# City Skyline

It's 10 minutes to midnight on New Year's Eve, and the mayor of Silhouettown wants to host a fireworks display. There has been a lot of new development this year, and so the skyline looks completely different. The mayor needs to know the exact shape of the skyline, so that the fireworks display can be as spectacular as last year's (and perhaps even more so).

The planning department has a list of all the buildings in Silhouettown, which have all been built in a straight line on the waterfront. Each document states the start (x_1) and end (x_2) position of the building and its height (h). Local custom dictates that every building must be strictly rectangular. Given the documents for every building in Silhouettown, determine the list of points that describes the skyline.

If there were 3 buildings, documented as **1 3 4**, **2 4 3**, and **5 6 6**, then the skyline would look as shown, and would be described by the points (0,1) (1,4) (3,4) (3,3) (4,3) (4,0) (5,6) (6,6) (6,0).
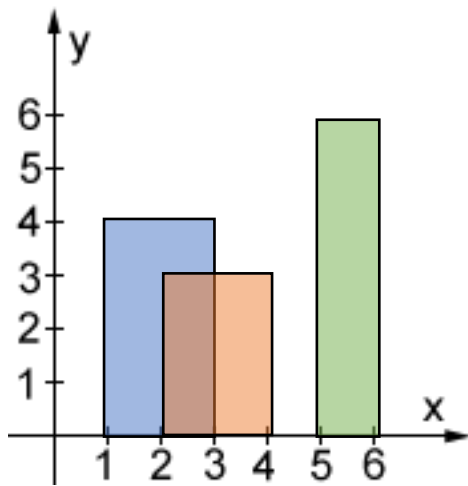
You will be given an integer n, denoting the number of buildings in Silhouettown, followed by n lines, containing the 3 integers x_1 x_2 h, documenting each building.

$(0 \leq x_1\ x_2\ h \leq 2^{30})\ (3 \leq n \leq 2^{15})$

Output the list of points describing the skyline, each point on a separate line. (-1, -1) denotes the end of the skyline.

Sample Input 1:

```
3
1 3 4
2 4 3
5 6 6
```

Sample Output 1:

```
1 0
1 4
3 4
3 3
4 3
4 0
5 0
5 6
6 6
6 0
-1 -1
```

Sample Input 2:

```
5
0 6 2
2 4 5
5 7 3
5 6 1
8 10 4
```

Sample Output 2:

```
0 0
0 2
2 2
2 5
4 5
4 2
5 2
5 3
7 3
7 0
8 0
8 4
10 4
10 0
-1 -1
```