

## 6332 IT Companies

There are  $N$  IT companies which are labeled from 1 to  $N$ . Each of them has a branch (a branch is not a company, and companies and branches are all called “unit”). The branches are labeled from  $-1$  to  $-N$ . The branch of company  $i$  is labeled as  $-i$ . The number of workers of each company and its branch has to fit the rules below:

- The number of workers of a company must be larger than that of the branch of it.
- There are more workers in company  $i$  than company  $j$  if and only if there are more workers in the branch of company  $i$  than the branch of company  $j$ .

Among the companies whose label is larger than  $i$  (range from  $i + 1$  to  $n$ ), and the branches whose label is larger than  $-i$  (range from  $-1$  to  $-(i - 1)$ ), there are  $c[i]$  units which have more workers than company  $i$ .

You need to sort the  $2 \times N$  units in the ascending order by the number of workers.

### Input

The input contains multiple test cases. Each test case begins with a single line containing one integer  $N$  indicating the number of companies ( $0 < N \leq 100000$ ). Next line contains  $N$  integers which are  $c[1], c[2] \dots c[N]$  ( $c[i] \leq N$ ).

The input ends with  $N = 0$ .

### Output

For each test case, output the sorted label sequence of all units in a line. If there are no solutions, output ‘Impossible’ instead.

This problem is special judged.

### Sample Input

```
2
1 1
10
4 8 3 4 2 0 5 7 1 6
0
```

### Sample Output

```
Impossible
-8 -2 -10 -7 8 2 10 -4 7 -1 4 -3 -5 -9 1 3 5 9 -6 6
```