Problem B
Bus Line

In Jaime's city people who uses public transportation waits in line on the bus station to get on a bus. Once the bus arrives, people get on the bus in the order they were on the line, they always get on the bus using the front door, they pay, and then walk to the backdoor of the bus until they reach the backdoor or a person, so the person that gets on the bus first is the closest to the backdoor of the bus (until that person gets off). Unlike most of public transportation systems, buses at Jaime's city do not have seats, this is why people stands side by side on a line waiting to reach their station to get off.

Bus rules dictate that everyone should get off using the backdoor, this is troublesome for some people, but very annoying for Jaime. Jaime is usually the last one getting on the bus, and when he has to get off, to reach the backdoor and step off, he needs to swap places with each person that took the bus before him. More generally if Jaime needs to get off the bus before someone that got on the bus before him, Jaime will need to swap places with that person to get off. Jaime filled a complaint arguing that it is better to use the nearest door to get off the bus, that way the number of swaps to get off the bus can be minimized, in this case Jaime would not swap places with anyone, if he was the last person getting on the bus, at the time he needs to get off he could just get off from the front door as he is the closest one to it.

The bus station answered Jaime's complaint requesting him evidence that this method would be better. As showing this is better for him is not enough evidence, Jaime will find evidence that in general this is better to anyone using the bus. Jaime will ask each person in the line at what bus station they need to get off so that he can calculate the total number of swaps needed before all people gets off the bus if only the backdoor is allowed, and the total number of swaps needed before all people gets off the bus if it is allowed to get off using either the front or the backdoor.

Jaime has the list, but, is having a hard time finding these numbers, can you help him with that task? You can assume people will not get on the bus after leaving Jaime's station which is station 0, and also the bus arrives to the stations in order, this is it first gets to station 1, then station 2, etc...

Input

The first line of input contains a single integer N ($1 \leq N \leq 10^5$), representing the number of people that will get on the bus in Jaime's stop. Each of the next N lines contains a single integer number b_i ($1 \leq b_i \leq 10^5$), representing the station at wich the $i - th$ person in line needs to get off the bus.

Output

Output a single line with two numbers separated by a space, representing the total number of swaps needed before all people gets off the bus if only the backdoor is allowed, and the total number of swaps needed before all people gets off the bus if it is allowed to get off using either the front or the backdoor, repectively.

Input example 1	Output example 1
6 2 5 6 3 8 4	5 2