Lab Exercise #2: DRAFT
Debugging with Eclipse
Computer Science 2334
Due by: Friday, September 3, 2010, 11:29 am

Names: _____

Learning Objectives (Milestones):

1. Install Eclipse and import an existing project
2. Install the Finch drivers
3. Successfully compile a sample Java program for the Finch
4. Use the Eclipse debugger to identify and remove bugs in the program
5. Generate Javadoc documentation for the program using Eclipse

Instructions:

This lab must be performed in collaboration in groups of two (any exceptions must be cleared with one of the instructor or the TAs).

1. Download the TestFinch.java from the class website. Save this file to your Desktop.

2. Create a "Lab2" project in Eclipse and add TestFinch.java to the Lab2 folder in your Eclipse workspace. You may need to perform a "File | Refresh" on the project for Eclipse to recognize the file.

3. Link finch.jar and finch_core.jar to your project. Select "Project | Properties" and then "Java Build Path | Libraries". Link the jar files using the "Add External Jars" button.

4. Eclipse should highlight several errors that you need to 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 `TestFinch.java` file. Once you have removed all of these errors, the file should not contain any errors or warnings.

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

5. Browse the Finch API documentation: http://www.andrew.cmu.edu/user/tlauwers/Finch/

6. Add the following functionality to TestFinch.java:
   a) While the nose is green, if the Finch is turned upside down, then it should emit an "unhappy" buzz. Once the Finch is no longer upside down, it should stop making sound
   b) After the Finch nose turns blue, the Finch should wait for the value of the left light sensor to drop by 20 before turning the nose red

7. Demonstrate TestFinch to the TA or the instructor

8. Generate the Javadoc documentation for the `Lab2` program. Select the project. Select "File | Export". Select "Javadoc" and "Next". Select your Lab2 folder in your workspace, select "private" visibility, destination to "doc", and click "Finish". More details are given in the slides.

This will create a new sub-folder named "docs" and place several files in the folder including an index.html file.

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

Briefly describe the contents of the index.html file.

9. Generate a zip archive file containing your entire project. Select the project. Select "File | Export". Select "Archive File" and "Next". Select your Lab2 folder in your workspace and set the archive file name to "Lab2.zip", and click "Finish". More details are given in the slides.

10. Submission Instructions:

All components are due by 11:29 am on Friday, September 3rd.

a. Submit Lab2.zip to the D2L dropbox.

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

c. Demonstrate your implementation of TestFinch to the instructor or the TA. Our preference is for this to happen in the lab section. Otherwise, please visit one of us during office hours. Finches will be available to be checked out from the Engineering Library after 3:00 pm on Thursday.