Assignment VI
Lab MC504

Send your assignment solution to mc504lab@gmail.com.
Deadline: 17.02.2021, 12 midnight.
Put all files into one folder, create a zip and name it as <**RollNo>_<Assignment_<No>** and mention the files name as: Q1.c, Q2.c and so on. In each file please mention your roll number.
Subject of mail should be: <**RollNo>_Assignment_<No>**. **For example : 1911MC04_Assignment_II.**
You have to take inputs from the user. Otherwise marks (40%) will be deducted.

1Q.

You are given a NxM matrix of size that contains the digits *0*, *1*, or *2* only. Where 1's represents good people, 2's represent bad people and 0's are the dead cells in the matrix. All the cells that contain *1* and are adjacent([i-1,j], [i+1,j], [i,j-1], [i,j+1]) to any cell that contains *2* will be converted from *1* to *2*, simultaneously in *1* second. Write a program to find the minimum time to convert all the cells having value *1* to *2*.

Input format

- First line: Two space-separated integers *N* and *M*
- *N x M matrix.*

Output format

Print the minimum time to convert all the cells having value *1* to *2*.

If not possible then print -1.

Constraints

1<=N, M <=10^3

Sample Input	**SAMPLE OUTPUT**
3 5	2
2 1 0 2 1	

1 0 1 2 1

1 0 0 2 1

Explanation

Row number started from 1, for the above example.

If you start from the cell [1,1],[1,4] or [3,4] and travel to [2,1], converting all possible ones then the cost will be 2 which is the maximum of all possible journeys.

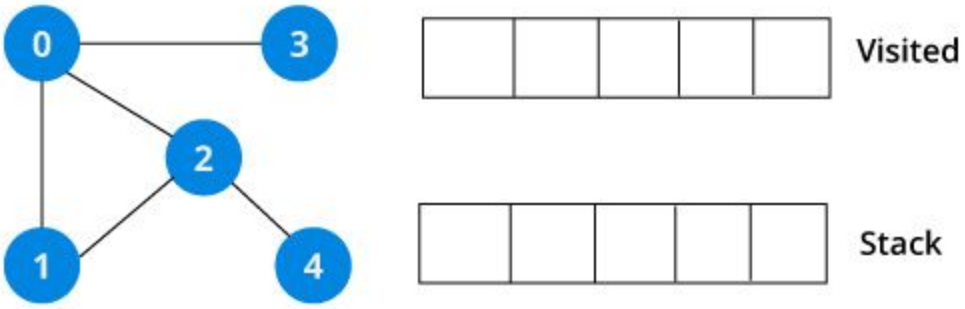
Hint

Create a distance matrix and compute the distance of all the Good People from the closest Bad People

2Q.

1. Start by putting any one of the graph's vertices on top of a stack.
2. Take the top item of the stack and add it to the visited list.
3. Create a list of that vertex's adjacent nodes. Add the ones which aren't in the visited list to the top of the stack.
4. Keep repeating steps 2 and 3 until the stack is empty.
5. Print the final visited list.

Implement the above algorithm using C.


0
3
2
1
4
Visited
Stack