

Distinct Increasing Subsequences

Given a sequence of N ($1 \leq N \leq 10,000$) integers S_1, \dots, S_N ($0 \leq S_i < 1,000,000,000$), compute the number of distinct increasing subsequences of S with length K ($1 \leq K \leq 50$ and $K \leq N$).

Input

The first line contains the two integers N and K . The following N lines contain the integers of the sequence in order.

Output

Print a single integer representing the number of distinct increasing subsequences of S of length K , modulo 5,000,000.

Example

Input:

4 3

1

2

2

10

Output:

1

The only increasing subsequence of length 3 is 1, 2, 10.