Problem HACKTHEREACTOR: Hack the Reactor

Darn! Dr. No's son Dr. Nono harasses America again by radio jamming from a new location. Because Dr. Nono is smarter than Dr. No, he secured the reactor against sabotage with a unbelievably strong code. James wants to stop Dr. Nono's evil plans, and managed to steal a program which can calculate the code needed to deactivate the reactor which serves the jammer with energy. Unfortunately, 007 has no interpreter which can execute the program and Q is on vacation. You are the last hope to help James with an interpreter and stopping the plans of Dr. Nono.

The program contains multiple (at least two) instructions and there are two types of instructions:

- Read Number, Format: `R <nr>`
  This instruction reads one integer nr $(0 \leq nr \leq 10^9)$ into the memory. It starts with the opcode `R` followed by one space and the number.

- Print Median, Format: `M`
  This instruction prints the median of all numbers currently held in memory on a single line. If the count of numbers is odd it prints one median, else it prints the lower and upper median in ascending order separated by a single space.

The code to deactivate the reactor is the output of the program if it is executed correctly. You may safely assume that each program starts with a read instruction and ends with a median instruction. Needless to say that James needs your help as fast as possible.

Input

The first line contains a single integer n $(1 < n \leq 10^6)$ denoting the number of instructions of the stolen program. Then, n lines follow with one instruction per line.

Output

Print the code for the reactor after a correct execution of the stolen program, i.e., the output of the program.

Sample Input 1

```
7
R 3
R 1
M
R 6
M
R 2
M
```

Sample Output 1

```
1 3
3
2 3
```