

6 Mex Sum

For a given permutation a of length n indexed from 1 to n , find $\sum_{1 \leq l \leq r \leq n} \text{mex}(a[l, r])$.

A permutation of length n is an array of length n that each elements of this array is not less than 1 and not greater than n , and each number appears exactly once. $a[l, r]$ denotes the subarray of a from l to r .

mex is a function that for an input array a , $\text{mex}(a)$ returns the minimum positive number that does not appear in array a .

6.1 Input

The input contains two lines.

The first line contains exactly one number n , ($1 \leq n \leq 10^5$), denotes the length of the input permutation a .

The second line contains n numbers, the i -th number a_i , ($1 \leq a_i \leq n$), denotes the i -th element of this permutation.

It is guaranteed that the input array must be a permutation.

6.2 Output

Output one integer, denoting the answer.

6.3 Sample Input/Output

Sample Input 1	Sample Output 1
3 1 2 3	12
Sample Input 2	Sample Output 2
6 1 2 3 4 5 6	42
Sample Input 3	Sample Output 3
6 5 4 3 6 2 1	39