Find K Closest Elements

Try to solve the Find K Closest Elements problem.

We'll cover the following

Statement

You are given a sorted array of integers, `nums`, and two integers, `target` and `k`. Your task is to return `k` number of integers that are close to the target value, `target`. The integers in the output array should be in a sorted order.

An integer, `nums[i]`, is considered to be closer to `target`, as compared to `nums[j]` when $|$`nums[i]` - `target`$| <$ $|$`nums[j]` - `target`$|$. However, when $|$`nums[i]` - `target`$| =$ $|$`nums[j]` - `target`$|$, the smaller of the two values is selected.

Constraints:

- $1 \leq$ `k` $\leq$ `nums.length`
- $1 \leq$ `nums.length` $\leq 10^4$
- `nums` is sorted in ascending order.
- $-10^4 \leq$ `nums[i]`, `target` $\leq 10^4$

Examples

Sample example 1

Input

1	2	3	4	5

`k = 4, target = 3`

Output

1	2	3	4

Since k = 4, we need four integers that are close to the given target, i.e., 3.

1 of 3

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:

Find K Closest Elements

1

What are the `k` closest integers to `target` if the following data is given as input?

`nums` = [1, 3, 5, 7, 9, 11]

`k` = 4

`target` = -7

A) [1, 3, 5]

B) [1, 3, 5, 7]

C) [1, 3, 5, 9]

D) [0, 1, 3, 5, 7, 9, 11]

Submit Answer

Question 1 of 3
0 attempted

Reset Quiz

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.

Drag and drop the cards to rearrange them in the correct sequence.

Compute the distance between each element in the `nums` array and `target`.

Store the distances and their corresponding elements as pairs in a new array, `distances`.

Sort `distances` in ascending order based on the absolute differences, and if any two pairs have the same absolute difference, sort them based on the element value in ascending order.

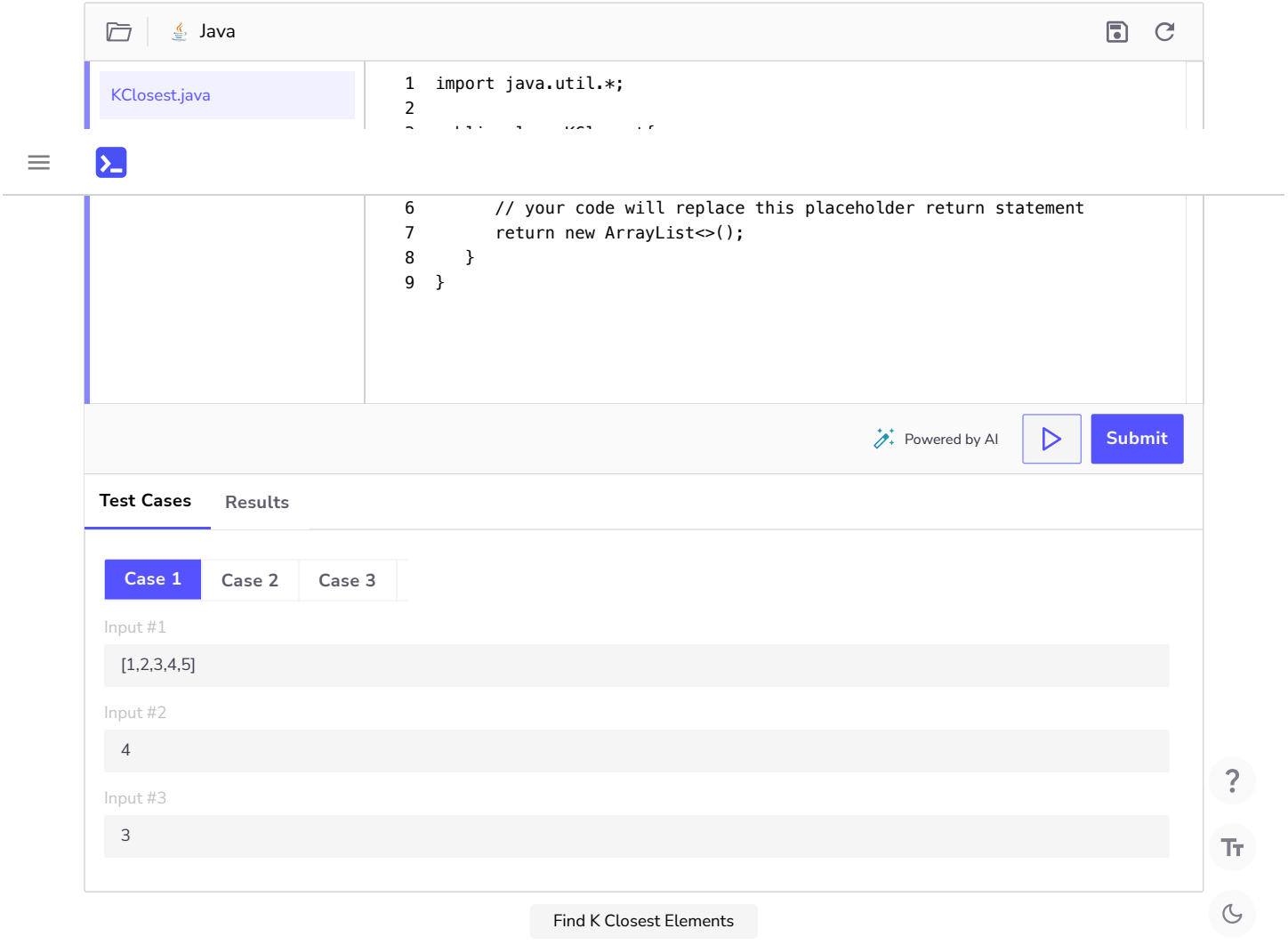
Extract the first `k` elements from `distances` and store them in a new array, `result`.

Sort `result` in ascending order and return.

Reset | Show Solution | Submit

Try it yourself

Implement your solution in `KClosest.java` in the following coding playground. We've provided a useful code template in the other file that you may build on to solve this problem.



Find K Closest Elements