Lab Guide

1. Log in on a lab machine
2. Try to run sample code on a lab machine

All codes (available on [http://algs4.cs.princeton.edu/code/](http://algs4.cs.princeton.edu/code/)) are available on ~cs171000/share/book/ (to go there, type):

```
cd ~cs171000/share/book
```

If you want to run a book programs from CL (Command Line) place stdlib.jar (code book library) in CLASSPATH. You can run your program in Eclipse as well. To run program **BinarySearch** in CL after login type:

```
cd ~cs171000/share/book/
java -classpath .:/home/cs171000/share/book/stdlib.jar BinarySearch tinyW.txt < tinyT.txt
```

You can also set your $CLASSPATH variable and run java programs without giving classpath in run command:

```
export CLASSPATH=.:./home/cs171000/share/book/stdlib.jar
cd ~cs171000/share/book/
java BinarySearch tinyW.txt < tinyT.txt
```

You have to export CLASSPATH every time after login. If you would like to save your CLASSPATH permanently, you should add this command export to file .bash_profile in your home directory:

```
echo export CLASSPATH=.:./home/cs171000/share/book/stdlib.jar >> ~/.bash_profile
```
After that, every time you log in you can just go to the path and run a program:

```
cd ~/cs171000/share/book/
java BinarySearch tinyW.txt < tinyT.txt
```

### 3. Run program using a Eclipse

If you want to run your programs on Eclipse, follow these steps:

1. Open Eclipse
2. Create a java project. Go to File -> New -> Java Project. Make sure that your workspace is correct (e.g. /home/userID/cs171/hw1).
3. On the left you should see now the Package Explorer with your project.
4. To create new program (class) you should go to File -> New -> Class.
   Make sure that source folder has proper value (lab/src).
5. Write a program (e.g.: Hello World)
6. If you want to run your program go to Run -> Run . You should see result on the Console.
7. If you would like to set arguments to run, go to Run -> Run Configurations -> Arguments. Set arguments, save this configuration and then run.

### 4. Work at home

You can also work from home on your own laptop (or via SSH). If you are using Windows, please get familiar with PuTTY [http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html](http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html). If you are using Linux or OSX, use console, e.g.:

```
ssh [userID}@lab0z.mathcs.emory.edu
```

If you want to transfer your files from home to the lab machine, use some ftp client (e.g.: WinSCP).
You have also access to the share directory of cs171000:

~cs171000/share/

You can access it by log in on a lab machine or via web browser:
http://www.mathcs.emory.edu/~cs171000/share/book/

5. Homeworks

All your homeworks should be placed in ~userID/cs171/hwX (e.g.: ~userID/cs171/hw1/).
Please DO NOT create any additional directories. Just place *.java files in these directories.
All your code will be running on lab machines. If you are using your own laptop/PC, please make sure that your code will compile on lab machines.

6. Debugging

Debugger is very helpful step in writing code. It could help with finding some logical errors – syntax errors could be finding much easier than logical. You should use debugger really often. If you want to debug your program:

• Set a breakpoint in the some point of code
• Go to Run -> Debug and click yes to open debug perspective.
• Use the Step over and Step in to navigate your program and observe results.