CSC 254 Study Guide, Unit 02, Fall 2016

Exam will be on Wednesday, November 16 in the regular classroom

Exam #2 will be a code writing exam.  It will involve classes.  The test will be done on paper without the assistance of an IDE or notes.  Material on Chapter 10 material will be on the final, not on this exam.  I am asking questions below.  They are things you should remember about classes.  I will not explicitly ask you these questions on Exam 2, but I might ask them on the final.  For this exam you should know the answers to the questions because they may help you write the various components of a class.

* The only actual question on the exam will be something like "what is the difference between an object and a class?
* What are the rules for class names?
  + Classes are capitalized by convention.
  + The name of a public class must match the name of the file. Ex. WeatherStation = new WeatherStation
  + There can only be one public class in a .java file.
* Be able to write a complete class that implements the Comparable interface.
* Constructors
  + What is the return type of a constructor? (Trick Technical question) Void: Does not exist
  + What is the name of a constructor? Same as the class
  + How is "this" used to distinguish between class variable and function parameters? This(that).classversion=functionversion
  + What is the default constructor?  Does every class have to have one?
  + What happens if no constructor is declared?
  + If you have one constructor, how can it be used to call the other constructor?
* Setters
  + What is the return type of a setter?
  + What is the argument type of a setter?
  + Is "this" ever used in setters?
* Getters
  + What is the return type of a getter?
  + What is the argument type of a getter (Another trick technical question)
  + Is "this" needed in a setter?  Could it be used?
* toString
  + What is the purpose of a toString() method
  + What argument(s) are used with the toString() method? (Another trick technical question)
  + What is the return type of a toString() method? String
  + What happens if there is no toString() defined for the class? Class will use meh default version.
  + How do you indicate to the IDE and compiler that the toString() method is overriding its "super" toString? @Override
  + Be able to use String.format to specify a reasonable custom format.
* compareTo
  + What are the return values of compareTo?
  + What is the data type of compareTo?
  + Be able to translate pseudocode to compareTo for statements like

if( a < b) //where a and b are objects of the same class.

* + Be able to write a compareTo that works for either integers or strings

|  |
| --- |
| public int compareTo(T other){    //comparing integer data      return data - other.data  } |
| public int compareTo(T other){           //comparing String data     return data.compareTo(other.data)  } |

* Equals
  + According to the Java "contract," what function must be implemented if equals is implemented?
  + You will not be required to implement equals or hashcodes on this exam; those are usually done by the IDE and then modified by hand, if necessary.
* In Main
  + Be able to create, compare, and print instances of a class.
  + Be able to create an array of objects of a class
  + Be able to use Collections.sort in order to sort the class using the default compareTo method.