CMSC 131 Quiz 4 Worksheet

The fourth quiz for the course will be on Mon, Oct 18. The following list provides more information about the quiz:

- The quiz will be a written quiz (no computer).
- The quiz will be in your lab (discussion) session.
- Closed book, closed notes quiz.
- Answers must be neat and legible. We recommend that you use pencil and eraser.

The following exercises cover the material to be included in this quiz. Solutions to these exercises will not be provided, but you are welcome to discuss your solutions with the TA or instructor during office hours.

Exercises

1. What is the difference between a static method and a non-static method?
2. What is the difference between a non-static field and a static field?
3. What is a stack frame? Which values do we usually find in a stack frame?
4. Study questions located at: http://www.cs.umd.edu/class/fall2010/cmsc131H/studyQuestions/Week06/Week06Questions.html
5. Define a class Telephone according to the following information:

   Instance Variables (all private)
   a. area code → integer value
   b. three digit value → integer value
   c. four digit value → four digit value
   d. user name → String reference

   Instance Methods
   a. Constructor - Allows you to initialize all the instance variables of the class. Name the parameters after the instance variables (i.e., you must use the this reference)
   b. Default constructor - Initializes the object to the number 555-555-5555 and the name to null. This constructor relies on the previous constructor for the object initialization (i.e., you must use the this reference)
   c. Copy constructor
   d. Get/Set methods - Define get/set methods for all instance variables of the class.
   e. equals - Two numbers are considered the same if they have the same area code, three and four digit values.
   f. toString - Returns a string with the user name, followed by the phone number of the person.

   Static Variable (private)
   a. count - keeps track of how many unique phone numbers have been allocated. Notice we are not referring to how many Telephone objects.

   Static Method
   a. getCount - Returns the count value
   b. getDigits - Takes a String reference as a parameter and returns the number associated with the string. For example, if the String has the value “CAR” the method will return the integer 227