PROBLEM

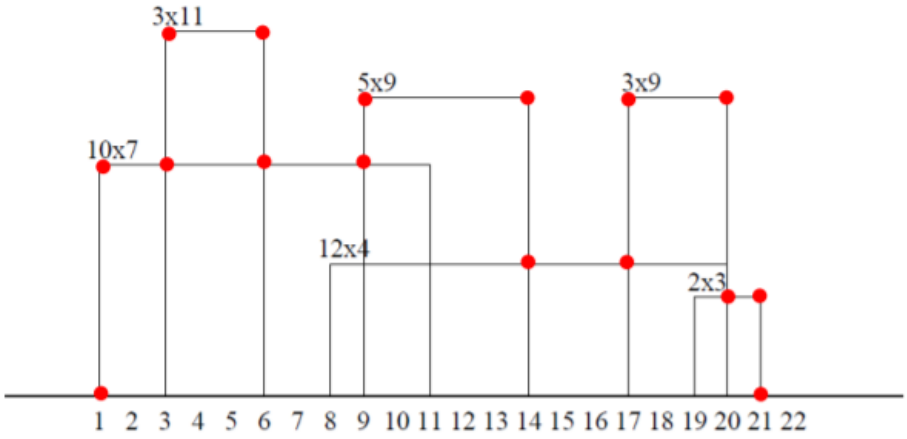
Suppose you are looking at a city from a very long distance, the sun is behind the city (from your perspective). You will not be able to recognize individual buildings. The whole city will be seen as a silhouette.

The problem is:

Suppose that the dimensions of the rectangular shadow of each building are given. In addition, each of these rectangles lies on a common line (ground) and in the same direction (upward). In addition to the dimensions, the position of each rectangle is also given to you. Your task is to find the corners of the broken line surrounding the silhouette, if you agree.

Example

Consider the below given example



As given in the picture above, there are 6 rectangular which could be listed as;

WIDTH	HEIGHT	POSITION ON GROUND
3	11	3
10	7	1
5	9	9
12	4	8
3	9	17
2	3	19

The “Position_on_the_Ground” is the position of the lower left corner of the rectangle. The broken line surrounding the silhouette, where the leftmost corner of the broken line is indicated at the far left of the set, followed by the next in the broken line, and so on. We will represent it with an ordered set of vertices. A vertex will be represented by 2 tuples:

(Position_on_Ground,Height)

So for this example the solution would be:

[(1, 0), (1, 7), (3, 7), (3, 11), (6, 11), (6, 7), (9, 7), (9, 9), (14, 9), (14, 4), (17, 4), (17, 9), (20, 9), (20, 3), (21, 3), (21, 0)]

Specifications

• Your program will read the Width, Height, Position_on_Ground information from the standart input. You are given that there are at most 2000 rectangles. Each input line will contain 3 integers corresponding to the information of one of the rectangles. (There will be no other characters on the line except these three numbers which are seperated from each other by blanks only). No information (like an integer at the start of the input) of how many actual lines are present in the input will be given! The input will terminate with the -1 character

• There is no order is imposed on the input lines. This means that a rectangle's information can be given at any moment of the input process.

• The output is made to the standart output. The output will contain the vertex information of the solution in the order specified in the previous subsection. You don't have to output each vertex information on a new line. It is allowed to put them all in a single line separated by at least one blank. Though, not doing so, (i.e. outputting each vertex information on a new line), is also ok. A vertex infomation on the output is two integers separeted by at least one blank. The first integer is the Position_on_Ground and the second is the Height of the vertex.

The expected output for the above given example is:

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1 0 1 7 3 7 3 11 6 11 6 7 9 7 9 9 14 9 14 4 17 4 17 9 20 9 20 3 21 3 21 0
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Use only C programming language, others will not accepted.