Sand Buckets (`buckets`)

Marco likes very much to play with the sand. He has many tools he uses to build sand castles, like shovels, rakes and molds. He also has N buckets, the i-th of which having a diameter of D_i centimeters.

Figure 1: The buckets Marco uses to play with the sand.

Marco would like to pile the buckets one inside the other to transport them more easily. Of course, one bucket A can be put inside another bucket B only if the diameter of A is **strictly smaller** than that of B, that is, if $D_A < D_B$. Help Marco find out if it is possible to put all the buckets in a single pile!

> ☞ Among the attachments of this task you may find a template file `buckets.*` with a sample incomplete implementation.

Input

The first line contains the only integer N, the number of buckets. The second line contains N integers D_i, the diameter of every bucket.

Output

If all the buckets can be put in a single pile, you need to write a single line containing the string `Ok`. Otherwise, you should print the string `Impossible`.

Constraints

- $1 \le N \le 100\,000$.
- $1 \le D_i \le 2 \cdot 10^9$ for each $i = 0 \ldots N-1$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points)   Examples.

– **Subtask 2** (15 points) $N \leq 3$, $D_i \leq 100\,000$ for each $i = 0 \ldots N-1$.

– **Subtask 3** (30 points) $N \leq 10\,000$, $D_i \leq 100\,000$ for each $i = 0 \ldots N-1$.

– **Subtask 4** (35 points) $D_i \leq 100\,000$ for each $i = 0 \ldots N-1$.

– **Subtask 5** (20 points)   No additional limitations.

Examples

input	output
3 10 2 5	Ok
3 5 10 5	Impossible

Explanation

In the **first sample case**, the second bucket (with diameter of 2 centimeters) can be placed inside the third bucket (with diameter of 5 centimeters). These two buckets can then be put inside the first bucket (with diameter of 10 centimeters).

In the **second sample case**, it is not possible to place all the buckets in the same pile.