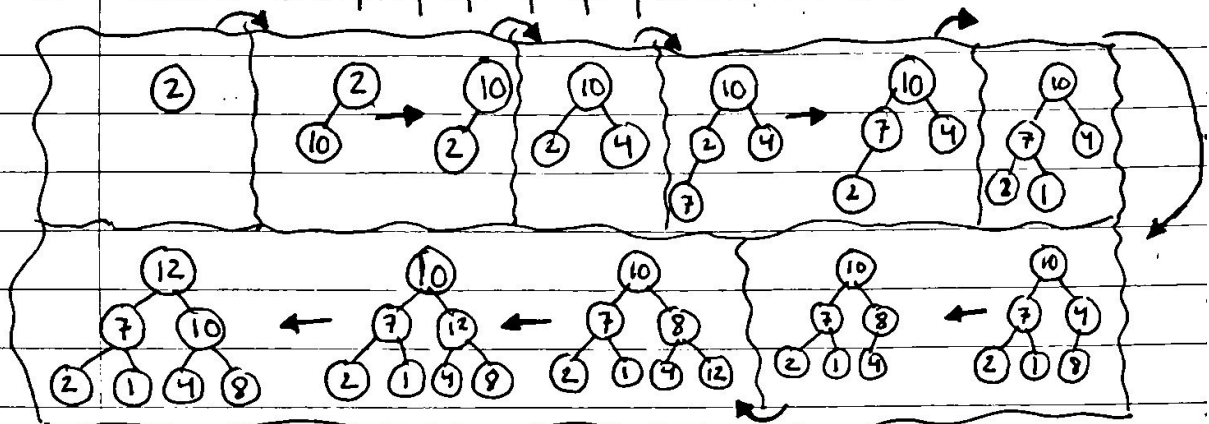


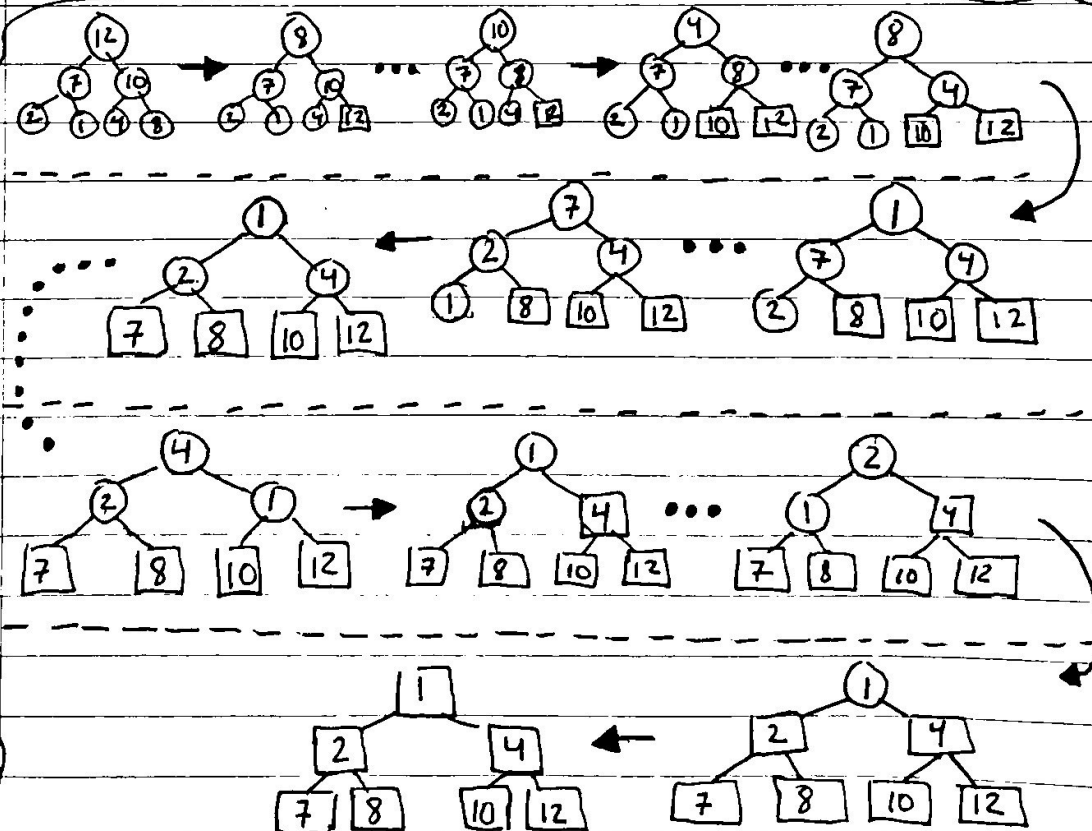
Priority Queue & Heaps

Heapify max-heap

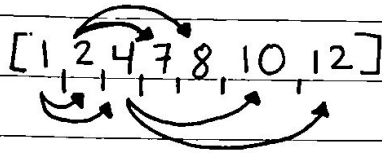
insert([2, 10, 4, 7, 1, 8, 12])



Heap Sort



implicit array representation of the heap sorted list:



- Swim & Sink

- Since we may need to sink/swim `del max()` has a time complexity of $O(\log N)$

- Swim is $O(\log N)$, sink $O(2 \log N)$

D-Heap

- Depth of a d heap is $\log_d N$ for example a heap that can have 4 children would be $\log_4 N$ deep.

- Delete becomes more expensive $O(d \log_d N)$