Problem A.

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

Farmer John has three farms lined up each other aloneside: A, B, C, he invites all his cows from these farms to a dancing party on April Fools' Day. During the party, Farmer John wants to count the attendance of cows come from each farm, but he can't directly ask their working farm because it's confidential. Instead, Farmer John asks each cow to count the attendance of each farm, and he get the following results:

- A_1, B_1, C_1

- A_2, B_2, C_2

- ...

- A_n, B_n, C_n

where A_i, B_i, C_i is the attendance of each farm answered by the ith cow (include itself).

Farmer John knows social habit of these cows very well, he assumes answers of cows satisfy following conditions:

- cows never miscount the attendance for their **working farm**, because they know each other

- cows may underestimate (but never overestimate) the attendance for **adjacent farms**, because they don't know everyone very well

- cows from A and C can't count attendance of each other and the answer for that farm must be 0, because they are too far away to know others

- cows may decide to lie and give arbitrary answer, because it's Apirl Fools' Day

Farmer John wonders that whether it is possible that all cows are telling truth or there must be some cows lying.

Input

The first line contains one integer n ($1 \le n \le 10^5$), the total number of cows in the dancing party. For the next n lines, the ith line contains 3 integers $A_i \ B_i \ C_i$ ($0 \le A_i, B_i, C_i \le n$), the attendance of each farm from the ith cow.

Output

If reports can be true, print three integers in one line: A B C, the attendance of each farm; otherwise print 0 0 0.