Problem AA
Longest Common Subsequence

Time Limit: 1

You are given n strings, each a permutation of the first k upper-case letters of the alphabet.

String s is a *subsequence* of string t if and only if it is possible to delete some (possibly zero) characters from the string t to get the string s.

Compute the length of the longest common *subsequence* of all n strings.

Input

The first line of input contains two integers n ($1 \leq n \leq 10^5$) and k ($1 \leq k \leq 26$), where n is the number of strings, and the strings are all permutations of the first k upper-case letters of the alphabet.

Each of the next n lines contains a single string t. It is guaranteed that every t contains each of the first k upper-case letters of the alphabet exactly once.

Output

Output a single integer, the length of the longest subsequence that appears in all n strings.

Sample Input 1	Sample Output 1
2 3 BAC ABC	2

Sample Input 2	Sample Output 2
3 8 HGBDFCAE ADBGHFCE HCFGBDAE	3

Sample Input 3	Sample Output 3
6 8 AHFBGDCE FABGCEHD AHDGFBCE DABHGCFE ABCHFEDG DGABHFCE	4