6th Catalysts' Coding Contest

Vienna / Austria

October 21st, 2011

CRACK IT!

Catalysts

Bei dem Spiel *Unblock Me** muss man Holzklötze verschieben. Klingt langweilig? Ist es aber nicht ;-)

Das Spielprinzip ist simpel: Durch richtiges horizontales oder vertikales Verschieben von Holzklötzen wird eine Blockade aufgelöst, die zwischen mehreren eng aneinander liegenden Holzbalken besteht.

Einige Levels in diesem Spiel sind wirklich sehr schwer zu lösen. Soll es also lieber der Computer lösen.

In the game *Unblock Me** you have to move wooden blocks. Sounds boring? Well, it‘s not ;-)

The principle of the game is simple: You eliminate obstacles between several neighboring blocks by moving the wooden blocks either vertically or horizontally.

Several levels in this game are really hard to solve. So the computer should rather solve them.

* Developed by Kirakorn Chimkool

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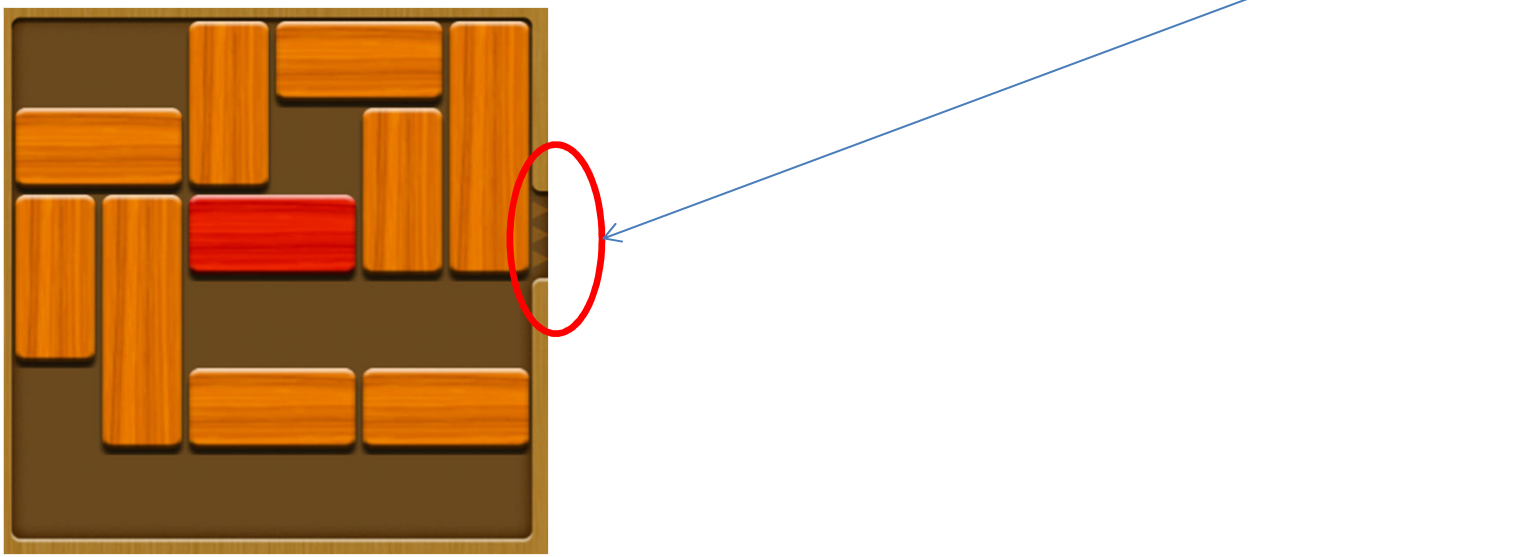
Watch the video: http://www.youtube.com/watch?v=GuRt9OuNblI&feature=related

Goal: Get the red bar to the door!



Block

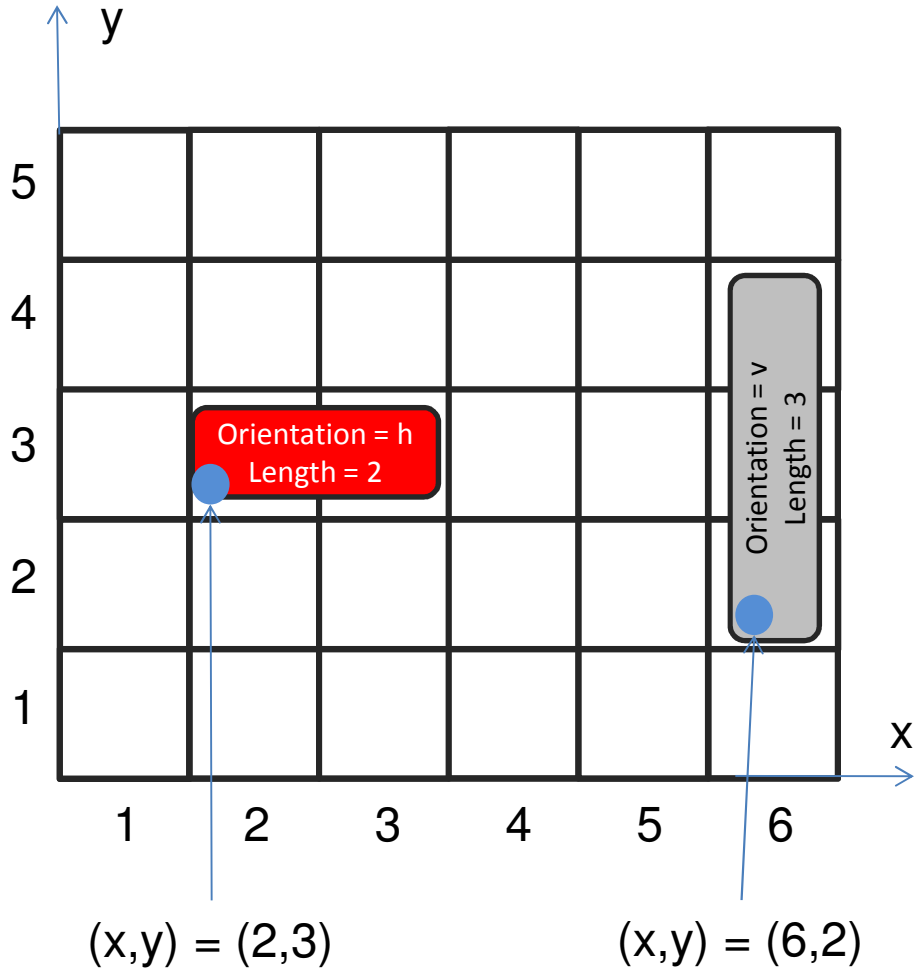
A block

- is always rectangular
- has an id (0-based)
- has a position (x, y) in the matrix defined by the left bottom corner (= blue circle) of the block
- has a length
- has a width, which is always one

A block's orientation is either vertical („v“) or horizontal („h“).

You can move

- vertical blocks only vertically: up (positive number) or down (negative number)
- horizontal blocks only horizontally: right (positive number) or left (negative number)



Level 1

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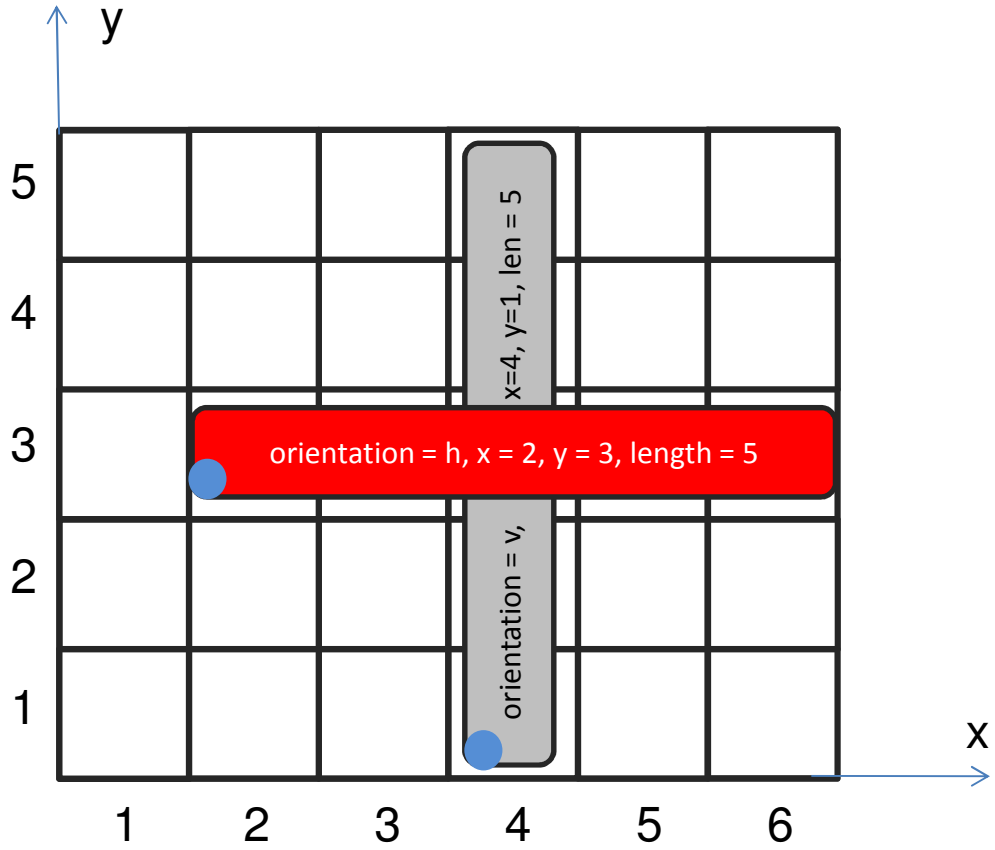
Question: Do two blocks overlap?

Input: block1 block2
block1 = id orientation x y length
block2 = id orientation x y length

id … unique id of the block
orientation … “h“ (horizontal) or “v“ (vertical)
x … distance to origin – see blue circle
y … distance to origin – see blue circle
length … length of the block

Output: true … when the blocks overlap
false … otherwise

Example:
Input: 0 h 2 3 5 1 v 4 1 5
Output: true



Initial Input for following Levels

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InitialGameSetup = width height numberOfBlocks { id orientation x y length }

width … width of the matrix
height … height of the matrix
id … id of the block
orientation … “h“ (horizontal) or “v“ (vertical)
x … distance to origin – see blue circle
y … distance to origin – see blue circle
length … length of the block

The input is always valid, i.e.
- the input corresponds to the definition above
- all blocks are within the width and height of the matrix
- there are no overlapping blocks