C. String Reconstruction

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Ivan had string s consisting of small English letters. However, his friend Julia decided to make fun of him and hid the string s. Ivan preferred making a new string to finding the old one.

Ivan knows some information about the string s. Namely, he remembers, that string t_i occurs in string s at least k_i times or more, he also remembers exactly k_i positions where the string t_i occurs in string s: these positions are $x_{i,1}, x_{i,2}, ..., x_{i,k_i}$. He remembers n such strings t_i.

You are to reconstruct **lexicographically minimal** string s such that it fits all the information Ivan remembers. Strings t_i and string s consist of small English letters only.

Input

The first line contains single integer n ($1 \le n \le 10^5$) — the number of strings Ivan remembers.

The next n lines contain information about the strings. The i-th of these lines contains non-empty string t_i, then positive integer k_i, which equal to the number of times the string t_i occurs in string s, and then k_i distinct positive integers $x_{i,1}, x_{i,2}, ..., x_{i,k_i}$ in increasing order — positions, in which occurrences of the string t_i in the string s start. It is guaranteed that the sum of lengths of strings t_i doesn't exceed 10^6, $1 \le x_{i,j} \le 10^6$, $1 \le k_i \le 10^6$, and the sum of all k_i doesn't exceed 10^6. The strings t_i can coincide.

It is guaranteed that the input data is not self-contradictory, and thus at least one answer **always** exists.

Output

Print lexicographically minimal string that fits all the information Ivan remembers.

Examples

input
3 a 4 1 3 5 7 ab 2 1 5 ca 1 4

output
abacaba

input
1 a 1 3

output
aaa

input
3 ab 1 1 aba 1 3 ab 2 3 5

output
ababab