

Exam#1 Study Guide

Chapter 2:

- (1) Describe and analyze algorithms.
- (2) Examine two algorithms for sorting: insertion sort and merge.
- (3) Describe algorithms in Pseudocode.
- (4) Use asymptotic notation to express running time analysis.
- (5) Examine two algorithms for searching: Linear search, Binary search. (from the exercises)

Chapter 3:

- (1) Asymptotic analysis.
- (2) Describe growth of functions.
- (3) Focus on what's important by abstracting away low- order terms and constant factors.
- (4) How we indicate running times of algorithms.
- (5) A way to compare size of functions:
 - Big O notation
 - Big Ω notation
 - Big Θ notation

Chapter 4:

- (1) Divide and conquer paradigm.
- (2) Recurrences.
- (3) Analyzing divide and conquer algorithms
- (4) Solve recurrences using one of the two methods: recursion tree, and master theorem.

Chapter 6:

- (1) Heap Sort.
- (2) Max heap property
- (3) Examine three algorithms: Max Heapify, build max heap, heap sort.

Chapter 7:

- (1) Quick Sort.
- (2) Operation of the quick sort
- (3) Analysis of the quick sort.