

IT700 Lab Test 2 (8 Jan 2021)

Distributing Chocolates.

Radha has some chocolate packets that she wants to divide between her two children in a fair manner. The chocolates are pre-packaged in packets of different sizes: some small packets might contain just a few chocolates while the larger packets might have tens or even hundreds of chocolates. Radha wants to let her children have the joy of opening the packets themselves, so she will not open any packet herself to divide the chocolates in exactly two parts.

We need to help Radha find a way to divide all the chocolates packets into two parts as fairly as possible, without opening any of the packets. The partitioning should be such that:

- i. Each of the chocolate packets should go in one part or the other.
- ii. The total number of packets in each of the two parts should not differ by more than one.
- iii. The total number of chocolates in the two parts should be as equal as possible.

Input:

The input is read from a text file. The first line in the input file is the total number of chocolate packets n . Each of the next n lines gives the total number of chocolates in each of the n packets. You may assume that the number of chocolates in a packet can be any quantity between 1 and 500, and that the total number of packets n does not exceed 100.

Output:

The output should consist of two numbers in one line, which are the total number of chocolates in one of the part and the total number of chocolates in the other part. If the total number of chocolates in the two parts are different, print the smaller number first.

Sample Input:

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3
95
200
100
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Sample Output:

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195 200
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