Students Database

You have to take name, roll no. and age of N students.

Then take a surname as input and output the roll no. of all the students that have common surname.

(Try Solving this with the help of Struct. It is for Learning.)

Input

First line contains the number of Testcases T. (1<=T<=50)

First line of every testcase contains an integer N. Number of students. (1<=N<=100).

For all the N students there are 3 lines each for -

Name - String which has length less than 100. It will contain only [A-Z,a-z,space].

Roll No. - Integer with value between [1,1000000]

Age - Integer with value between [1,150]

Last line of each testcase will have a string surname which has length less than 100. It will contain only [A-Z,a-z].

Output

For every testcase print all the student's roll no. who share a common surname in order of their input.

Print these in separate lines.

Example

Input:
1
3
Rajesh kumar
79
21
Sandesh kumar
86
21
Akashdeep Saluja
5
21
kumar

Output:
79
86