

Problem D – Delicious Sushi

Time limit: 1 second

As you might know, some people tend to make competitions out of everything. So does this new sushi restaurant where they they arrange a two-person eating contest each Saturday: winner is the person that eats the most **costly** sushi.

The restaurant has a special contest table. On this table, sushi plates are arranged in a single row. The two competitors alternate in choosing a sushi plate to eat next. But they are only allowed to choose the leftmost or the rightmost plate of the sushi of the row. Both know the price tags of the individual sushi plates and try to eat plates that in total sum up to the maximal price. The restaurant only charges the difference between the total values eaten by each contestant. The loser has to pay the bill.

My good friend Gerhard is well known for being a gourmet on the one side and eating as much food as possible on the other side. I will compete against him in this eating contest. Please help me to compute which order of plate selection is optimal for winning this contest. Of course, Gerhard – as a gourmet – selects the optimal sushi, as well. Knowing this fact, he is so generous to let me start the competition. If at some point during the contest it does not matter, we both choose the leftmost plate from the sushi row. There is never more sushi on the table than we both can eat.

Input

The input consists of:

- One line with one integer s ($1 < s \leq 1000$) where s specifies the number of sushi plates that are lined up on the contest table.
- One line with s integers p_1, \dots, p_s ($0 < p_i \leq 2000$), where p_i is the price of the i -th sushi plate (from left to right) in Cent.

Output

Output the amount the restaurant charges for this eating contest in the first line (positive, if I won — negative, if Gerhard won the contest).

Output the selection of sushi plates in the second line, i.e. from which end of the row the plates are chosen (L for the left side, R for the right side).

Sample Input 1

```
2
10 20
```

Sample Output 1

```
10
RL
```

Sample Input 2

```
3
50 10 10
```

Sample Output 2

```
50
LLL
```

Sample Input 3

```
5
3 40 2 4 8
```

Sample Output 3

```
-31
LLRRL
```

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