

Southeastern European Regional Programming Contest
Bucharest, Romania – Vinnytsya, Ukraine
October 22, 2016

Problem J
Marathon

Input File: J.in
Output File: standard output
Time Limit: 0.2 seconds (C/C++)
Memory Limit: 256 megabytes

You've began running long distances. Simplistically, the road on which athletes race is a straight, infinite line. At some point in time all participants split into n groups of k_i people each.
Each group at this point in time is at coordinate x_i. We know that if a group consists of D people, the group's speed is **100**/D. All groups move in the direction of coordinate's growth. If one team catches another, they merge and their speed changes accordingly (more than two groups can merge simultaneously).
Since the road is infinite, from some point in time no more merges are possible.
You, as a beginner, are interested in the number of groups remaining and the number of people in each of them.

Input

The first line contains an integer n ($1 \le n \le 10^5$). Each of the following n lines contains the number k_i of people in the corresponding group and its coordinate x_i (x_i - real numbers with no more than three decimal digits and their absolute values do not exceed 10^4, $1 \le k_i \le 100$, all the coordinates are different).

Output

The first line of output contains the number of groups m. The second line contains m integers - the number of people in each of these groups, in any order.

Sample input	Sample output
4 1 0 2 9000 4 1 3 10000	2 5 5