MULTQ3 - Multiples of 3

There are N numbers a[0],a[1]..a[N - 1]. Initally 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

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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
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Constraints

1 <= N <= 100000
1 <= Q <= 100000
0 <= A <= B <= N - 1