

CMPSC 250
Analysis of Algorithms
Fall 2012
Bob Roos
Lab 1
Tues., 4 September 2012
Nothing to Hand In

Today's lab is devoted to installing a program development environment for use with our textbook. *The installation is intended as a useful exercise in and of itself.* It would have been easier to just have the software installed for you by our system administrator, but there is value in seeing what all is involved.

Please read the following comments carefully and completely—they may save you some grief later on!

- It is best if you do all of your work by typing text commands into an open Terminal window rather than using the more visual interface (windows with pictures of folders, etc.).
- I suggest that you copy and paste commands from the web site to the terminal window; this will avoid problems caused by typos. (Yes, it is tedious, but you have two hours to fill!)
- If, by the end of lab, you can't get things to work properly, don't close the terminal window—I want to be able to see what you've done. *See me right away!*
- Don't deviate from the instructions. For instance, you need a directory in your home directory named “`algs4`” – don't spell it differently or put it in a subfolder or make any other changes.

If you decide you don't want to use the Dr. Java environment, you don't have to. For instance, feel free to just compile and execute programs from the command line. However, the Java libraries `stdlib.jar` and `algs4.jar` that come with the book will be used throughout the course and I'll assume you have access to them and know how to use them. The installation instructions automatically connect these to Dr. Java, but they can be used independently.

Good Luck!

1. Navigate your Web browser to the installation instructions for Linux at the textbook web site; the link is <http://algs4.cs.princeton.edu/linux/> (or you can follow a trail of links starting at the textbook website if you prefer).
2. Follow the instructions in the first three bullet points of the section named “0. Install the Programming Environment.” Don't worry about the line that says “you must have Administrator privileges”—we are going to skip those commands.
3. When you come to the commands beginning with “`sudo`” (fourth bullet point), ignore them—these are used to install Java and we are skipping this step.

4. Follow the instructions in the fifth, sixth, and seventh bullet points (last command is `mv findbugs.xml findbugs-2.0.1`).
5. The eighth bullet point is probably the only tricky part. You need to edit a file in your main directory. According to the instructions, this file should be named either `~/.bash_profile` or `~/.profile`. However, when I tried this, I did not have either of these files. Instead, I had a file named `~/.bashrc`. See which one you have—type the commands:

```
ls ~/.bash_profile
ls ~/.profile
ls ~/.bashrc
```

If you get a “No such file” error, move on to the next one. As soon as you find which file you have, edit it (e.g., `gedit ~/.bash_profile`) and add a line to the end of the file as described in the installation instructions. Ask if you don’t have any of these files!

6. Now complete the instructions in sections 1, 2, and 3.
7. Skip section 4, “Command-Line Interface”. (If you try this you’ll be told that we have version 7 of Java; however, Dr. Java is set up to use version 6 instead.)
8. Try sections 5, 6, and 7 to see if you can compile and execute from the command line.

If you have time left over at the end of lab, visit the textbook website and click on the link “Java code. The algorithms and clients in this textbook.” Try copying some of the examples there into Dr. Java and compiling and executing them. Some of these require input files or command line arguments (“args” values)—see the comments at the beginning to determine this.

If things don’t work, ask—there might be a simple answer. (For example, Dr. Java doesn’t support input redirection, so if you want to run a program that redirects input from a file you will need to do this from the terminal window using, e.g., `java ProgName < input.txt`.)

When you are done, please demonstrate your installation to me by showing me how to compile and run a program that uses the book’s libraries. The book’s sample program “Interval2D.java” is a nice example to show.