

# A concrete simulation

You are given a matrix  $M$  of type  $1234 \times 5678$ . It is initially filled with integers  $1 \dots 1234 \times 5678$  in row major order. Your task is to process a list of commands manipulating  $M$ . There are 4 types of commands:

- "R x y" swap the x-th and y-th row of  $M$ ;
- "C x y" swap the x-th and y-th column of  $M$ ;
- "Q x y" write out  $M(x,y)$ ;
- "W z" write out x and y where  $z=M(x,y)$ .

## Input

A list of valid commands. Input terminated by EOF.

## Output

For each "Q x y" write out one line with the current value of  $M(x,y)$ , for each "W z" write out one line with the value of x and y (interpreted as above) separated by a space.

### Input:

```
R 1 2
Q 1 1
Q 2 1
W 1
W 5679
C 1 2
Q 1 1
Q 2 1
W 1
W 5679
```

### Output:

```
5679
1
2 1
1 1
5680
2
2 2
1 2
```