Surrounded Regions

For this problem the key idea is:
- Surrounded 'O's should be flipped to 'X'.
- Non surrounded 'O's (connected to the border) must remain 'O'.

Approach:
1. Mark border-connected regions:
   - Any 'O' on the border cannot be surrounded.
   - Perform DFS / BFS starting from all 'O's on the border and mark them temporarily (e.g 'T').
2. Flip surrounded regions:
   - Convert all remaining 'O's to 'X'.
3. Restore non-surrounded regions:
   - Convert all 'T's back to 'O'.

Algorithm:
1. Traverse the first and last rows and columns.
2. For each border cell with 'O', run DFS / BFS to mark all connected 'O' as 'T'.
3. Traverse the whole board:
   - Convert 'O' → 'X' (captured)
   - Convert 'T' → 'O' (safe).

Complexity:
- Time: O(m*n) (visit each cell at most once)
- Space: O(m*n) worst case recursion stack (DFS). BFS alternative can reduce stack overflow risk.