Kth Largest Element in a Stream

Try to solve the Kth Largest Element in a Stream problem.

We'll cover the following ^ Statement Examples Understand the problem Figure it out! Try it yourself

Statement

Given an infinite stream of integers (sorted or unsorted), $\frac{1}{2}$ nums, design a class to find the k^{th} largest element in a stream.

Note: It is the k^{th} largest element in the sorted order, not the k^{th} distinct element.

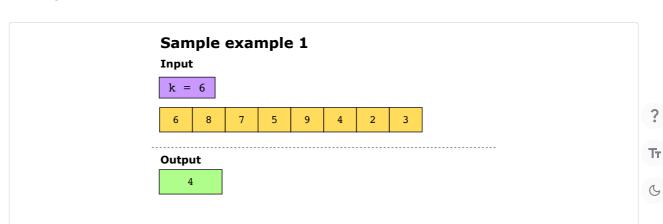
The class should have the following functions, inputs, and return values:

- Init(): It takes an array of integers and an integer k and initializes the class object.
- Add(value): It takes one integer value, appends it to the stream, and calls the Return kth largest() function.
- **Return kth largest()**: It returns an integer value that represents the k^{th} largest element in the stream.

Constraints

- $1 \le k \le 10^3$
- $0 \leq \mathsf{nums.length} \leq 10^3$
- $-10^3 \leq \text{nums[i]} \leq 10^3$
- $-10^3 < \text{value} < 10^3$
- At most 10^3 calls will be made to add.
- It is guaranteed that there will be at least k elements in the array when you search for the k^{th} element.

Examples





Understand the problem

Let's take a moment to make sure you've correctly understood the problem. The quiz below helps you check if you're solving the correct problem:

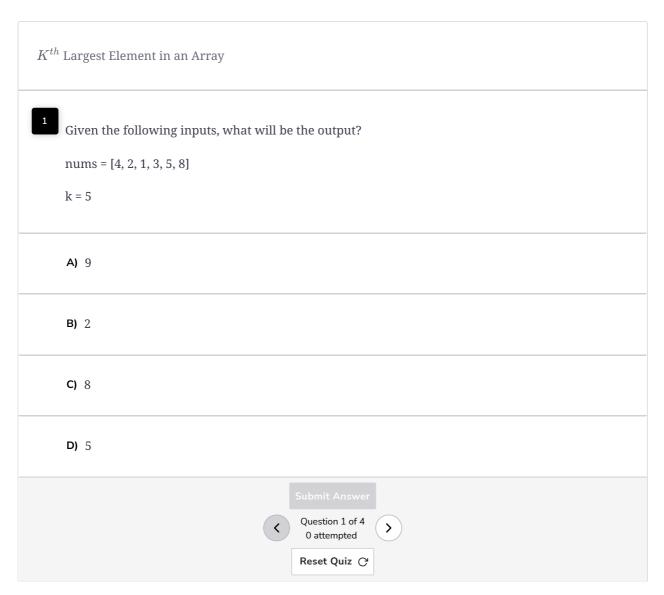
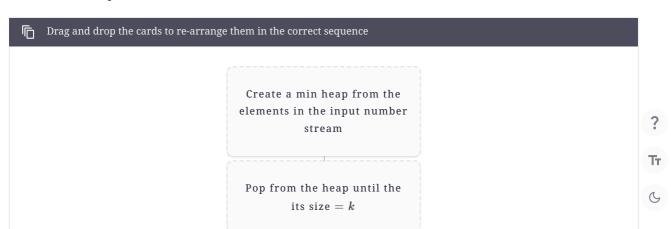
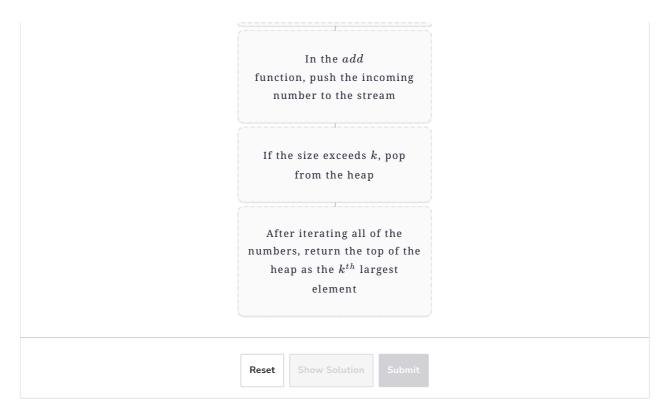


Figure it out!

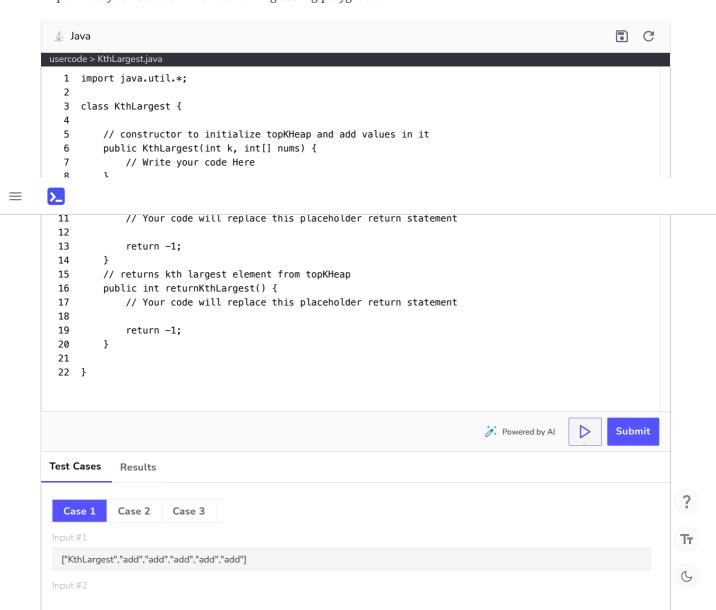
We have a game for you to play. Rearrange the logical building blocks to develop a clearer understanding of how to solve this problem.





Try it yourself

Implement your solution in the following coding playground.



[[3],[4,5,8,2],[3],[5],[10],[9],[4]]

Kth Largest Element in a Stream



Top K Elements: Introd...



Solution: Kth Largest ...



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