

Reverse the String

→ Python STL \Rightarrow `reverse(str.begin(), str.end());`

Find k^{th} Element largest/Smallest in Array

Problem \Rightarrow $N = 6$

$arr[] = 7 \ 10 \ 4 \ 3 \ 20 \ 15$

$K = 3$

output $\Rightarrow 7$ \textcircled{A} 3rd Smallest in the Array

Method 1:

① Sort the Array

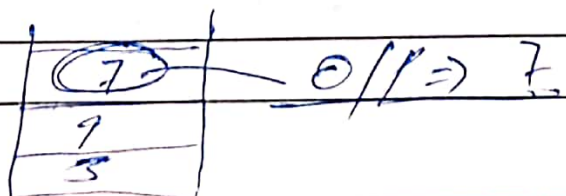
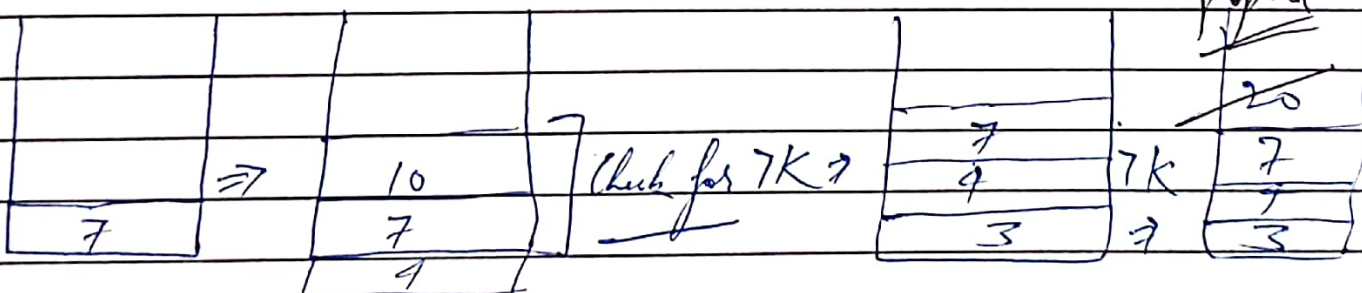
② Return $(k-1)$ term

③ Time Complexity $O(n \log n)$

We can reduce this TC in $O(n \log k)$.

for that we will use either Max/Min Heap.

\textcircled{A} Smallest \Rightarrow Min Heap. \textcircled{B} Largest \Rightarrow Max Heap.



Good Write

Method 1 \rightarrow `int kthSmallest(int arr[], int l, int r, int k)`
`{`
`int n = r + 1, // r = n - 1 so we make it n`
`Sort(arr, arr + n);`
`return arr[k - 1];`
`}`

Method 2 \rightarrow `int kthSmallest(int arr[], int l, int r, int k)`
`{`
`priority_queue<int> p;`
`for(int i = 0; i <= r; i++)`
`{`
`p.push(arr[i]);`
`if(p.size() > k) // check size of heap`
`p.pop(); // if size is > k then pop out`
`}`
`return p.top();`
`}`