

Multiples of 3

There are N numbers $a[0], a[1]..a[N - 1]$. Initially all are 0. You have to perform two types of operations :

- 1) Increase the numbers between indices A and B (inclusive) by 1. This is represented by the command "0 A B"
- 2) Answer how many numbers between indices A and B (inclusive) are divisible by 3. This is represented by the command "1 A B".

Input

The first line contains two integers, N and Q . Each of the next Q lines are either of the form "0 A B" or "1 A B" as mentioned above.

Output

Output 1 line for each of the queries of the form "1 A B" containing the required answer for the corresponding query.

Sample

Sample Input :

```
4 7
1 0 3
0 1 2
0 1 3
1 0 0
0 0 3
1 3 3
1 0 3
```

Sample Output :

```
4
1
0
2
```

Constraints

$1 \leq N \leq 100000$
 $1 \leq Q \leq 100000$
 $0 \leq A \leq B \leq N - 1$