CS171 Midterm 2 Review

Sorting
- Quicksort – algorithms, implementations, and cost analysis for best and worst case (average case not required)

Binary search trees
- Definitions and terminologies
- Insert, search, finding minimum/maximum, rank, select – algorithm, implementation, and cost
- Pre-order, in-order, post-order traversal – algorithm, implementation, cost
- Delete – understand algorithm and be able to predict the result after delete, no implementation is required

Priority queue and heaps
- Tree vs. array implementation
- Insert, removeMin/removeMax: algorithm, implementation, cost.

Hash table
- Definitions
- Common hashing functions (modulo)
- Collision resolution: separate chaining, linear probing

Graphs
- Definitions and terminologies
- Adjacency matrix and adjacency list representations
- BFS and DFS traversal and path finding – algorithms, implementation