

## Kth smallest element

Given an array **arr[]** and an integer **K** where K is smaller than size of array, the task is to find the **K<sup>th</sup> smallest** element in the given array. It is given that all array elements are distinct.

**Note :-** **l** and **r** denotes the **starting** and **ending** index of the array.

### **Example 1:**

**Input:**

N = 6

arr[] = 7 10 4 3 20 15

K = 3

**Output :** 7

**Explanation :**

3rd smallest element in the given array is 7.

### **Example 2:**

**Input:**

N = 5

arr[] = 7 10 4 20 15

K = 4

**Output :** 15

**Explanation :**

4th smallest element in the given array is 15.

### **Your Task:**

You don't have to read input or print anything. Your task is to complete the function **kthSmallest()** which takes the array **arr[]**, integers **l** and **r** denoting

the **starting** and **ending** index of the array and an integer **K** as input and returns the **K<sup>th</sup>** smallest element.

**Expected Time Complexity:**  $O(n)$

**Expected Auxiliary Space:**  $O(\log(n))$

**Constraints:**

$$1 \leq N \leq 10^5$$

$$1 \leq \text{arr}[i] \leq 10^5$$

$$1 \leq K \leq N$$