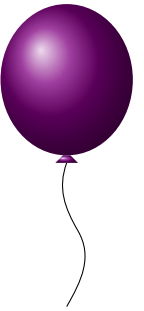


Subsegment sum

TIME LIMIT: 2.0s
MEMORY LIMIT: 256MB



You are given an array containing N elements. Process a series of queries of element modifications and subsegment sum in this array.

INPUT

First line of the input contains two integers N and K — the size of the array and the number of queries ($1 \leq N \leq 100\,000$; $0 \leq K \leq 100\,000$).

The following K lines contain descriptions of queries:

1. **A i x** — assign the value x to the element with index i ($1 \leq i \leq n$; $0 \leq x \leq 10^9$);
2. **Q l r** — find the sum of array elements on positions from l to r ($1 \leq l \leq r \leq n$).

Initially the array consists of zeroes.

OUTPUT

For every query of the type “Q” print the sum on the given subsegment.

SAMPLES

Sample input 1	Sample output 1
5 9 A 2 2 A 3 1 A 4 2 Q 1 1 Q 2 2 Q 3 3 Q 4 4 Q 5 5 Q 1 5	0 2 1 2 0 5