CIS 201 – Computer Science I
Laboratory Assignment 8

Introduction

In this lab you will redeem yourself by writing programs to implement and/or test your exams problems.

Create a directory, `Lab08` in your `CS1` directory. You will be creating Java programs in this directory named `Prob1.java`, `Prob2.java`, and so forth, corresponding to the questions on Exam 2.

Prob1

Create a program named `Prob1.java` with the contents of problem 1 in your exam. Instead of the class name `Temp`, use the class name `Prob1`.

Compile and run this program. Compare the output with what you gave on your exam.

Checkpoint 1

Explain the output.

Prob2

Create a program named `Prob2.java` with the contents of problem 2 in your exam. Instead of the class name `Temp1`, use the class name `Prob2`.

Compile and run this program. Compare the output with what you gave on your exam.

Checkpoint 2

Explain the output.

Prob3

Create a program named `Prob3.java` with class name `Prob3` and with the prototypes given in problem 3 in your exam. Don't worry about copying the documentation.

Implement the `swap`, `randomInt`, and `shuffle` methods, using what you did for your 15-Puzzle assignment. The `randomInt` and `swap` methods should be *almost* identical to what you were given in the 15-Puzzle assignment, except that your `swap` method will use the formal array parameter instead of the ArrayList field variable.

Write a `main` method that tests your `shuffle` method. This should look almost the same as the `main` method in your `Shuffle.java` program for your last assignment. Be sure that you do more than one test, with different array sizes (including an array of size zero!).

Checkpoint 3

Explain what you have done.

Prob4

Create a program named `Prob4.java` with class name `Prob4`. Implement the `intArrayToArrayList` method and write a `main` method that tests your method. The test should verify that the sizes of the given array and ArrayList are identical and that the equality expression holds.

Checkpoint 4

Show us your work.

Prob5, Prob6, and Prob7

As you have done for the previous problems, create appropriate Java files containing the appropriate class names. Implement the method described in the exam problem and write a `main` method that tests your implementation.

Checkpoints 5, 6, and 7

Show us your work.