The final will be held on Dec 16th at 6pm (in our normally scheduled room).

**Topics in the Java language:**
- Know what variables, methods, and classes are
- Know the “this”, “static” keywords
- Know how to override (toString, compareTo)
- Define keywords, public, private, protected
- Know the “extends” and “implements” keyword
- Know how to create abstract classes and methods
- Know how to create interfaces
- Know how to declare generic types
- Know how to use a generic type
- Difference between checked and unchecked exceptions
- How to throw your own exceptions

**Topics in Data Structures:**
- Stacks and implementations of pop, push
- Definition of LIFO and FIFO
- Recursion, definition, and be able to follow iterations
- Basic recursion examples, factorial, fibonacci, towers of hanoi
- Queues and implementations of add, remove
- Fixed front vs Floating front design
- Binary search, big O and implementation
- Doubly linked list implementation
- Tree definitions and traversals at a high level, in-order, post order, pre order
- Insertion sort, big O, implementation
- Selection sort, big O, implementation
- Bubble sort, big O, implementation
- Merge sort, big O, implementation
- Quick sort, big O, implementation
- Definition of stability
- Hashing, linear probing, 2D buckets, chaining