

# Heaps

Note Title

11/1/2007

A heap is a completely filled binary tree  
(ok, maybe not full leaves)  
and either one of

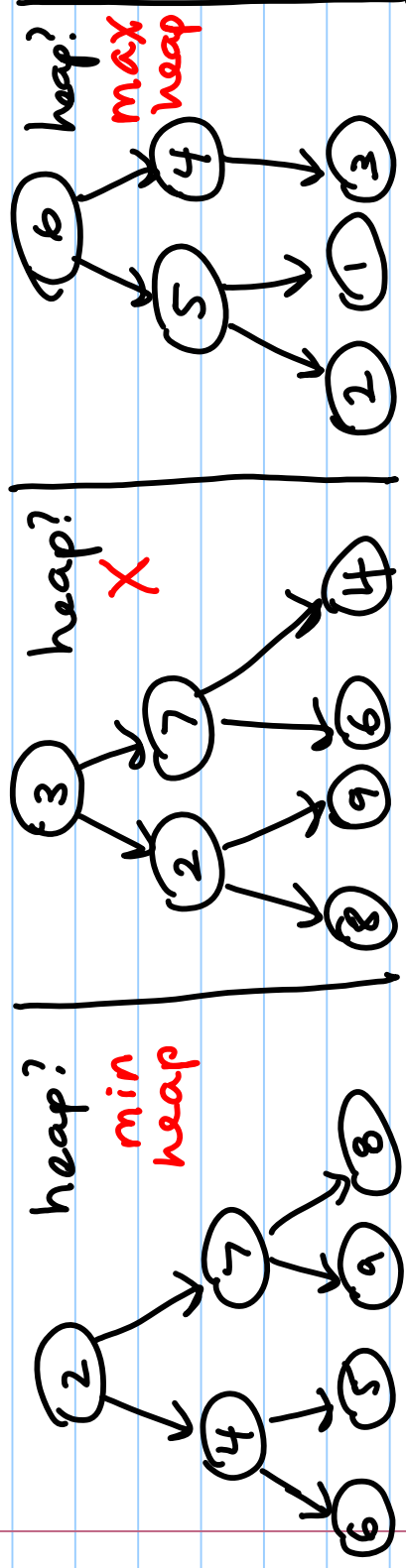
— Max-Heap

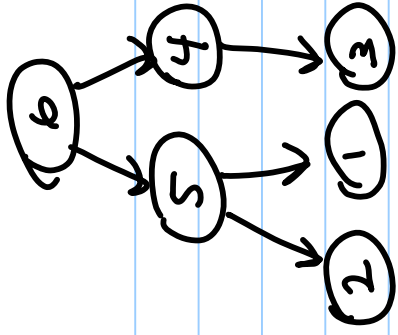
For all nodes, value of parent  $\geq$  value of self

OR

— Min-Heap

For all nodes, value of parent  $\leq$  value of self





How long to find  $\textcircled{1}$  in the heap?

worst-case search:  $n$

worst-case height:  $\log n$

What is easy to find in a max-heap?

max is  $O(1)$

