INCDSEQ - Distinct Increasing Subsequences

Given a sequence of N ($1 \leq N \leq 10{,}000$) integers S_1, ..., 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 $K \leq N$).
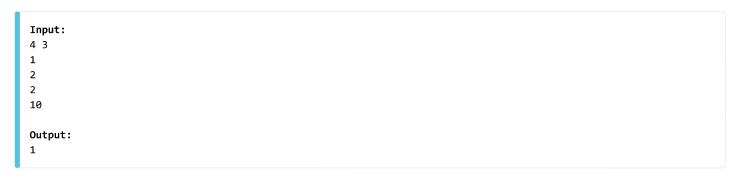
Input

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

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Input:
4 3
1
2
2
10

Output:
1
```

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