

# Last Day Where You Can Still Cross

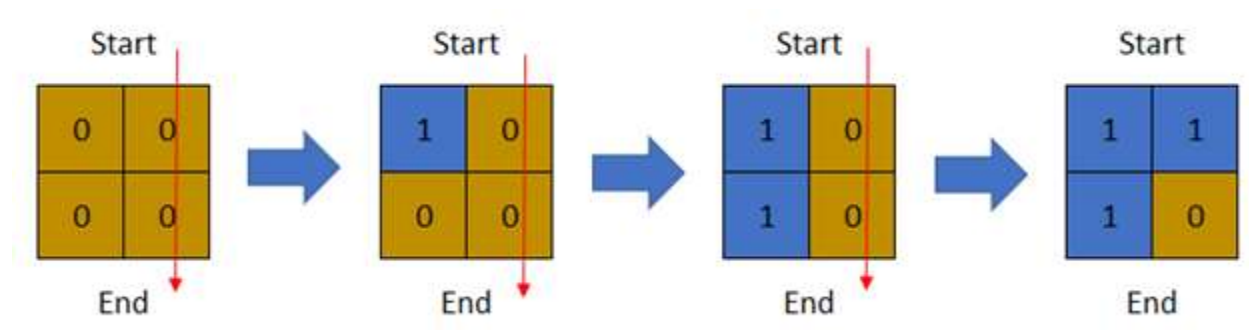
There is a **1-based** binary matrix where 0 represents land and 1 represents water. You are given integers row and col representing the number of rows and columns in the matrix, respectively.

Initially on day 0, the **entire** matrix is **land**. However, each day a new cell becomes flooded with **water**. You are given a **1-based** 2D array cells, where cells[i] = [r<sub>i</sub>, c<sub>i</sub>] represents that on the i<sup>th</sup> day, the cell on the r<sub>i</sub><sup>th</sup> row and c<sub>i</sub><sup>th</sup> column (**1-based** coordinates) will be covered with **water** (i.e., changed to 1).

You want to find the **last** day that it is possible to walk from the **top** to the **bottom** by only walking on land cells. You can start from **any** cell in the top row and end at **any** cell in the bottom row. You can only travel in the **four** cardinal directions (left, right, up, and down).

Return the **last** day where it is possible to walk from the **top** to the **bottom** by only walking on land cells.

**Example 1:**



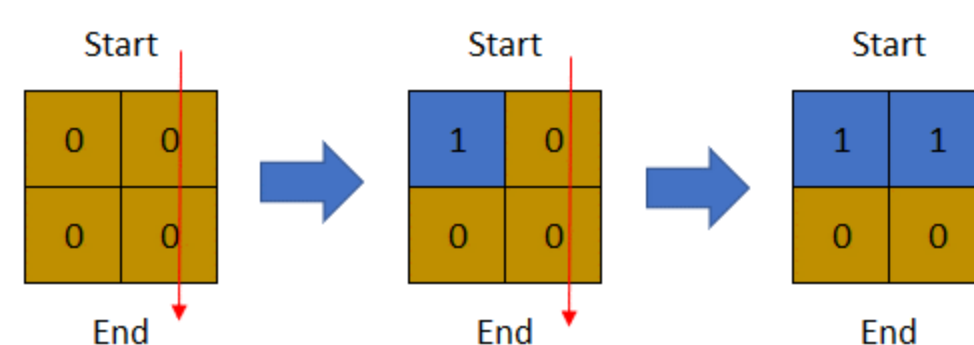
**Input:** row = 2, col = 2, cells = [[1,1],[2,1],[1,2],[2,2]]

**Output:** 2

**Explanation:** The above image depicts how the matrix changes each day starting from day 0.

The last day where it is possible to cross from top to bottom is on day 2.

**Example 2:**



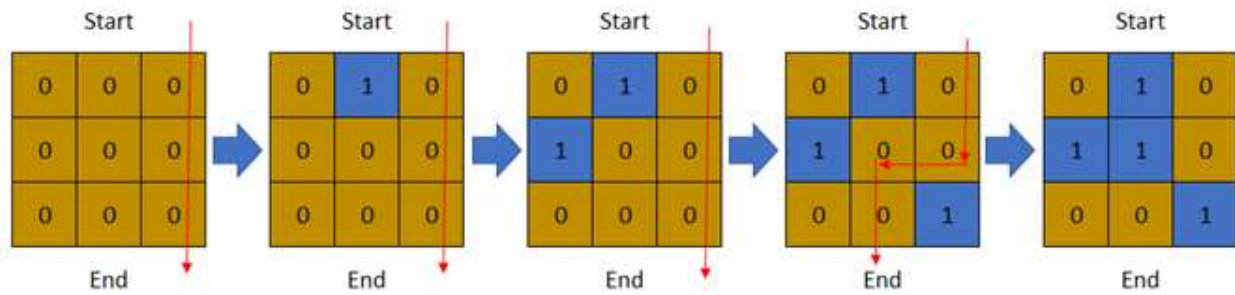
**Input:** row = 2, col = 2, cells = [[1,1],[1,2],[2,1],[2,2]]

**Output:** 1

**Explanation:** The above image depicts how the matrix changes each day starting from day 0.

The last day where it is possible to cross from top to bottom is on day 1.

### Example 3:



**Input:** row = 3, col = 3, cells = [[1,2],[2,1],[3,3],[2,2],[1,1],[1,3],[2,3],[3,2],[3,1]]

**Output:** 3

**Explanation:** The above image depicts how the matrix changes each day starting from day 0.

The last day where it is possible to cross from top to bottom is on day 3.

### Constraints:

- $2 \leq \text{row}, \text{col} \leq 2 * 10^4$
- $4 \leq \text{row} * \text{col} \leq 2 * 10^4$
- $\text{cells.length} == \text{row} * \text{col}$
- $1 \leq r_i \leq \text{row}$
- $1 \leq c_i \leq \text{col}$
- All the values of cells are **unique**.