Cake Fight (Medium)

Time limit: 1s **Memory limit: 2GB**

Hidden deep under several layers of bedrock, Vault 3-14 contains humanity's last hope… two avid doomsday preppers, Donald and Joe.

Known for their keen foresight, the pair settled on enduring the post apocalyptic setting with copious amounts of cake. Unfortunately, cutting cake was not their forte, and their attempts to divvy up the baked rations they had stowed away produced n portions of completely different sizes. An array a describes the weight of each portion in patriotic units of ounces.

Obviously, both Donald and Joe would like as much cake to themselves. To avoid getting into a fist fight, they have devised a clever system to allocate portions. Joe will start off holding a cake token. Whoever has the token will allocate the current slice to either themselves or the other survivor. If they keep the current slice for themselves, they must hand over the token, but if they give the current slice to the other person, they keep the token and get to choose who gets the next slice. They work through the slices in the order stored in the array.

If both survivors play using this system optimally, how many ounces of cake will each get?

Input and Output
The first line of input data contains the integer N.
The next line will contain n integers that make up the array a.

Print $d\ j$, the total amount of cake Donald and Joe will get, respectively.

Constraints
$1 \leq N \leq 10^5$
$1 \leq a_i \leq 10^5$

Sample Input (stdin)
```
3
1 2 4
```

Sample Output (stdout)
```
3 4
```

Explanation
Joe starts off with the token, and will give the first cake to Donald. Joe keeps the token, gives the second cake to Donald again, allowing him to keep the token and the third cake which he will keep.