

13-th Bulgarian National Olympiad in Informatics

May 3 and 4, 1997

Problem 3. Sidewalk.

Along a sidewalk there was planted a line of N young trees ($1 \leq N \leq 1000$), numbered by $1, 2, \dots, N$. After a year the forestry officer find the height of each tree different from the height of any other. The officer decides to cut off some trees, so that the rest of them would satisfy the condition: starting from the tree with the smallest number, tree's heights should increase up to a tree numbered by i , and then decrease down to the end of the line. In some cases, it might not exist a tree on the left hand side or on the right hand side of the i -th tree. The forestry officer tends to preserve as many trees as possible. When there are more than one possibilities, each including an equal number of trees to be cut off, the officer will choose such of them, that ensures the remaining trees to have the greatest total sum of their heights. Write a program, that outputs an optimal plan for cutting off.

Input data are read from a text file **INP**. At the first position in the first row of the file it is written a positive integer N . In the beginning of each of the next N rows it is written the height of each tree in the same order as their order in the line.

Output must be written into a text file **OUT** and this file must contain only one row with two integers divided by a space; one integer for the number of remaining trees, another for the total sum of heights of these remaining trees.

An Example:

Input	Output
9 12 15 8 13 7 18 11 14 10	5 69

Source: Matematika i informatika, journal published by Bulgarian Ministry of Education, n. 3-4, 1997, pp. 82-87.

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