Homework 03

1 General Instructions

Homework should be submitted to Desire2Learn, as either a plain-text file or a PDF file. For parts of homework that are writing code you may wish to type your answers into an Eclipse projects so that you can test them, then copy and paste them into the document you are submitting.

Homework will be graded for <u>completion</u> – whether or not it looks like you have tried to answer all of the questions to the best of your ability – rather than <u>correctness</u>. In fact, you won't get much feedback about your homework submissions at all. Instead, I will be posting a solution after the due date. You are strongly encouraged to compare that solution to your own work, and ask questions if you do not understand any parts of the solution.

The purpose of homework is to help you figure out how well you understand the concepts that you can expect to see on the exams.

2 Assignment

1. What is a <u>class invariant</u>?

2. Suppose that we had a class named `Book` that has two fields: a `String` named `title` and an `int` named `pageCount`. Also assume that this class has a constructor with no parameters. Write a `clone` method that could go in this class, and would return a distinct, new `Book` object with the same field values.

3. Write an `equals` method that could go in the `Book` class described above, and returns `true` if the argument is of type `Book` and all of the attributes are the same and `false` otherwise. Remember that the `equals` method takes an `Object` parameter.

4. What is a <u>collection</u>?

5. Without looking at the example, write a `ensureCapacity` method that could go in the `Bag` (or `ArrayIntMultiSet`) class. Assume that the class has fields `data`, which is an `int[]` containing the elements of the bag, and `count`, which is an `int` containing the number of elements.

3 Submitting Your Work

If your document is not already plain-text or PDF, convert it to one of those formats. Then upload it to D2L under this assignment.