

Problem F. Monkey and Apple-trees

Input file: `f.in`
Output file: `f.out`
Time limit: 2 seconds
Memory limit: 256 megabytes

Everyone knows that the yummiest fruit in the world is an apple. Even the monkey Chris knows that. There are many apple-trees in the a forest located along the river and numerated consecutively starting from 1. Sometimes Chris comes to the forest, chooses a group of apple-trees growing consecutively (selected interval) and counts the amount of apple-trees with red-ripen apples among them. Sometimes apples on a few consequtive apple-trees have red-ripen before his next arrival.

You have to answer how many apple-trees in the selected interval have red-ripen apples at each Chris's arrival. At the beginning all the apples are unripen.

Input

In the first line of input file an integer M is given — number of events ($1 \leq M \leq 100000$). The following M lines contain description of events — each contains three integers D_i, X_i, Y_i ($1 \leq D_i \leq 2, X_i \leq Y_i$). If the $D_i = 1$, then the event is Chris's arrival, if the $D_i = 2$ — red-ripening of all apples in the selected interval of the apple-trees. Other two numbers X_i and Y_i , describe the interval for the event.

For calculating the limits of the interval there is an additional number C . At the beginning $C = 0$. An interval for the event is interval from $X_i + C$ to $Y_i + C$ inclusively. It's guaranteed that $1 \leq X_i + C, Y_i + C \leq 10^9$. If the event is apples red-ripening then C doesn't change. If the event is Chris's arrival, then as the result C becomes equal to the amount of red-ripen apple-trees he has counted.

Output

For each of Chris's arrival output one line with one number in it — the task answer.

Examples

<code>f.in</code>	<code>f.out</code>
3 2 5 8 2 7 10 1 1 10	6
4 2 2 3 1 1 3 2 2 3 1 -1 3	2 4
6 2 1 7 2 10 12 1 7 11 2 11 13 1 8 10 1 15 17	3 2 0

Note

In 35% testcases $M \leq 10\,000, 1 \leq X_i + C, Y_i + C \leq 10^6$.

In 60% testcases $1 \leq X_i + C, Y_i + C \leq 10^7$.