

Problem F. Dominating Subarray

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 512 mebibytes

An array x_1, \dots, x_ℓ is a *subarray* of an array y_1, \dots, y_m if there exists an integer i from 1 to $m - \ell + 1$ such that the following equalities hold: $y_i = x_1, y_{i+1} = x_2, \dots, y_{i+\ell-1} = x_\ell$.

A subarray b_1, \dots, b_k of a is *k-dominating* if for any subarray c_1, \dots, c_k of a , the following inequalities hold: $b_1 \geq c_1, b_2 \geq c_2, \dots, b_k \geq c_k$.

You are given an array a_1, \dots, a_n . Find any occurrence of a *k-dominating* subarray of a if it exists.

Input

The first line contains two integers n and k ($1 \leq k \leq n \leq 100\,000$), the length of the array a and the parameter. The second line contains n integers a_1, \dots, a_n ($1 \leq a_i \leq 10^6$), the elements of the array.

Output

Print “-1” if there is no *k-dominating* subarray in a . Otherwise, print an integer i from 1 to $n - k + 1$ such that a_i, \dots, a_{i+k-1} is a *k-dominating* subarray of a .

Examples

standard input	standard output
5 3 1 2 3 3 3	3
3 2 1 2 1	-1