

Matrix

Objective

The objective of this problem is to ensure that students know how to use 2 dimensional array and simple looping technique.

Problem Description

Given a 2 dimensional array of size **N** x **M** containing 1 or 0 and a query (ROW or COLUMN), determine the sum of the numbers in the array corresponding to the query. For example, query “ROW 3” means sum all the elements in the 3rd row of the array.

Input

The first line of the input contains two integers, **N** ($1 \leq N \leq 100$) and **M** ($1 \leq M \leq 100$). The next line is an array with size **N** x **M**. The next line is the query with format “ROW **x**“, ($1 \leq x \leq N$) or “COLUMN **y**“, ($1 \leq y \leq M$).

Output

Output the answer to the query.

Sample Input

```
4 5
1 0 1 0 1
0 1 0 1 0
1 1 1 0 1
0 0 1 0 0
ROW 3
```

Sample Output

```
4
```

Explanation

```

1 0 1 0 1
0 1 0 1 0
ROW 3    1 1 1 0 1
0 0 1 0 0
```

The sum of numbers in row 3 is 4

Note

The main class must be called Matrix, and be in the source file Matrix.cpp.