

CCC '00 J4 - Babbling Brooks

Canadian Computing Competition: 2000 Stage 1, Junior #4, Senior #2

A series of streams run down the side of a mountain. The mountainside is very rocky so the streams split and rejoin many times. At the foot of the mountain, several streams emerge as rivers. Your job is to compute how much water flows in each river.

At any given elevation there are m streams, labelled 1 to m from left-to-right. As we proceed down the mountainside, one of the streams may split into a left fork and a right fork, increasing the total number of streams by 1 , or two streams may rejoin, reducing the total number of streams by 1 . After a split or a rejoining occurs, the streams are renumbered consecutively from left-to-right. There is always at least one stream and there are never more than 100 streams.

Input Specification

The first line of input contains n , the initial number of streams at some high altitude. The next n lines give the flow in each of the streams from left-to-right. Proceeding down the mountainside, several split or rejoin locations are encountered. For each **split** location, there will be three lines of input.

- a line containing `99` (to indicate a split)
- a line containing the number of the stream that is split
- a line containing a number between 0 and 100 , the percentage of flow from the split stream that flows to the left fork. (The rest flows to the right fork)

For each **join** location, there will be two lines of input:

- a line containing `88` (to indicate a join)
- a line containing the number of the stream that is rejoined with the stream to its right

The flow from both joined streams is combined. After the last split or join location will be:

- a single line containing `77` (to indicate end of input)

Output Specification

Your job is to determine how many streams emerge at the foot of the mountain and what the flow is in each. Your output is a sequence of real numbers, rounded to the nearest integer, giving the flow in rivers 1 through m .

Sample Input

3
10
20
30
99
1
50
88
3
88
2
77

Sample Output

5 55