A. Vitya in the Countryside

time limit per test
1 second
memory limit per test
256 megabytes
input
standard input
output
standard output

Every summer Vitya comes to visit his grandmother in the countryside. This summer, he got a huge wart. Every grandma knows that one should treat warts when the moon goes down. Thus, Vitya has to catch the moment when the moon is down.

Moon cycle lasts 30 days. The size of the visible part of the moon (in Vitya's units) for each day is $0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1$, and then cycle repeats, thus after the second 1 again goes 0.

As there is no internet in the countryside, Vitya has been watching the moon for n consecutive days and for each of these days he wrote down the size of the visible part of the moon. Help him find out whether the moon will be up or down next day, or this cannot be determined by the data he has.

Input

The first line of the input contains a single integer n ($1 \le n \le 92$) — the number of consecutive days Vitya was watching the size of the visible part of the moon.

The second line contains n integers a_i ($0 \le a_i \le 15$) — Vitya's records.

It's guaranteed that the input data is consistent.

Output

If Vitya can be sure that the size of visible part of the moon on day $n + 1$ will be less than the size of the visible part on day n, then print "DOWN" at the only line of the output. If he might be sure that the size of the visible part will increase, then print "UP". If it's impossible to determine what exactly will happen with the moon, print -1.

Examples

input

Copy

```
5
3 4 5 6 7
```

output

Copy

```
UP
```

input

Copy

```
7
12 13 14 15 14 13 12
```

output

Copy

```
DOWN
```

input

Copy

```
1
8
```

output

Copy

```
-1
```

Note

In the first sample, the size of the moon on the next day will be equal to 8, thus the answer is "UP".

In the second sample, the size of the moon on the next day will be 11, thus the answer is "DOWN".

In the third sample, there is no way to determine whether the size of the moon on the next day will be 7 or 9, thus the answer is -1.