Objectives:

1. To introduce the Heap Sort algorithm.

Reading Assignment:

Neapolitan and Naimipour: Chapters 7.6-7.8.

Contents:

1. Describe Heap Sort algorithm. (3/4 hour)
2. Outline Pseudocode for Heap Sort. (3/4 hour)
3. Illustrate Examples of Heap Sort. (3/4 hour)
4. Compare/Contrast Merge, Quick, and Heap Sorts (3/4 hour)
1. Describe Heap Sort algorithm. (\(\frac{3}{4}\) hour)
   - in-place algorithm (n lg n)
   - heap as an essentially complete binary tree
   - sifting down

2. Outline Pseudocode for Heap Sort. (\(\frac{3}{4}\) hour)
   - siftdown(heap& H, index i)
   - root(heap& H)
   - removekeys(int n, heap& H, keytype S[ ])
   - makeheap(int n, heap& H)

3. Illustrate Examples of Heap Sort. (\(\frac{3}{4}\) hour)

4. Compare/Contrast Merge, Quick, and Heap Sorts (\(\frac{3}{4}\) hour)
   - Comparison of keys
   - Assignment of records
   - Extra space usage
Handouts, etc. for Lecture: None.