

302. Smallest Rectangle Enclosing Black Pixels Premium

Hard Topics Companies

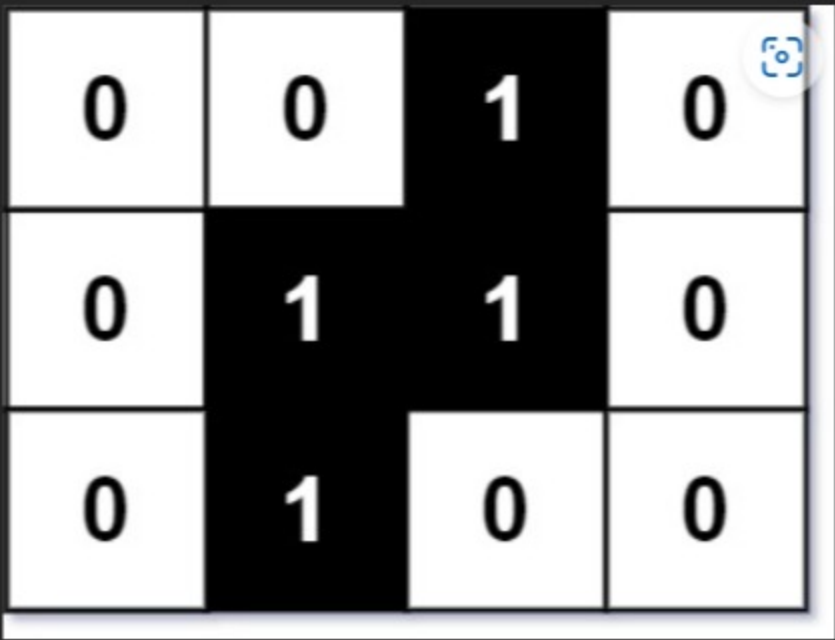
You are given an $m \times n$ binary matrix `image` where `0` represents a white pixel and `1` represents a black pixel.

The black pixels are connected (i.e., there is only one black region). Pixels are connected horizontally and vertically.

Given two integers `x` and `y` that represents the location of one of the black pixels, return *the area of the smallest (axis-aligned) rectangle that encloses all black pixels*.

You must write an algorithm with less than $O(mn)$ runtime complexity

Example 1:



Input: `image = [[\"0\",\"0\",\"1\",\"0\"],[\"0\",\"1\",\"1\",\"0\"],[\"0\",\"1\",\"0\",\"0\"]`, `x = 0`, `y = 2`
Output: `6`

Example 2:

Input: `image = [[\"1\"]]`, `x = 0`, `y = 0`
Output: `1`

Constraints:

- `m == image.length`
- `n == image[i].length`
- `1 <= m, n <= 100`
- `image[i][j]` is either `'0'` or `'1'`.
- `0 <= x < m`
- `0 <= y < n`
- `image[x][y] == '1'`.
- The black pixels in the `image` only form **one component**.

Seen this question in a real interview before? 1/5

Yes No

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