Spring 2016, 44-542, Study guide for lab exam 2

Be able to know the following for your lab exam. (We have made this list as comprehensive as possible, but it is not guaranteed to cover every topic on the lab exams.)

* Define class
* Define attributes and constants
* Define constructors (no-arg and regular)
* Know how to write toString() method
* Know how use String.format() method and printf method
* Know how to write accessor and mutator methods.
* Know how to write a main class to test a concrete class
* Know how to use Scanner to read data from the console (using keyboard)
* Know how to use different Scanner methods to read int, String and double values
* Know when you may need to use nextLine() to dispose of a line feed
* Know how to write method stubs
* Know how to use String and Math class methods
* Know how and when you may need to use Control Structures i.e. conditions, and selection in your program.
* Understand arrays
* Know how to assign elements to an array
* Know how to use array lists (creating, filling, accessing, etc.)
* Know how to extend classes, including adding attributes and methods.
* Know how to implement interfaces.
* Know how a subclass constructor can invoke the constructor from the superclass.
* Know how a method in the subclass can invoke a method from the superclass.
* Know how to override methods from a superclass.
* Know how to use the principles of polymorphism in writing code that involves subclasses and superclasses.
* Know how to define abstract classes.
* Know how to define abstract methods.
* Know how to cast and how to determine when casting is necessary.
* Know how to use the instanceof operator.
* Know how to use the Iterable interface.
* Know how to catch exceptions.
* Know how to throw exceptions.
* Know how to advertise exceptions.
* Know how to create new Exception classes.

**Grading criteria for lab exam 1:**

* You will lose significant points if your program does not compile. This occurs when you have syntax errors. If you have a syntax error in a method, you will lose ALL points for that method.
* If you have a syntax error that you cannot fix, comment out the code (do not delete any code) for that method and replace with a stub so that your program will compile.  We will grade the commented code, and you can receive up to one-half of the points for the method, depending on the severity of the error in the commented code.
* Your program may compile and run, but the wrong output may be produced.  The number of points deducted will depend on the severity of the error that causes the incorrect output.
* Your program may compile but not run.  That is, when you run it, an exception occurs and your program terminates. The number of points deducted will depend on the severity of the error that produces the exception.

**Note:** Do not leave any method empty. In order to get an ‘A’ on the lab exam, you need to complete all the worksheets, lab activities, and in-class activities on the aforementioned topics.