Tug of War

Time: 1 Second

Memory: 100KB

A group of students decide to play a tug of war. The students would need to be divided into two teams. Each student must be on one team or the other; the number of students on the two teams must not differ by more than 1; the total weight of the students on each team should be as nearly equal as possible.

Input

The first line of input contains N (1 to 100000) the number of students. This is followed by N lines. Each of these lines give the weight of a given student.

Output

Your output will be a single line containing 2 numbers: the total weight of the people on one team, and the total weight of the people on the other team. If these numbers differ, give the lesser first.

Sample Input

5

80

60

120

50

60

Sample Output

180 190