

# Increasing Subsequences

Given a sequence of  $N$  ( $1 \leq N \leq 10,000$ ) integers  $S_1, \dots, S_N$  ( $0 \leq S_i < 100,000$ ), compute the number of increasing subsequences of  $S$  with length  $K$  ( $1 \leq K \leq 50$  and  $K \leq N$ ); that is, the number of  $K$ -tuples  $i_1, \dots, i_K$  such that  $1 \leq i_1 < \dots < i_K \leq N$  and  $S_{i_1} < \dots < S_{i_K}$ .

## 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 increasing subsequences of  $S$  of length  $K$ , modulo 5,000,000.

## Example

**Input:**

```
4 3
1
2
2
10
```

**Output:**

```
2
```

The two 3-tuples are  $(1, 2, 4)$  and  $(1, 3, 4)$ , both corresponding to the subsequence 1, 2, 10.