

Range Query

Timelimit: 10 sec

Problem description

You have an array $a[1 \dots n]$ that contains initially zeros. There are two operations: Adding a number to an array cell and asking for the sum of a subarray. Use a clever data structure that implements those two operations faster than an array.

The absolute value of the numbers that are added will be at most 2000. The size of the array and the number of queries will be at most a million. Your program should process all operations and give a one line answer of each sum query. The first input line contains the number of operations followed by one operation in a line. An operation is of the form **ADD** i x meaning to add x to the array cell i , i.e., $a[i] := a[i] + x$ and **SUM** i j asking for the sum $a[i] + a[i + 1] + \dots + a[j]$.

This is an interactive task. Answer the queries immediately and do not forget to flush.

Sample input/output

Input	Output
10	
ADD 9 75	
ADD 1 277	
ADD 2 679	
SUM 1 9	
ADD 3 -227	
SUM 4 6	
ADD 9 315	1031
ADD 9 630	0
SUM 1 7	729
SUM 4 7	0