

1523. K-inversions

Time limit: 1.0 second

Memory limit: 64 MB

Consider a permutation a_1, a_2, \dots, a_n (all a_i are different integers in range from 1 to n). Let us call k -inversion a sequence of numbers i_1, i_2, \dots, i_k such that $1 \leq i_1 < i_2 < \dots < i_k \leq n$ and $a_{i_1} > a_{i_2} > \dots > a_{i_k}$. Your task is to evaluate the number of different k -inversions in a given permutation.

Input

The first line of the input contains two integers n and k ($1 \leq n \leq 20000$, $2 \leq k \leq 10$). The second line is filled with n numbers a_i .

Output

Output a single number — the number of k -inversions in a given permutation. The number must be taken modulo 10^9 .

Samples

input	output
3 2 3 1 2	2
5 3 5 4 3 2 1	10

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Problem Source: Dmitry Gozman Contest 1, Petrozavodsk training camp, January 2007