CS171 Midterm Topic Review

Java Basics and OO
- Object type variables vs. primitive type variables
- Method calls, call stack
- Inheritance
- Interface

Arrays
- Typical array processing and traversal
- Binary search for ordered arrays – algorithm, implementations (loop-based version and recursive version), and cost analysis

Algorithm analysis
- Common functions - constant, logarithm, linear, quadratic, polynomial, exponential, factorial (in increasing order of growth)
- Cost analysis (loop analysis)

Linked lists
- Linked lists vs. array
- Insert, search, delete – implementations and cost
- Variations - double-ended list, doubly-linked list, circular list

Stacks and queues
- Basic operations: push and pop for stacks; enqueue and dequeue for queues
- Implementations using resizing arrays and linked list
- Generics
- Iterators
- Deques