

HeapHeap Problem identification

instead of asking largest/smallest there will be some number 'K' given, so we have to find 'K' largest/smallest/closest etc.

FUNDA So, Heap use hoga definitely if we have to find 'K' values optimally.

Simple Problem 1

Leetcode
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Find K^{th} largest element
or

Find K^{th} smallest element.

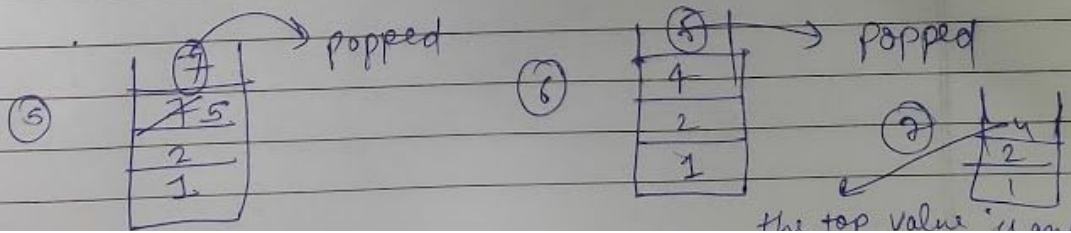
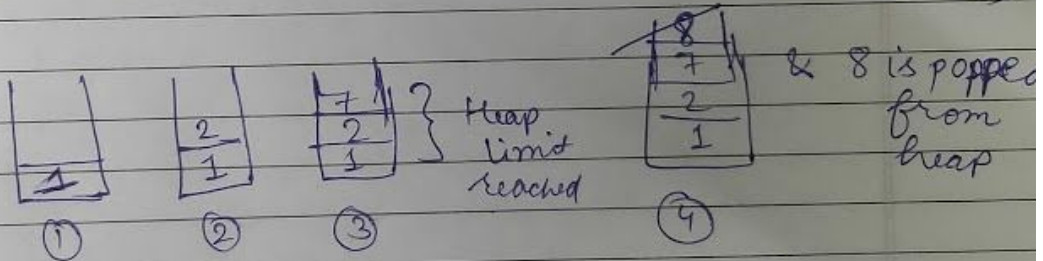
Solⁿ using Heap [say K^{th} smallest]

Ex. 1 2 7 8 5 4

$K=3$

3rd smallest is 4

So, we put each element on heap. (Max Heap in this case)



Pseudo Code

① Create Max/Min Heap

Smallest \rightarrow Max Heap

Largest \rightarrow Min Heap

② Put each element from array on heap.

③ Then check if heap limit 'k' is reached
pop the element on top.

④ After this, at last whatever is on top of heap is our answer as seen in example.