Problem D - SherLock

When Detective Sherlock is not busy solving crime mysteries, he is a part-time UCLA CS student. Unfortunately, he is not very good at programming and is miserably failing his courses.

On the day of Sherlock's final exam for CS 136, the professor locked the classroom door shut! On the door was a note saying, "Whichever student unlocks this door with the right password will pass the course with a high-flying A++!". The clue to finding the password is as follows:

You have a string of 10^6 characters $(k_0, k_1, k_2, \ldots, k_{999999})$. Initially the string is composed entirely of the character 'a'. I will give you a series of instructions on how to mutate the string. Each instruction consists of two integers and a character (call them l, r, c). For each character k_i in the string, if $(l \leq i \leq r)$, then you should replace k_i with c. Finally, I will give you four integers $i_0\ i_1\ i_2\ i_3$, and you should output the characters $k_{i_0}\ k_{i_1}\ k_{i_2}\ k_{i_3}$ in order.

Help your friend Sherlock write a program to solve this problem!

Input

The first line of the input is an integer $n\ (0 \leq n \leq 10^6)$ indicating the number of instructions.

Then follows n lines each with l, r, c, where $l\ (0 \leq l < 10^6)$ is an integer denoting the left bound of the range, $r\ (l \leq r < 10^6)$ is an integer denoting the right bound of the range, and c is a lowercase character denoting the character to use to repeat over the range.

The last line of the input is four integers $i_0\ i_1\ i_2\ i_3$, the indices of the characters which you have to output.

Output

Output four space-separated characters, $k_{i_0}\ k_{i_1}\ k_{i_2}\ k_{i_3}$. You must have a space after the last character as well to be judged correct.

Sample Input

```
3
1 999999 c
500 1000 l
750 2000 u
800 2 515 0
```

Sample Output

```
u c l a
```