The skyline of Singapore as viewed from the Marina Promenade (shown on the left) is one of the iconic scenes of Singapore. Country X would also like to create an iconic skyline, and it has put up a call for proposals. Each submitted proposal is a description of a proposed skyline and one of the metrics that country X will use to evaluate a proposed skyline is the amount of overlap in the proposed sky-line.

Skyline of Singapore at Night

As the assistant to the chair of the skyline evaluation committee, you have been tasked with determining the amount of overlap in each proposal. Each proposal is a sequence of buildings, $\langle b_1, b_2, \ldots, b_n \rangle$, where a building is specified by its left and right endpoint and its height. The buildings are specified in back to front order, in other words a building which appears later in the sequence appears in front of a building which appears earlier in the sequence.

The skyline formed by the first k buildings is the union of the rectangles of the first k buildings (see Figure 4). The overlap of a building, b_i, is defined as the total horizontal length of the parts of b_i, whose height is greater than or equal to the skyline behind it. This is equivalent to the total horizontal length of parts of the skyline behind b_i which has a height that is less than or equal to h_i, where h_i is the height of building b_i. You may assume that initially the skyline has height zero everywhere.

Input

The input consists of a line containing the number c of datasets, followed by c datasets, followed by a line containing the number '0'.

The first line of each dataset consists of a single positive integer, n $(0 < n < 100000)$, which is the number of buildings in the proposal. The following n lines of each dataset each contains a description of a single building. The i-th line is a description of building b_i. Each building b_i is described by three positive integers, separated by spaces, namely, l_i, r_i and h_i, where l_i and r_j $(0 < l_i < r_i \leq 100000)$ represents the left and right end point of the building and h_i $(0 < h_i \leq 10^9)$ represents the height of the building.

Output

The output consists of one line for each dataset. The c-th line contains one single integer, representing the amount of overlap in the proposal for dataset c. You may assume that the amount of overlap for each dataset is at most 2000000.

Note: In the sample test case, the overlap of building b_1, b_2 and b_3 are 6, 4 and 4 respectively. Figure 4 shows how to compute the overlap of building b_3. The grey area represents the skyline formed by b_1 and b_2 and the black rectangle represents b_3. As shown in the figure, the length of the skyline covered by b_3 is from position 3 to position 5 and from position 11 to position 13, therefore the overlap of b_3 is 4.

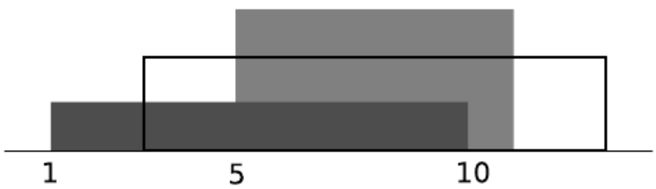

Figure 4: Computing Skyline Overlap

Sample Input

```
1
3
5 11 3
1 10 1
3 13 2
0
```

Sample Output

```
14
```