First Name - Nickname

Write a program that reads a list of nicknames and first names (assume that no first names are duplicated, and no nicknames are duplicated as well). Then, input a string: if it's a first name, display the nickname; if it's a nickname, display the first name; if it's neither a real name nor a nickname, display 'Not found'.

Input

The first line is an integer N.

The following N lines contain fist names and nicknames separated by a space.

The N+2 line is an integer M.

The following M lines contain either first names or nicknames. For each line, ask for the corresponding nickname or first name.

Output

The M lines display the nickname or real name corresponding to the real name or nickname entered, one name per line. If the input is not found in the provided data, display 'Not found'.

Example

Input (from keyboard)	Output (on screen)
10 Robert Dick William Bill James Jim John Jack Margaret Peggy Edward Ed Sarah Sally Andrew Andy Anthony Tony Deborah Debbie 4 John Jim Don Debbie	Jack James Not found Deborah