from collections import deque

class Solution:

def solve(self, board: List[List[str]]) -> None:

"""

Do not return anything, modify board in-place instead.

"""

o = "O"

n = len(board)

m = len(board[0])

Q = deque()

for i in range(n):

if board[i][0] == o:

Q.append((i,0))

if board[i][m-1] == o:

Q.append((i, m-1))

for j in range(m):

if board[0][j] == o:

Q.append((0,j))

if board[n-1][j] == o:

Q.append((n-1, j))

def inBounds(i,j):

return (0 <= i < n) and (0 <= j < m)

while Q:

i,j = Q.popleft()

board[i][j] = "#"

for ii, jj in [(i+1, j), (i-1, j), (i, j+1), (i, j-1)]:

if not inBounds(ii, jj):

continue

if board[ii][jj] != o:

continue

Q.append((ii,jj))

board[ii][jj] = '#'

for i in range(n):

for j in range(m):

if board[i][j] == o:

board[i][j] = 'X'

elif board[i][j] == '#':

board[i][j] = o