

Median II

time limit per test: 5 seconds
memory limit per test: 939.6 megabytes
input: standard input
output: standard output

points: 100 · problem code: medianii · author: jbroeksteeg

You are given an array a of n elements. Furthermore, there are q queries. Each query is of the form `QUERY l r` or `UPDATE i v`. The former is the query from the previous problem, and the letter means to update index i to value v .

Sample Input

```
5 3
1 2 3 4 5
QUERY 1 4
UPDATE 2 10
QUERY 1 4
```

Sample Output

```
3
4
```

Constraints

$1 \leq n, q \leq 1e5$ $1 \leq a[i] \leq 1e4$