Cavity Map

locked

by Gera1d

Problem Submissions Leaderboard

You are given a square map of size $n \times n$. Each cell of the map has a value denoting its depth. We will call a cell of the map a *cavity* if and only if this cell is not on the border of the map and each cell adjacent to it has *strictly smaller depth*. Two cells are adjacent if they have a common side (edge).

You need to find all the cavities on the map and depict them with the uppercase character **X**.

Input Format

The first line contains an integer, n, denoting the size of the map. Each of the following n lines contains n positive digits without spaces. Each digit (1-9) denotes the depth of the appropriate area.

Constraints

$1 \leq n \leq 100$

Output Format

Output n lines, denoting the resulting map. Each cavity should be replaced with character X.

Sample Input

```
4
1112
1912
1892
1234
```

Sample Output

```
1112
1X12
18X2
1234
```

Explanation

The two cells with the depth of 9 fulfill all the conditions of the Cavity definition and have been replaced by X.

Submissions: 14
Max Score: 30
Difficulty: Easy

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Current Buffer (saved locally, editable) Python 3

```python
#!/bin/python3

import sys


n = int(input().strip())
grid = []
grid_i = 0
for grid_i in range(n):
   grid_t = str(input().strip())
   grid.append(grid_t)

```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code