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ALL

2. Subarray Mexes

1

2

3

Given an array *arr* of *n* integers that contains all the integers from 1 to *n* and an integer *k,* find the kth smallest MEX of a subarray of the array. That is, in a list containing MEX of all the subarrays, find the kth smallest integer.

The MEX of an array is the smallest positive integer not present in the array. For example, the MEX of [1, 2, 3] is 4 and that of [1, 3, 4, 5] is 2.
A subarray is any contiguous segment of the array.

Example
Suppose *n* = 4, *arr* = [3, 2, 1, 4], and *k* = 5,

The MEX of each subarray is:

- Subarrays [3], [2], [1], and [4] have MEX 1, 1, 2, and 1 respectively.
- Subarrays [3, 2], [2, 1] and [1, 4] have MEX 1, 3, and 2 respectively.
- Subarrays [3, 2, 1] and [2, 1, 4] have MEX 4 and 3 respectively.
- Subarray [3, 2, 1, 4] has MEX 5.

All MEX values in ascending order are [1, 1, 1, 1, 2, 2, 3, 3, 4, 5]. The 5th smallest value is 2. Hence, the answer is 2.

Function Description
Complete the function *getKthMex* in the editor below.

getKthMex has the following parameters:
    int arr[n]: an array of integers
    long int k: the 1-based index to return from the sorted array of MEX values

Returns
    int: the kth smallest MEX of the subarrays of the array

Constraints

- $1 \le n \le 10^5$
- $1 \le arr[i] \le n$
- $1 \le k \le (n * (n + 1)) / 2$

▶ **Input Format For Custom Testing**