CS 157 Lab 0 September 22, 2009
Introduction to Sun Lab, Java, and Netbeans

1. Make sure that each of your pair can login, logout, have a good, strong password, set your ***.cshrc*** file properly, and complete this step. Right click on an open part of the desktop, select Tools and Terminal. You should have a new terminal window. Click inside the window to make sure it is the active window. Type ***which netbeans*** and hit **enter**. You should see a pathname to where netbeans is located. If you get a message saying that netbeans was not found, your ***.cshrc*** file was not set up properly. Ask someone to come look at your files if you cannot get it fixed.

2. We need to be able to see a listing of all the files in a particular directory (folder). There are many ways to do this, depending on how much information you want to see. The simplest way is to type ***ls*** into a terminal window. ***ls*** stands for "listing". The listing that you get will only contain the names of the files. If you type ***ls –l*** you will see lots of details about the files. We'll talk about what most of that information means later. If you type ***ls –a*** you will see a listing of all files in the directory, including "hidden" files. Hidden files in Unix are not very mysterious – the file names simply begin with a period. This is to keep you from accidentally deleting or otherwise messing up a file. Each terminal window opens into a particular directory. By default, to begin with this is your home directory. But as time goes on, you will create many subdirectories and need files from directories located elsewhere on the file system. So you need to understand how to change directories. The basic command is ***cd***, but it's usually used with additional arguments. If you want to change directory to the parent from where you are at the moment, you can type ***cd ..*** (that's cd with two periods). This means change directory up. The root of the entire file system is denoted with a single forward slash. You can go directly there by typing ***cd*** / (that's cd with a space and then a forward slash). Get a listing of the files in that directory. On most Unix systems, you are allowed to look at most files, but you cannot necessarily do anything with them. If you want to return to your own directory at any time, you can simply type ***cd*** with nothing else on the line. If one of the files in a directory happens to be a directory, and it either belongs to you or you have permission to go into it, you can change directory into it by typing **cd** and then the name of the subdirectory. For example, in the root directory there is a directory called ***usr***. Go into that directory. You should see a bunch of files, most of which are directories. One of them is called ***local***. Go into that directory and "look around". Go back to your home directory and look around. Logout and have your partner login and repeat most of what you did in this step.

3. Start netbeans by typing its name in a terminal window with an ampersand character (&) after it. The ampersand is not necessary. But if you do add it to a command, Unix will run that command separately and keep your terminal window active for you to use for other purposes. So in order to keep from having to open new terminal windows all the time, it would be a good idea to add an ampersand character to the end of the line every time you start netbeans.

4. When netbeans starts, get past all of the registration stuff (do not register here; you can do that on your own computer). Choose the File menu, start a new Java project, choose **Java application**, then for the project name type in **Hello World**, for the project location and folder accept the defaults, uncheck the box that says "Create Main Class", and click Finish. The netbeans workbench will show you a list of projects in the upper left (you now have one project called **Hello World**) and a large programming window in the middle. Create a new class by right clicking on the **Source Packages** part of the project, and selecting New, then Java Class. Use as the class name **Hello**. To keep netbeans from complaining, we should use a package that is not the default package. This is easy. We will just type the word **main** into the spot where netbeans is wanting to know the package we plan to use (this simply means the directory where the source files will be placed). Click on Finish. You should see a new window in the middle panel labeled "Hello.java", and the beginning of a Java program already supplied for you. Turn to page 9 of the text and fill in the rest of the program found at the top of the page. Do NOT use the line numbers found at the left – those are only used by the textbook authors to refer to particular lines when they are talking about them. When you have typed the program in without errors (no red underlining left), run the program. You can do this in many ways: hit the run button, use the run menu, right click on **Hello.java** in the project tree and choose "Run file". Within a few seconds the output from the program should appear in the bottom pane. Look carefully at your source program. Notice how netbeans identifies reserved words and other names. What do you think "System" refers to? What do you think "out" refers to? What kind of a thing is "println"? Try changing the spelling of "args". Will the program do anything differently when run? Try changing the spelling of "String". Close the entire netbeans environment, saving your work. Logout and let your partner login and repeat the last two steps.

5. After both teammates have completed step 4, logout and have one person log in again, start netbeans, and retrieve your **Hello.java** program. In the Projects panel on the left, find the **main** package, right click on it, and create a new Java class called **Hello2**. You should see a new window appear in the middle labeled "Hello2". Turn to page 12 of the text and type in the rest of the program found at the bottom of the page. Run the program and make sure it produces the output shown at the top of page 13. Exit from netbeans. In a terminal window, start firefox by typing **firefox &** (again, the **&** is not required, but this keeps your terminal window free). Navigate to **netstorage.valpo.edu** and login with your Novell ID and password. When you see your files, go to the shared drive and place the two **.java** files into a new folder called **Hello**. You will be prompted for which files to upload. You can find the files in the **src** folder under the **Hello World** project. When you get this done successfully, close firefox, logout, and let your partner do this step.