
Assignment 8

- A. Which, if any, of the following algorithms, bubble-sort, heap-sort, insertion sort, merge-sort, and quick-sort, are stable? Briefly justify your answer.
- B. Is the bucket-sort algorithm in-place? Why or why not?
- C. Illustrate the performance of the radix-sort algorithm on the following input sequence (22, 15, 26, 44, 10, 3, 9, 13, 29, 25).
- D. Implement a Priority Queue ADT using the Heap ADT provided in the attached Heap.js. Note that the Heap stores keys (only elements), but the PQ stores items, i.e., (key, element) items.
- E. Implement a PQ-Sort based on the Priority Queue from D.

C-4.13 Suppose we are given two sequences A and B of n elements, possibly containing duplicates, on which a total order relation is defined (i.e., has a comparator). Using a Priority Queue design an efficient pseudo-code algorithm for determining if A and B contain the same set of elements (possibly in different orders and possibly containing duplicates). What is the running time of this method?