Problem D – Divine Lights

In an old temple, there are N lamps, numbered from 1 to N. Each lamp is initially either on or off.

A priest performs a ceremony lasting N days. On day i of the ceremony, the priest toggles every lamp except lamp i: lamps that are on are turned off, and lamps that are off are turned on. The lamps remain in their resulting states until the next day.

Given the initial state of each lamp, determine the minimum and maximum numbers of lamps that are on at the end of a day during the ceremony. The initial states of the lamps must not be considered.

Input

The input consists of a single line that contains a string of N characters ($1 \leq N \leq 2 \times 10^5$). The i-th character is "`1`" if lamp i is initially on, and "`0`" if it is initially off.

Output

Output a single line with two integers representing the minimum and maximum numbers of lamps that are on at the end of a day during the ceremony, in that order.

Sample input 1	**Sample output 1**
`1011`	`1 3`

Explanation of sample 1:

In this sample $N = 4$ and the initial states of the lamps are given by "`1011`". At the end of each day of the ceremony their states are:

- Day 1: "`1100`" (2 lamps on)
- Day 2: "`0111`" (3 lamps on)
- Day 3: "`1010`" (2 lamps on)
- Day 4: "`0100`" (1 lamp on)

Thus, among the N days considered, the minimum number of lamps that are on is 1, and the maximum is 3.

Sample input 2	**Sample output 2**
`11`	`0 1`

Explanation of sample 2:

Here $N = 2$ and the initial states of the lamps are given by "`11`". At the end of day 1 the states of the lamps are "`10`", and at the end of day 2 they are "`00`". The minimum is 0 and the maximum is 1. Note that initially two lamps are on, but the initial states must not be considered.