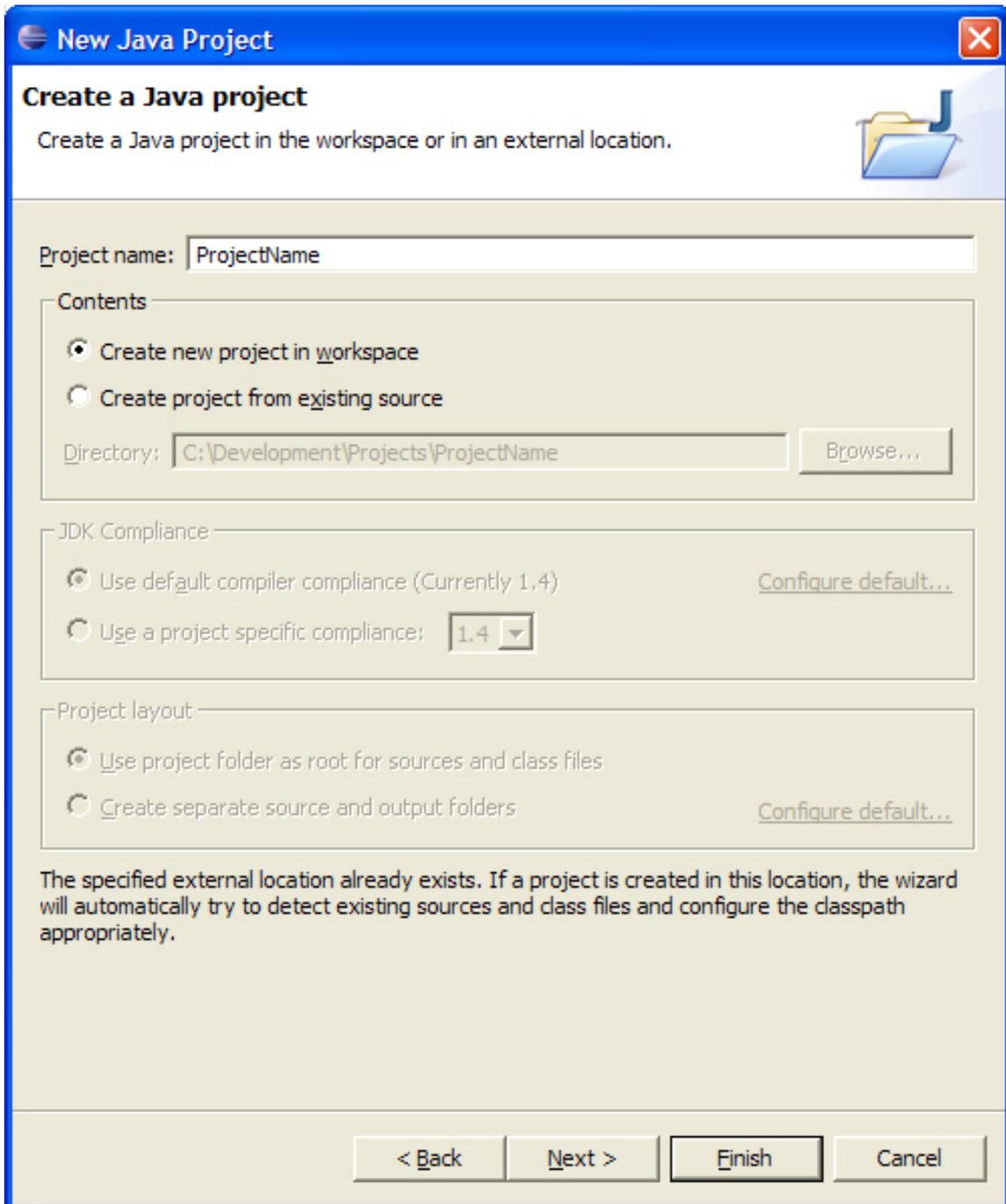

Figure 3.2-2: Specifying the Name of the Project in Eclipse

Choose "*Next>*". The *ProjectName* project will be built in Eclipse.

3.3   Generating JavaDocs for the *ProjectName* Project in Eclipse

You may want to generate javadocs for this project, if they do not already exist, or if you modify the existing code (ee http://java.sun.com/j2se/javadoc/index.jsp for information on javadocs). Do this by making sure Eclipse is in the "Java Browsing perspective" (third icon from the upper right below) and choose "*Project > Generate Javadoc*".

A set of javadocs will be generated in the folder *C:\Development\Projects\ProjectName\doc*. The *html* file *index.html* in that folder is the root *html* file for the javadocs.
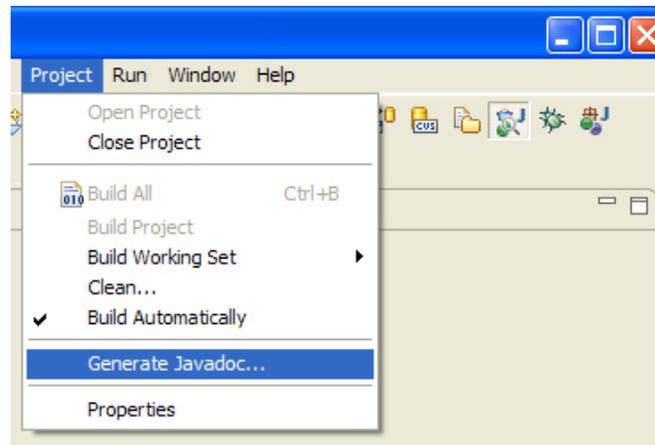

Figure 3.3-1: Generating Javadocs

4   References

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