Language Learning

Time limit: *4000 ms*
Memory limit: *256 MB*

Abhishek is a student who loves to learn new languages. He does this by making different sentences from a word list given by his friend Zhang Yu. More specifically, he makes a sentence by picking a subsequence of words (not necessarily consecutive) from the word list without changing their order.

Today Zhang gives Abhishek a list of N words for him to learn a special language. The words in the list contain only lowercase letters `a` to `z`. Abhishek will learn this special language in a special way based on an integer K: He cannot choose any pair of words (w_1, w_2) in a sentence if their indices differ by at most K. In other words, if w_1 is at index of i and w_2 is at index j in the word list, then they must satisfy $|i - j| > K$ to be chosen together.

To understand how efficiently he is learning this special language, Abhishek asks you to print the number of unique sentences he can make from the word list, modulo $1\,000\,000\,007$ ($10^9 + 7$).

Standard input

The first line contains a single integer T, the number of test cases.

Each test case has two integers N and K separated by space on the first line. The next N lines each have a string that consists of lowercase English letters, describing one word in the list.

Standard Output

For each test case, output the number of unique sentences modulo $1\,000\,000\,007$ ($10^9 + 7$) on a single line.

Constraints and notes

- $1 \leq T \leq 1000$
- $1 \leq N \leq 10^5$
- $0 \leq K < N$
- The length of any word is between 1 to 10.
- The sum of N over all test cases in one test file does not exceed $2 \cdot 10^6$.

Input	Output	Explanation
1 7 1 a abc abc a dac a a	16	There is a single test case. The following 16 sentences are valid: a a a a abc a dac a a a a abc dac a abc a a dac a a abc dac a abc abc a abc dac abc a a abc dac a dac dac a Each of these sentences can be formed by picking a subsequence of words without violating the constraint regarding K. For example, this sentence `a abc dac a` can be formed by picking words at indices $\{0, 2, 4, 6\}$ respectively. All pairs of indices differ by more than $K = 1$.