

Surrounded Regions

Given a matrix **mat** of size **N x M** where every element is either O or X.

Replace all O with X that are surrounded by X.

A O (or a set of O) is considered to be surrounded by X if there are X at locations just below, just above, just left and just right of it.

Example 1:

Input: n = 5, m = 4

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mat = {{ 'X', 'X', 'X', 'X'},
        {'X', 'O', 'X', 'X'},
        {'X', 'O', 'O', 'X'},
        {'X', 'O', 'X', 'X'},
        {'X', 'X', 'O', 'O'}}
```

Output: ans = {{ 'X', 'X', 'X', 'X'},
 {'X', 'X', 'X', 'X'},
 {'X', 'X', 'X', 'X'},
 {'X', 'X', 'X', 'X'},
 {'X', 'X', 'O', 'O'}}

Explanation: Following the rule the above matrix is the resultant matrix.

Your Task:

You do not need to read input or print anything. Your task is to complete the function **fill()** which takes n, m and mat as input parameters and returns a 2D array representing the resultant matrix.

Expected Time Complexity: $O(n*m)$

Expected Auxiliary Space: $O(n*m)$

Constraints:

$1 \leq n, m \leq 500$