International Coding Contest
16th November 2018

event organizer

Catalysts

> Intro

December 2020
location: classified
G13 summit

A crucial turning point in history is expected!

BUT: The atmosphere is heated up. Attacks on life of the leaders are very likely!

Attacks must be prevented in any case. To fail is not an option!

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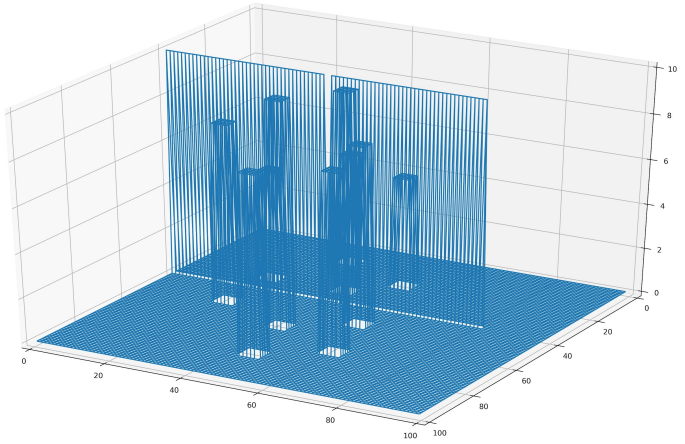
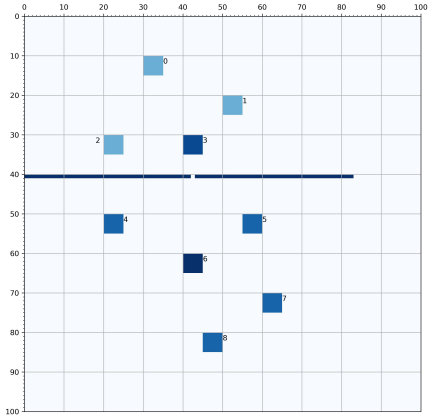
Your task



- Secure the summit by showing where possible hazard zones - tall rooftops with large overviews - are
- Drones delivered a very accurate 3d point data set of the wider area around the summit
- Your goal is to assess the security threats and make recommendations based on this data set



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The Skyline and Security

Tverskaya street- Both hotels are situated on the famous Tverskaya street in the middle of Moscow.
A wide, open street with mostly low-rise buildings, the Tverskaya street poses many difficulties when it comes to providing security for the transport of 13 heads of state from their hotels to where the summit will take place.

Level 1

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> Level 1

You are provided a rudimentary 2D representation of the site plan

Task for Level 1:

Output the height of each building in ascending order

> Level 1

- The world is a 2D cell grid
- A building spans one or more cells, having a certain, constant, height
- The ground height is zero
- Given a site plan, output all the different building heights in ascending order
- Multiple occurrences of the same height have to be output just once

> Level 1

Input format.

<number_of_rows> <number_of_columns>
<height> <height> ....
<height> <height> ....
....

Example: (The site plan has 4 rows with 6 columns and there are 2 buildings with height 1, 1 with height 2, and 1 with height 3)

4 6
0 0 1 1 1 0
0 2 0 0 3 3
0 2 0 0 3 3
0 0 1 0 0 0

output:
1 2 3

The heights are non negative integers. The ground has height 0, thus any positive height denotes a building. There is one site plan per test case.

> Level 1

Output format.

<height0> <height1> <height2> ... (sorted ascending, ignore duplicates)

0 (if there are no buildings)