SortKSortedArray in C++

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#include <iostream>
#include <vector>
#include <queue>
using namespace std;

class KthLargest {
public:
    static int kthLargest(int n, vector<int>& input, int
k) {
        // Use a priority queue (max heap) to find the kth
largest element
        priority_queue<int> pq;

        // Insert all elements into the max heap
        for (int i = 0; i < n; i++) {
            pq.push(input[i]);
        }

        // Remove the top k-1 elements to get the kth
largest element
        for (int j = 0; j < k - 1; j++) {
            pq.pop();
        }

        // Return the kth largest element
        return pq.top();
    }
};

int main() {
    // Example input
    vector<int> arr = {2, 4, 1, 9, 6, 8};
    int k = 3;

    // Call the static method kthLargest from
KthLargest class
    int result = KthLargest::kthLargest(arr.size(), arr,
k);

    // Print the result
    cout << "Kth largest element: " << result << endl;

    return 0;
}
```

Input:

arr = {2, 4, 1, 9, 6, 8}
k = 3

Dry Run Table:

Step	Action	Heap (Max-Heap structure)	Top Element
Init	Empty		
Insert 2	pq.push(2)	[2]	2
Insert 4	pq.push(4)	[4, 2]	4
Insert 1	pq.push(1)	[4, 2, 1]	4
Insert 9	pq.push(9)	[9, 4, 1, 2]	9
Insert 6	pq.push(6)	[9, 6, 1, 2, 4]	9
Insert 8	pq.push(8)	[9, 6, 8, 2, 4, 1]	9
Pop #1	pq.pop()	[8, 6, 1, 2, 4]	8
Pop #2	pq.pop()	[6, 4, 1, 2]	6

➞ Final result = 6 (3rd largest)

Output:

Kth largest element: 6

6