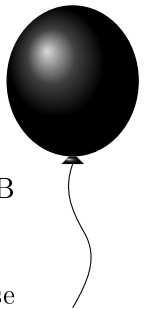# C Sandbad in Isfahan

TIME LIMIT: 4.0s
MEMORY LIMIT: 1024MB

There are n people from Isfahan, each with their own significance, and this story is about these important people, denoted by integers from 1 to n. Each of them has their own stone tablet with a word written on it, consisting only of lowercase English letters.

Our people of Isfahan are playing an interesting game with their good friend Sandbad.

The game is played in q rounds. There are two types of rounds, each determined by Sandbad:

1st type: Sandbad shows the word p to the people of Isfahan.

2nd type: Sandbad asks the person from Isfahan denoted by s the following question: "Out of all the words I've shown you so far, how many of them are such that the word on your stone tablet is their consecutive substring¿'

Given the fact that the people of Isfahan often get distracted and are not really able to pay attention and keep up with what's happening in the game, they will be needing your help. Help the people of Isfahan answer each of Sandbad's questions correctly.

INPUT

The first line of input contains the integer n ($1 \le n \le 10^5$) — the number of important people in Isfahan.

Each of the following n lines contains a single word consisting of only lowercase letters of the English alphabet. The i-th word corresponds to the word on the stone tablet of the person from Isfahan denoted by i.

After that, the integer q ($1 \le q \le 10^5$) follows — the number of rounds in the game.

The following q lines describe the rounds of the game, with each line describing the i-th round.

Each line will contain the integer o. If o is equal to 1, it denotes the first type of round, and the word p follows in the same line, consisting of only lowercase letters of the English alphabet.

If o is equal to 2, it denotes the second type of round and the number s ($1 \le s \le n$) follows in the same line, representing the label of the person from Isfahan whom Sandbad asked the question.

The total length of all the words written on the stone tablets of the people of Isfahan will not exceed 2×10^6.

The total length of all the words that Sandbad shows the people will not exceed 2×10^6.

OUTPUT

For each round of the second type, output a single line. The i-th line must contain the correct answer to Sandbad's question in the i-th round of type 2.

Samples

Sample input 1	Sample output 1
3 a bcc abc 3 1 abca 2 1 2 3	1 1

Sample input 2	Sample output 2
7 abba bbaa b bbaa abba a ba 7 1 aaabbabbaab 2 6 1 baabaaa 1 aabbbab 2 3 1 aabba 2 3	1 3 4