

Computer Science 245
Test 2 review.

Design goals and concepts. Vocabulary: Acquaintance vs aggregation vs composition; coupling; cohesion; white box reuse vs black box reuse.

Be prepared for a short section of questions asking you to match terms with definitions or explanations.

Subclassing and other Java features. Java features: Abstract classes, subclassing, and inheritance; extended for loops; nested classes generics; enum types.

Be prepared for the following kinds of problems

- Problems that give you a set of classes and a series of method invocations and asks you to identify which method will be called.
- Problems that ask you to write two short classes—one that solves a problem using composition, one that solves the same problem using inheritance.
- Problems that ask you to write a nested class, especially an anonymous inner class (for example, a method that returns an iterator).
- Problems that ask you to write a generic class.

Stacks and queues. Be prepared for the following kinds of questions:

- Problems that give you an algorithm/method that uses a stack or queue and ask you to analyze them for their asymptotic running time; there may be a series of related questions in which you are to find how the running time depends on the which implementation is used or on how the stack or queue is used.
- Problems that ask you to write a piece of code that uses a stack or queue to solve a problem.
- Problems that ask you to implement a variation on a stack or a queue.

C: Pointers, dynamic memory, and bit operations. Be prepared for the following kinds of questions:

- Problems that ask you to write a short piece of code that uses pointers and dynamic memory (including allocating and freeing)
- Problems that ask you to use bit operations.