

## Problem D

### Last Slime Standing

*timelimit: 1 second*

Welcome to the Heavy Slime Power Tournament, where many slimes enter, but only one may leave! We have gathered  $n$  brave slimes who will battle it out to see who will be the last slime standing! The tournament will consist of  $n - 1$  rounds. In each round, two slimes will be arbitrarily selected to do battle. Slime battles are very predictable; when two slimes battle, the heavier one will always win. If both slimes have the same mass, then they are both equally likely to be declared the winner. After two slimes battle, the loser will be merged (humanely) with the winner, adding the loser's mass to the winning slime. The slime remaining after all  $n - 1$  rounds have completed is declared the winner.

You have noticed that, due to the nature of the tournament, many different slimes have a chance of winning the tournament. Before you decide which slime to root for, you want to determine which slimes have a chance of winning in at least one possible tournament sequence.

**The Problem:** Given the mass of each slime entering the tournament, determine for each slime if it can win the tournament in at least one sequence of battles that could comprise a tournament.

### Input

The first line of input contains a single integer,  $n$  ( $1 \leq n \leq 10^5$ ), representing the number of slimes entering the tournament. The following line contains  $n$  single-space-separated integers, each representing the mass of a slime (in standard goo units). Each slime weighs between 1 and 109 (inclusive) standard goo units.

### Output

Output a line consisting of a single string of  $n$  characters. The  $i^{th}$  character of the string should be W if it is possible for the  $i$ th slime to win the tournament and L otherwise.

#### Sample Input 1

```
5
7 1 3 10 2
```

#### Sample Output 1

```
WLLWL
```

#### Sample Input 2

```
3
7 7 7
```

#### Sample Output 2

```
WWW
```

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