Level 5

> Level 5

Hotspots - extended

We extend a bit the definitions from Level 4 and lift some restrictions

Hotspot:

- Flat connected area of arbitrary shape on top of a building (i.e. NOT on the ground)
- Covered by one or more squares of size S x S
  (S given for each test case. Squares can overlap, of course.)

> Level 5

Buildings:

- Can have any ground shape.
- Occupy cells of the same height (i.e. adjacent cells with different heights are part of different buildings).
- If two cells with the same height share an edge they belong to the same building (while sharing just corners is not sufficient).

As a result of these relaxations, one building can host zero or multiple hotspots. We need to group together cells that can belong to the same hotspot and report the hotspot center cell as defined in level 4.

Note: The hotspot center cell has to be on the building itself, otherwise the hotspot is invalid and must be ignored. (i.e. no floating centers)

> Level 5

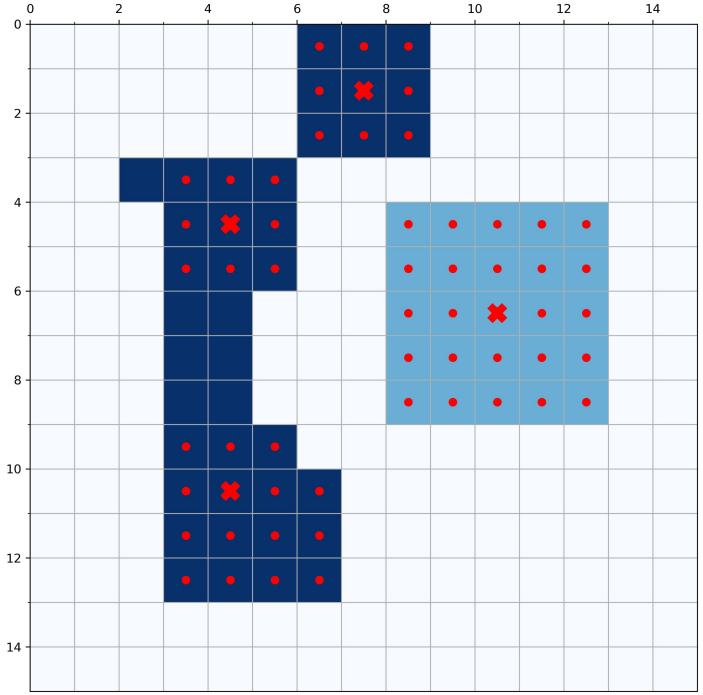
Bounding boxes are defined as the **smallest rectangle** with sides parallel to the coordinate system in which the **hotspot fits entirely**.

Note: The **center cell of the bounding box has to be on the building itself**, otherwise the hotspot is invalid and should be **ignored**. (i.e. no floating centers)

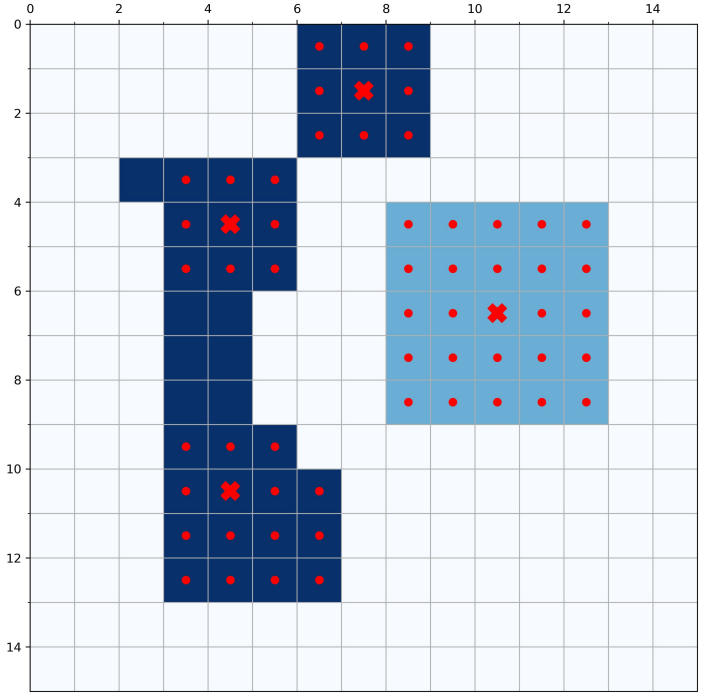
Level 5

Example

Consider S=3
Red dots are the cells that belong to a hotspot.
There are four hotspots, two on the dark blue elongated building, one on the light blue building and one on the square dark blue building on top of the level.



CODING CONTEST.org > Level 5



Sample input:

`level5_0.in`

Output:

0 1 7 1 4 4 2 6 10 3 10 4

Input format:
<number_of_rows><number_of_columns> <S>
<height> <height> ....
<height> <height> ....
....

Output: Same format as level 4