Lab Exercise #1
Test Compilation and Javadoc Generation
CS 2334, Fall 2010

Name: _____

Learning Objectives (Milestones):

1. Install Java Development Kit
2. Successfully compile a sample Java program
3. Generate the Javadoc documentation for the program

Instructions:

This lab exercise *requires a laptop with an Internet connection*. Once you have completed the exercises in this document, you will submit it for grading. You should legibly write your name at the top of this lab handout. **Note: individual work is required for steps 4-8.**

1. Install the Java Development Kit. Refer to the *Java Installation Instructions* on the class website.

   Once you have Java installed, you can check your installation to ensure everything is correctly installed and that your PATH environment variable is correctly set by opening a command window (click on *Start | Run* and then enter the text "cmd" and click "OK"). If you have the correct version installed and your path set correctly the following commands should give results similar to those listed below the commands.

   ```
   >java -version
   java version "1.6.0_21"
   Java(TM) SE Runtime Environment (build 1.6.0_21-b07)
   Java HotSpot(TM) Client VM (build 21.0-b07, mixed mode, sharing)...

   >javac -version
   javac 1.6.0_21
   ...
   ```

3. Download the sample "Lab1.java" source code from the class website. Save this file into a folder on your laptop where you will keep your CS 2334 Projects and Labs. Just for today (this may change next week), create a `cs2334` folder in the root of your laptop's hard drive (this would be `C:\cs2334`) and then create a lab1 folder inside of the `cs2334` folder (`C:\cs2334\lab1`) and store these files in the lab1 folder.
   You will also need to download the "docs.opt" file from the class website. Save it in the same folder as the Lab1.java file.

4. Add the following code to the main method of `Lab1.java` using Notepad (or any text editor you desire, but make sure you do not use a word processor, or any other program that does any markup/formatting at all). Notepad can be found in Windows 7 under *Start | All Programs | Accessories* (and similar locations for other Windows OS versions). Do NOT use an IDE at this time.

   ```
   Lab1 lab1Program;

   lab1Program = new Lab1( "This is the first lab exercise for CS 2334." );
   ```

5. Open a DOS command prompt by selecting *Start | "Search Programs and Files"* and type "cmd" and ENTER at the prompt. Compile the `Lab1.java` file from the DOS command prompt with the following command (do NOT use Eclipse or another IDE). You should receive several compilation errors that you need to identify and correct in the source code. List these errors in the space provided below with a short explanation of how you fixed them. Be sure to list the **line number** that the actual error occurred on in the `Lab1.java` file. Once you have removed all of these errors, the file should compile without any errors or warnings.

The DOS command is: `javac Lab1.java`

List the errors found and give a short explanation of how you fixed each one:

6. Run the `Lab1` program from the DOS command prompt (again, without Eclipse). This should result in runtime errors. Fix these errors in the program source code and verify that the program works by running it again. The command required to run the program is:
    `java Lab1`

List the runtime errors encountered and briefly explain your solution to the problems:

7. Generate Javadoc documentation for the `Lab1` program with the following command. (This must be done at the DOS command prompt.)

```
javadoc @docs.opt *.java
```

This command will create a new sub-folder named javadocs and place several files in the folder including an index.html file. The output of the `javadoc` command should be similar to:

```
Creating destination directory: "javadocs\"
Loading source file Lab1.java...
Constructing Javadoc information...
...
```

Next, open the `javadoc\index.html` file using a web browser and inspect its contents.

Describe the contents of the index.html file.

8. Submission Instructions:

All components are due by 11:29 on Friday, August 27th.

a. Zip up your program and the resulting javadocs:

Option 1: right click on `Lab1.java` and select "Send to: new zipped (compressed) folder", then drag the javadocs directory into `Lab1.zip`

Option 2 (unix/OSX): `zip lab1.zip Lab1.java javadocs/*`

b. Submit lab1.zip to D2L (the "lab 1" dropbox)

c. Hand-in a hardcopy of this worksheet to the TA or the instructor (the beginning of class is fine).

Note: if you have completed this lab with time left in your lab section, please continue with Lab 2 (in particular, getting Eclipse and the Finch drivers installed).