

Project Setup Guide for CMPS 115 Winter 06

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1. J2SE Development Kit (JDK) Setup

We recommend using [J2SE 1.5.0 from Sun](#) for the class projects. Just make sure your code runs on the lab machines and the code is consistent with your development toolkits.

Besides Sun's JDK, there are many other choices for the JDK. For example, [IBM JDK](#) (which supports many operating systems that Sun's JDK does not support, like AIX, OS/2, and z/OS), [Bea JRockit SDK](#), [Apple J2SE](#) (for Mac lovers), and open source JDK implementations like [Kaffe](#) (which integrates [GNU Classpath](#) into Kaffe's JVM). Besides traditional *javac* compiler, there are also other choices like [Jikes](#) from IBM that boasts its fast compilation speed.

2. Java Integrated Development Environment (IDE) Setup

2.1 Eclipse

Eclipse is one of the leading IDE and tool platforms and we recommend you use it for this class. It has a nice plugin architecture that enables function extension by plug extra features into the basic Eclipse platform. For more information, check it out at [Eclipse.org](#) and [download a copy of Eclipse platform SDK 3.1.1](#) for your operating system.

These are some useful Eclipse links:

- a) EclipsePlugins (<http://eclipse-plugins.2y.net/eclipse/index.jsp>)
You can find many interesting plugins such as UML editors (some can automatically generate code), GUI Builders, profiling and testing tools, etc.
- b) Eclipse plugin central (<http://www.eclipseplugincentral.com/>)
Another place you may find plugins of your interest.

2.2 Other IDE

Borland JBuilder offers integrated software development support for the Java platform and it offers a “foundation” version for free. Those interested can download a copy at [JBuilder download site](#). The latest version is JBuilder Foundation 2005.

Sun offers a bundle that includes Netbeans IDE and J2SE 1.5.0. You can get it from [Sun’s Java download site](#).

There are other nice IDEs that people talk about: [BlueJ](#), [IntelliJ](#) (fee based, trial for 30 days), [JCreator](#) (fee based, trial for 30 days) and so on. Feel free to try out and select one that you like the best.

2.3 Non-IDE

Some people don’t like to use an IDE at all. For them, text editors are more than sufficient. In this case, be sure to set your environment variables and classpath correctly since lots of work is done on the command line. For text editors, we had a good experience with [UltraEdit](#) (fee based) on windows and vi, GNU Emacs on *NIX, in case you don’t have one of your favorite text editors, you can try them out.

3. DForge UCSC

Thanks to developers at the Software Engineering Lab in SOE and the original [GForge](#) developers, we have a web-based software collaboration system called [DForge UCSC](#). It is similar in style to [SourceForge](#) and integrates many useful functions like version control for software resources, bug reports, discussion boards, wiki and more.

Steps to get started with DForge:

STEP 1: Read DForge [FAQ](#) and [visual guide](#).

STEP 2: Register to create a personal account.

STEP 3: We have registered a public project as the shared area for CMPS 115 Spring 05. Please add that to your personal project list. The project name is cmps115_Spring05.

STEP 4: Finalize the group members for your development group, get their usernames and inform TA. TA will create group projects on DForge and you can add your group project to the personal project list. That’s it for you to set up DForge for your class.

4. Setup DForge UCSC with Your Development Tools

DForge uses the [Subversion](#) as its version control system and supports [WebDAV](#) as its network transfer protocol. Subversion is similar to CVS, but it solves many problems within CVS. In the next few sections, we will show you how to set up a connection between your development tools and the DForge repository.

Example settings for the shared project **CS115WINTER06**:

SVN repository URL: <http://svn.dforge.cse.ucsc.edu/csl15winter06>
Username: <username for DForge>
Password: <password for DForge>

4.1 For Eclipse

Eclipse has a useful plugin for Subversion called Subclipse. The simplest way to install the Subclipse plugin is to use the Eclipse Update Manager (note that we are using Eclipse 3.0+ here).

1) Start Eclipse.

2) Help->Software Updates->Find and Install... A new window will appear, select “search for new features to install” and click Next. Select “New Remote Site...” from a list of buttons on the right-hand side. A “New Update Site” window appears, fill in Name field as “subclipse” and URL as “<http://subclipse.tigris.org/update>”. Figure 1 shows the “New Update Site” window.

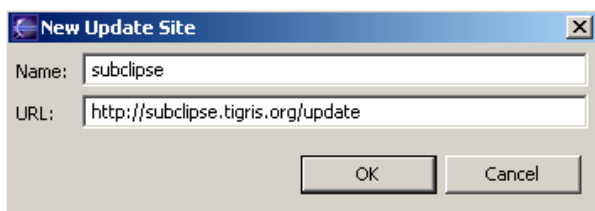


Figure 1. New Update Site Window in Eclipse Update Manager.

Click OK and a new update site will appear. Select that new update site “subclipse” (Figure 2) and click “Next”. Follow the instructions and the plugin will be installed.

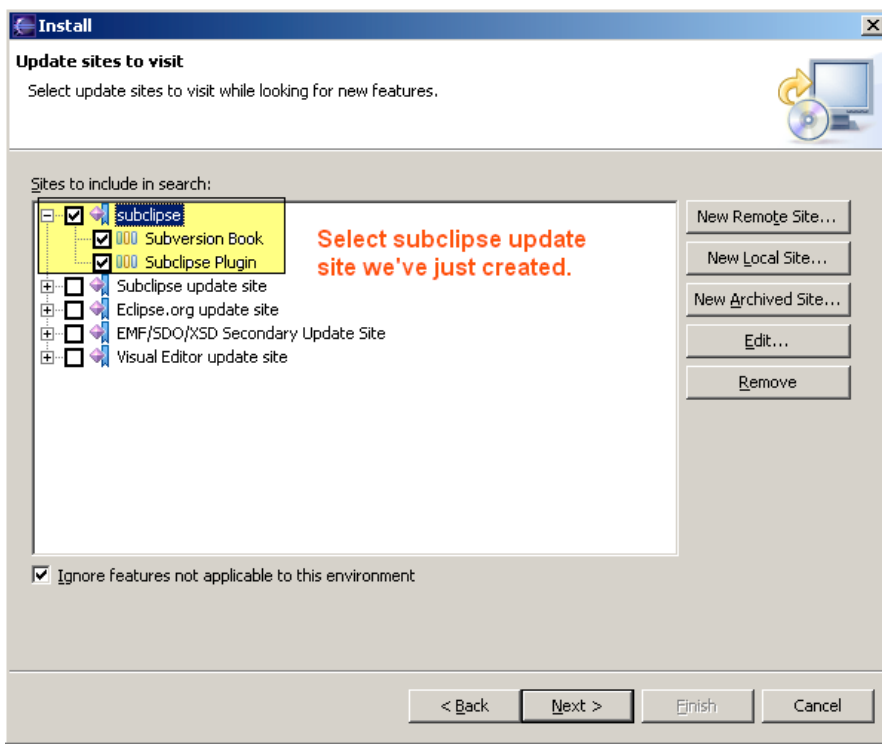


Figure 2. Select Subclipse update site to install the plugin.

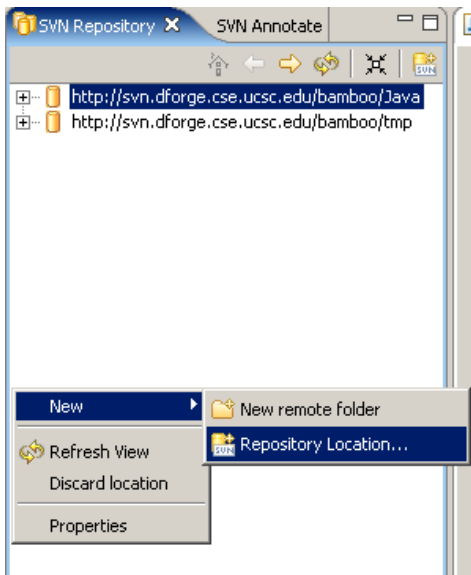


Figure 3. Add a New Subversion Repository Location.

3) Setup the DForge project repository in Eclipse. Window->Open Perspective->Other... In the new window, select “SVN Repository Exploring” and click OK. Next we will switch into the SVN Repository perspective. Right click in the white space in SVN Repository window, and select New->Repository Location... (Figure 3). In the new window (Figure 4), fill in the information about your DForge project: project Subversion URL, your username and password and click “Finish”. Figure 4 is the example for the class shared project cs115winter06.

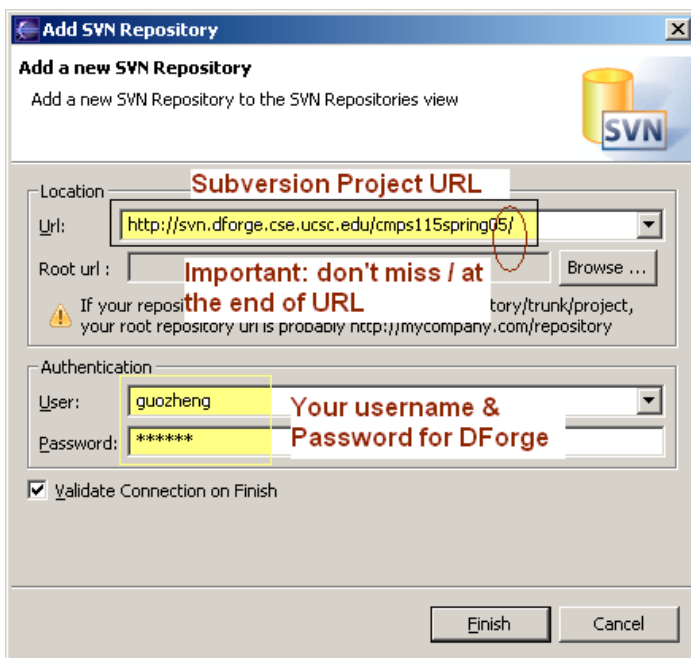


Figure 4. Fill Subversion URL and Authentication Information.

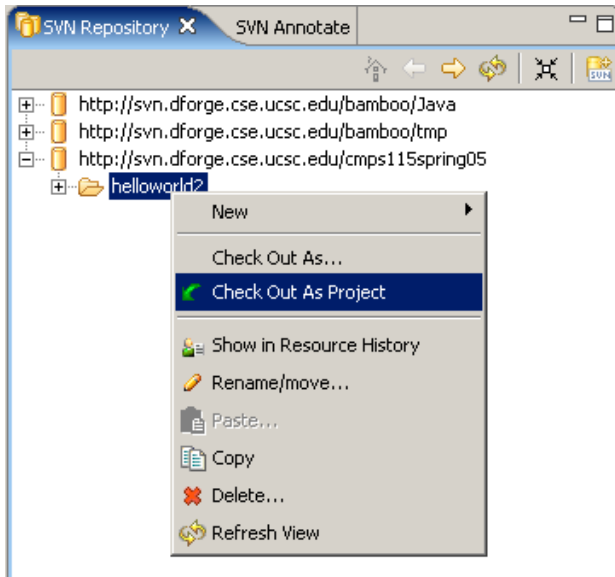


Figure 5. Checkout the Subdirectory as a Project.

When you have added a Subversion repository location, a new location item will appear in the SVN Repository perspective, e.g. <http://svn.dforge.cse.ucsc.edu/cms115spring05> in our example. Select that new item and right click on any sub-directory that you want to use. Then, check out that directory as shown in Figure 5. You can choose “check out as project” or do a customized checkout using “check out as...”.

Switch to Java perspective and you can start working on the checked out project now. **Note that usually, sub-directories will be separate project directory structures that include source code, documentation, library files, etc.** For example, under <http://svn.dforge.cse.ucsc.edu/cs115winter06>, we can have projects like helloworld2, game1, etc. Users can select what projects to check out.

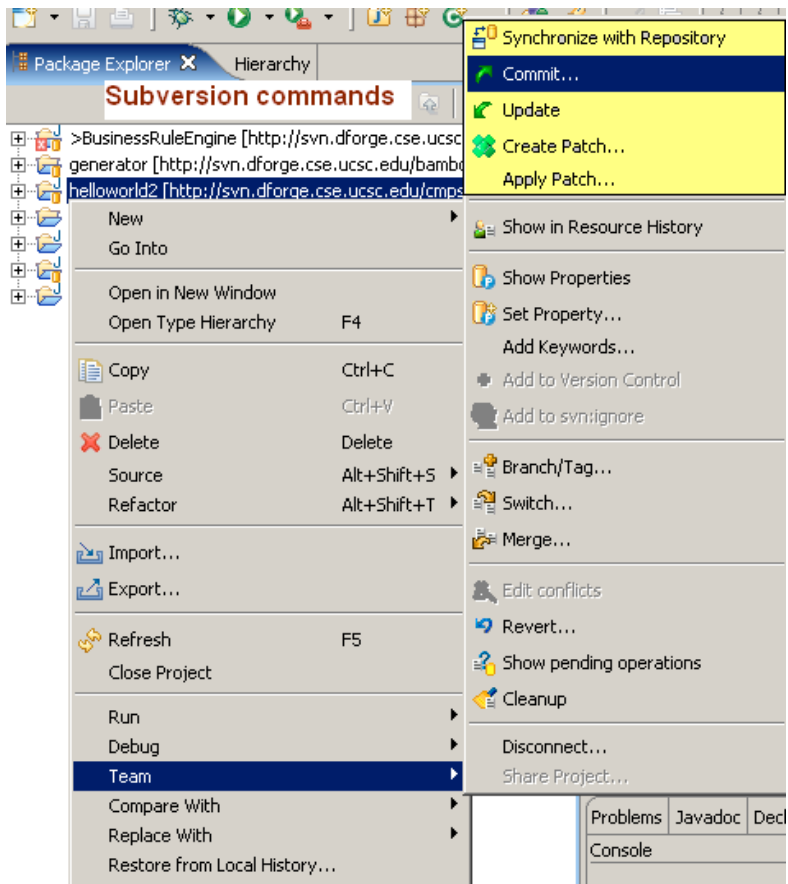


Figure 6. Subversion commands in Java Perspective.

Figure 6 shows the Subversion command in the Java Perspective in Eclipse. You can use commit to checkin your code after making changes, use update to grab the latest version from the repository, etc. For more information about how to use Subclipse and subversion, use Subclipse help in Eclipse (Help->Help Contents->Subclipse – Subversion Eclipse Plugin).

4.2 For other IDE and Text Editors on Windows

There is one convenient windows GUI client for Subversion called [TortoiseSVN](#) (some might know about TortoiseCVS, a similar CVS GUI client). It is well integrated with Windows Explorer by the addition of extra menu items.

If your IDE does not support Subversion plugin or you are using text editors on Windows, we recommend using TortoiseSVN. It comes with a detailed user manual as well.

4.3 For Other Operating Systems

If you are using another Operating System other than Windows, e.g. Solaris, *NIX, etc, don't worry, you can grab a copy of [Subversion](#) and install that if svn command line tool

is not available on your system (to test, just type “svn” on the terminal, if the system cannot find the command, then svn client is not installed).

For more details about the command line tool, type “svn help” or read the SVN Book (<http://svnbook.red-bean.com/>).

5. UML Development Tools

5.1 ArgoUML

[ArgoUML](#) from tigris.org (the same organization where Subversion is developed) is one of the most well-known open source UML modeling tools. We recommend it for the class projects. It supports features like UML 1.3 standard, XMI 1.0 for UML 1.3 (XMI is a data model exchange format), forward and reverse engineering for Java, C++ and PHP (you can design UML models with automatic code generation and vice versa), Object Constraint Language (OCL), etc.

Installation:

ArgoUML is written in Java, so the only requirement is that you have JDK or JRE installed on your machine.

STEP 1: Download a copy of latest stable distribution (0.18.1 as of December 2005). It is a zip file (ArgoUML-0.18.1.zip), just unzip it to your local drive, e.g. C:\argouml.

STEP 2: Change to the argouml directory and you will find a list of jar files, among which you can find one called argouml.jar. If you are on Windows or Mac, just double click on argouml.jar and it will launch ArgoUML. Otherwise, use a command line and type “java -jar argouml.jar”.

Getting Started:

ArgoUML is a well maintained project and you can find rich documentation for both users and developers. Please read the [quick guide](#) and [user manual](#) while you play with ArgoUML.

5.2 Other UML tools

Many other [UML tools](#) exist that varies from open source projects to full-fledged commercial products that cost up to thousands of dollars. Some famous ones include [Rational Rose XDE](#), [Borland Together Suite](#), [Microsoft Visio](#), etc.

With the popularity of Eclipse, a rich set of [Eclipse UML plugins](#) are also available. Those plugins are tightly integrated and implemented using Eclipse technologies, e.g. [Graphical Editing Framework \(GEF\)](#), [Eclipse Modeling Framework \(EMF\)](#) and [UML2](#). Examples include [EclipseUML from Omondo](#) and [SDE for Eclipse from Visual Paradigm](#). But most of these plugins are fee-based and their free community versions are limited in function and not intuitive for beginners.