Distribution of Floppy Disks

It happens in our times, that the demand for goods is greater than the supply. Suppose, n customers are willing to buy

$$D = D_1 + D_2 + \ldots + D_n \tag{1}$$

floppy disks for their computers. Meanwhile, the supplier has only $d < D$ floppy disks. How to distribute them between the customers?

It has been decided that it would be the best to distribute them so, that there would exist such a number C that the following conditions would be satisfied:

- if $D_i \leq C$, then $d_i = D_i$;
- if $D_i > C$, then $d_i = C$ or $d_i = C + 1$;
- if $D_i \leq D_j$, then $d_i \leq d_j$;

$d = d_1 + d_2 + \ldots + d_n$.

C is the number, selected while solving the task. How to distribute the floppy disks and to satisfy the conditions given above?

Task. Describe the idea of the solution. Write an algorithm to distribute the floppy disks.

Examples.

Input	Output	Comments
20 7 10 11 13 15 0	C = 3 1 7 4 2 10 4 3 11 4 4 13 4 5 15 4	The supplier has 20 floppies. The following lines contain the amount of floppy disks requested by each customer. End of input is marked by a line with zero (0). In this example there are 5 customers and they would like to buy 7+10+11+13+15 = 56 floppy disks. C value is written in the first line of the output. The number of subsequent lines is equal to the number of the customers each line containing three numbers. The first is the number of the customer, the second is the amount of the floppies requested by this customer, the third number is the number of the floppy disks this customer will get.

Constraints. $1 \leq n \leq 100$, $1 \leq d \leq 25\,000$, $1 \leq D \leq 70\,000$.