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CMPS 102  
Homework 2

**Problem 1:** Design 3 algorithms based on binary min heaps that find the  $k$ th smallest # out of a set of  $n$  #'s in time:

- a)  $O(n \log k)$
- b)  $O(n + k \log n)$
- c)  $O(n + k \log k)$

**Note:** For all problems, an array will be used to represent the heap.

a)