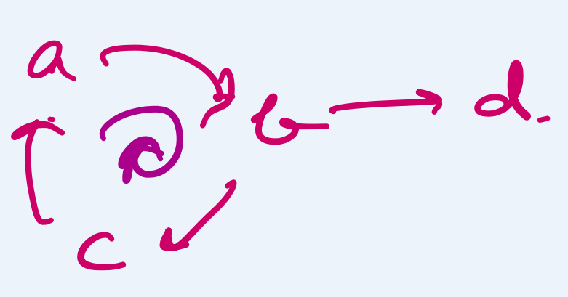
Wednesday, 6 October 2021 8:37 PM

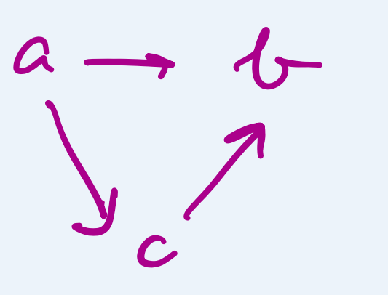
processed

a → b → c → g

Q isCyclic() true →



false



x x

Q Given a graph, whether it is a tree or not ??

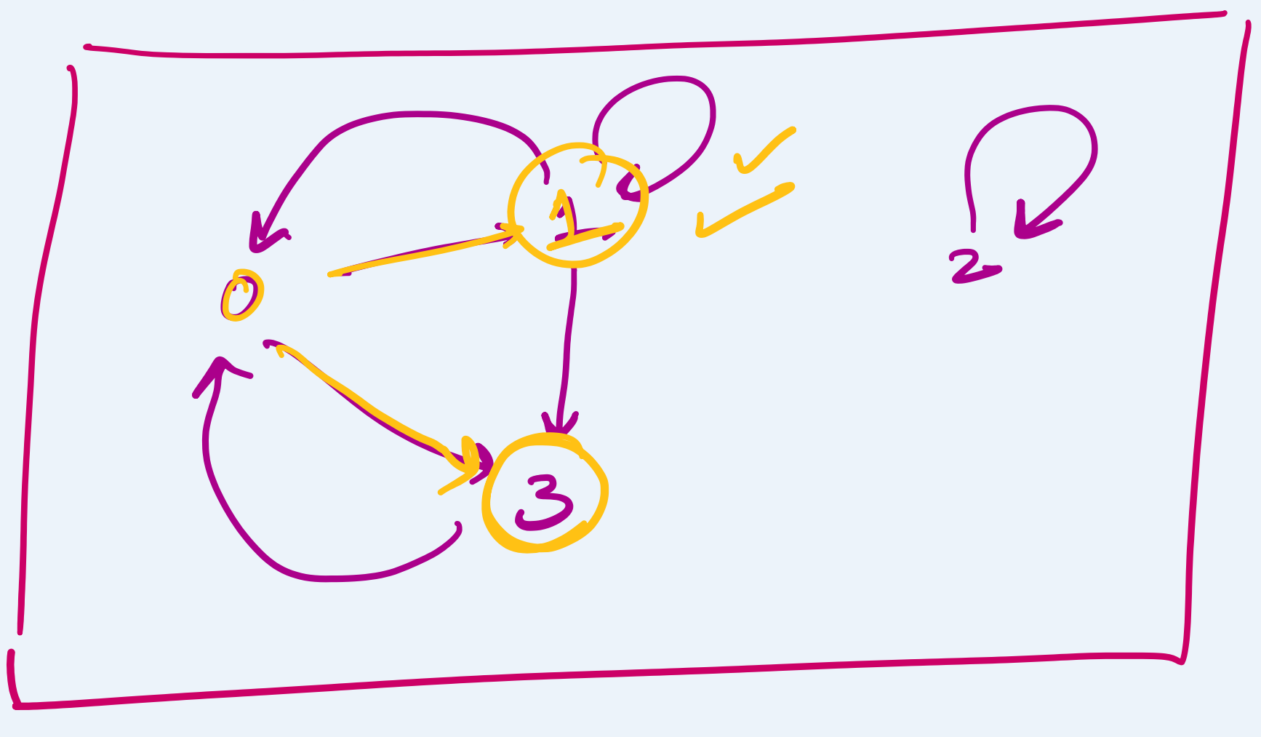
For a graph to be a tree:-

① Connected

② No cycles.

Q [1, 3], [3, 0, 1], [2], [0]

0 1 2 3



find no. of connected components.

If (cc = = 1) → ans tree

else (cc >= 2) → false

Q DAG Given (Homework problem)

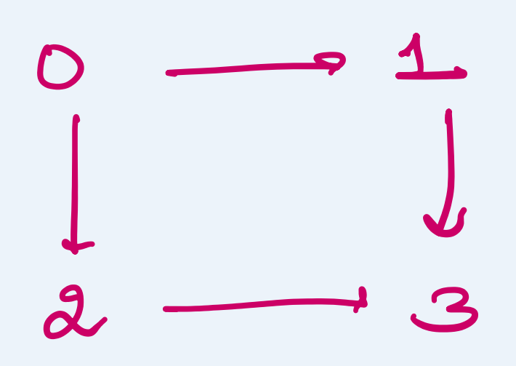
(Directed Acyclic graph)

nodes labelled from 0 → n-1

find all possible paths from node 0 to node n-1.

Eg: graph = [[1, 2], [3], [3], [ ]]

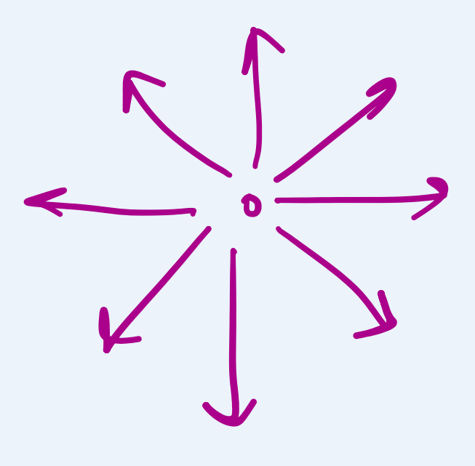
0 1 2 3



ans → [[0, 1, 3], [0, 2, 3]]

Q Given a m x n matrix 2D matrix (grid)

binary values



cell → 0 (water)

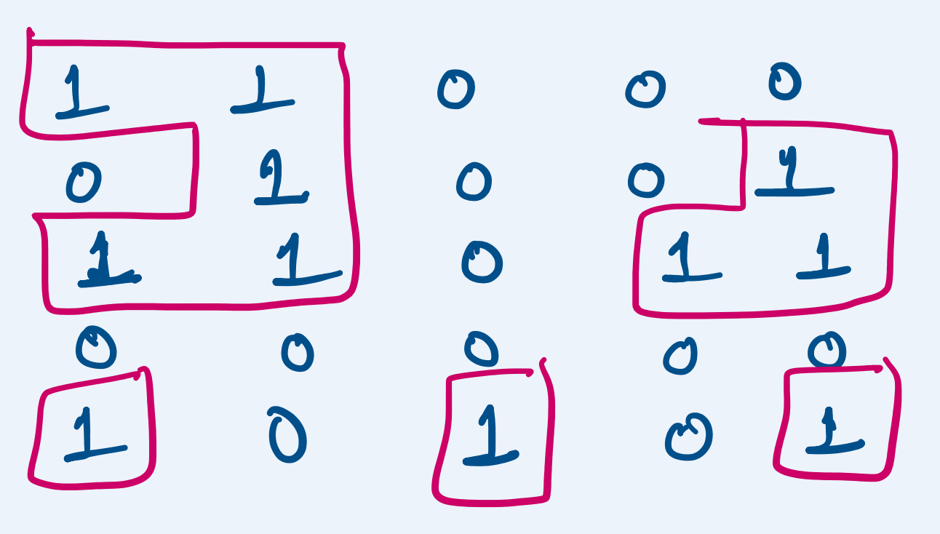
cell → 1 (land)

return the no. of islands.

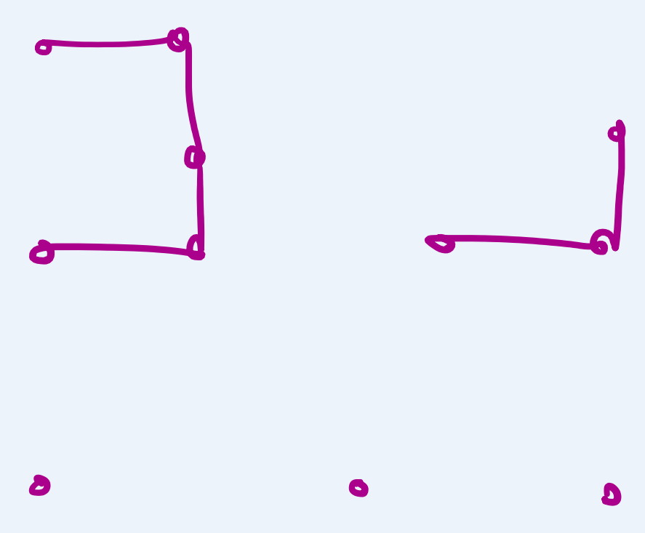
An island is surrounded by water and is formed by connecting adjacent lands horizontally | vertically.

continuous streak of land.

Eg ①



1 1 0 0 0
0 1 0 0 1
1 1 0 1 1
0 0 0 0 0
1 0 1 0 1



ans → ⑤

Find the no. of connected components.

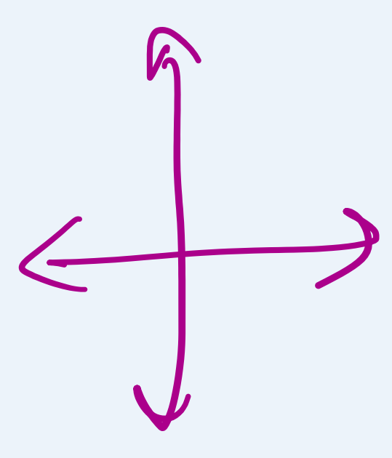
(BFS | DFS)

Q Given a 2-D board, contains 'X' & 'O'.

I/P →

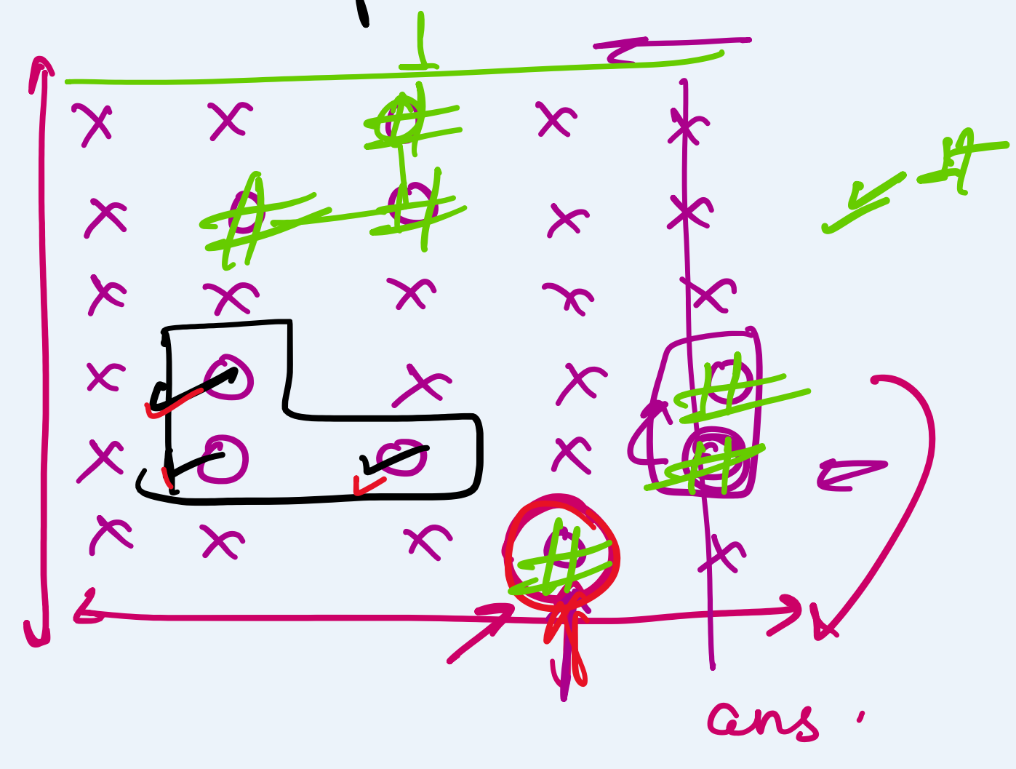
x x x x
x o o x
x x o x
x o x x

If there is a streak of 0's which can be surrounded by 'x' on al sides, then it can be captured and converted into 'x'.



→ which streak of 0's can be captured & return the output matrix.

Eg:



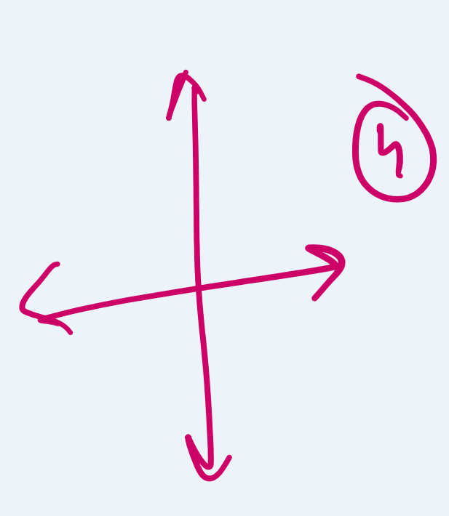
Trigger DFS/BFS from the zeroes on the boundary.

ans.

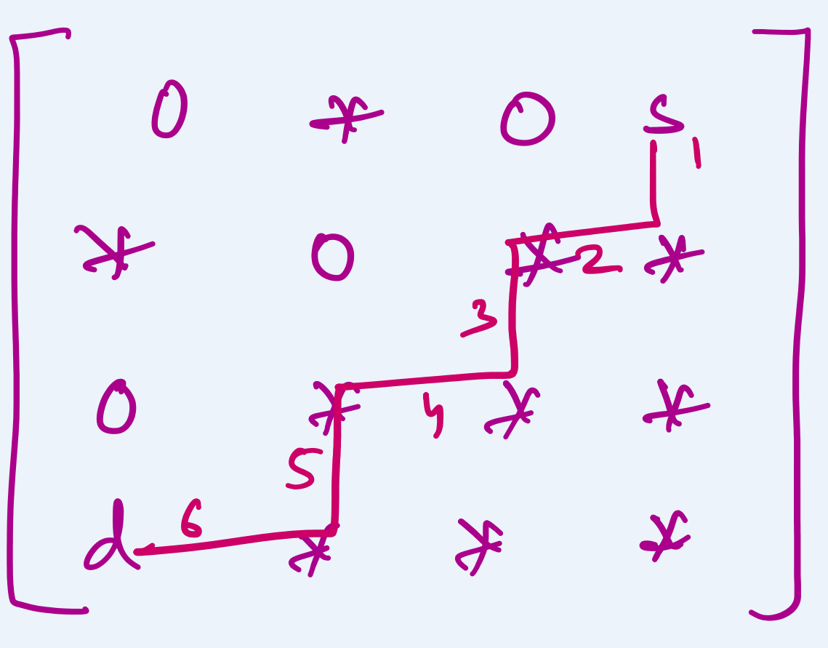
x x 0 x x
x 0 0 x x
x x x x x
x x x x 0
x x x * 0
x x x 0 x

Q Given a m x n matrix,

s: source (only 1)
d: destination (only 1)
*: safe
0: unsafe



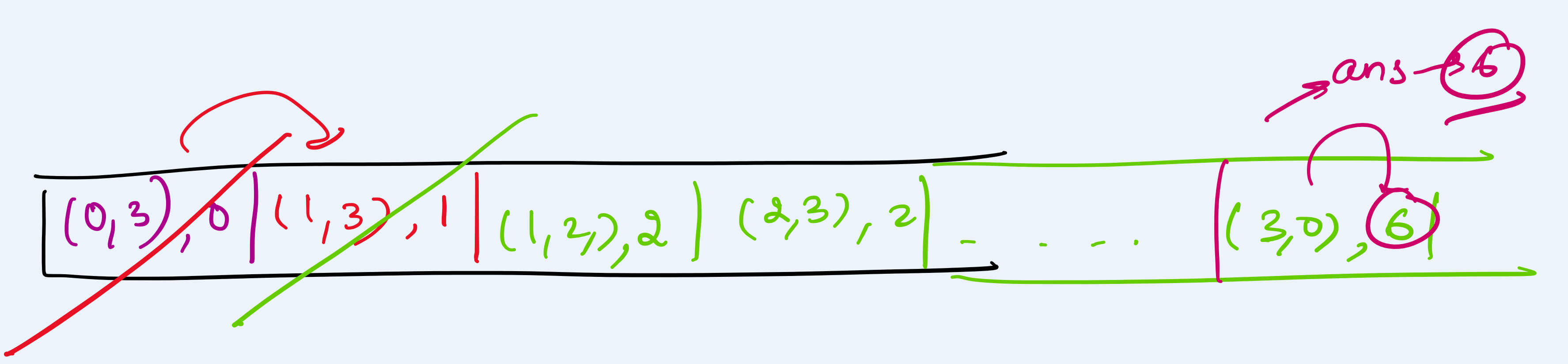
shortest path from s to d.



0 * 0 s
* 0 * *
0 * * *
d * * *

ans → ⑥

BFS → shortest path



(0,3), 0 | (1,3), 1 | (1,2), 2 | (2,3), 2 | . . . . | (3,0), ⑥

ans → ⑥