CSCI165 Computer Science II
Midterm Exam Review Topics

The exam will be Wednesday 3/20/2024 at 8:30 am in Room 209. It will consist of 30 multiple choice questions. All students are expected to take the exam in person unless explicit **prior** arrangements have been made with me. The reason for not taking the exam in person needs to be legitimate and not simply a preference.

There will be no make-up exams unless there is a verifiable reason, and **prior** arrangements have been made.

The following is a list of **potential** topics for exam questions. Some questions will have a single correct option, others may have multiple correct options. You should carefully review the posted readings.

1. Features of the Java language:
   a. JVM, byte codes (.class files) and portability
   b. Object orientation
   c. Primitives vs objects
2. Strictly typed:
   a. Math operations and data types
   b. Type casting (narrowing, widening)
   c. Mixed expression
3. Method signature, return types and overloading
4. Classes, objects and encapsulation
   a. Instances (objects)
   b. Reference variables
   c. null pointers
   d. access modifiers: public, private
   e. ownership modifiers: class vs instance, static vs non-static
   f. the keyword "this"
5. arrays and ArrayLists
   a. create arrays of primitive and object types
   b. initialize arrays with lists of values
   c. nulls for object arrays
   d. passing into methods, side effects, returning, default values
   e. 2D arrays: row major, column major
   f. iteration via for loop and for each loop
6. The Scanner class
   a. Next<type> methods
   b. nextLine vs next
7. shallow equals vs deep equals (== vs equals())
8. String pool and interning (how many string objects)
9. Garbage collection
10. Variable scope