Gardens

Time Limit: 2.0s **Memory Limit:** 256M

Ahmet has planted $\mathbf{N}$ trees in a line. The type of k-th tree is $\mathbf{T_k}$. Ozan wants to create $\mathbf{M}$ gardens by building $\mathbf{M}-1$ walls between the trees so that the tree line is splitted into $\mathbf{M}$ line segments each being a separate garden. Note that some gardens may contain no tree.

"Beauty" of a garden is equal to the number of distinct tree types in it. What is the maximal possible total "beauty" of the gardens?

Input

The first line contains two integers $\mathbf{N}$ and $\mathbf{M}$ separated by a single space. The next line contains $\mathbf{N}$ integers $\mathbf{T_1}, \ldots, \mathbf{T_N}$ separated by single spaces.

Output

The maximal possible total garden "beauty".

Constraints

- $1 <= \mathbf{N} <= 5000$,
- $1 <= \mathbf{M} <= 100$,
- $1 <= \mathbf{T_k} <= 10^9$.

Example

Input

```
7 4
4 7 4 1 2 4 2
```

Output

```
7
```

Notes

In the sample one of the optimal solutions is to form the following gardens:

- the first and the second trees;
- the third tree;
- the fourth and the fifth trees;
- the sixth and the seventh trees. Then the overall "beauty" is $2 + 1 + 2 + 2 = 7$.