Project Euler #185: Number Mind

This problem is a programming version of Problem 185 from projecteuler.net

The game Number Mind is a variant of the well known game Master Mind.

Instead of coloured pegs, you have to guess a secret sequence of digits. After each guess you're only told in how many places you've guessed the correct digit. So, if the sequence was 1234 and you guessed 2036, you'd be told that you have one correct digit; however, you would NOT be told that you also have another digit in the wrong place.

For instance, given the following guesses for a 5-digit secret sequence,

90342 ;2 correct
70794 ;0 correct
39458 ;2 correct
34109 ;1 correct
51545 ;2 correct
12531 ;1 correct

The correct sequence 39542 is unique.

Based on the some guesses, find the unique 12-digit secret sequence.

Input Format

First line of every input file contains a single integer n — the number of guesses. n lines follow each containing the 12-digit guess sequence s_i and the number of correct digits for this guess c_i.

Constraints

$20 \leq n \leq 30$

$0 \leq c_i \leq 3$

Output Format

Output the string with exactly 12 digits — the unique valid answer to the guesses.

Sample Input

```
20
228569150065 1
907564288621 0
496954400043 0
713459943615 0
211421327491 1
258317293172 0
919252724339 1
197103476352 0
151173430038 0
063794395936 0
504759866532 1
502906565456 0
790539816536 0
595873942664 1
346602334981 0
988808475766 1
559203789779 0
498580144863 1
441454897857 1
622818801178 0
```

Sample Output

```
884045122207
```