

Problem 2373: Largest Local Values in a Matrix

Problem Information

Difficulty: Easy

Acceptance Rate: 87.77%

Paid Only: No

Tags: Array, Matrix

Problem Description

You are given an $n \times n$ integer matrix `grid`.

Generate an integer matrix `maxLocal` of size $(n - 2) \times (n - 2)$ such that:

* `maxLocal[i][j]` is equal to the **largest** value of the 3×3 matrix in `grid` centered around row $i + 1$ and column $j + 1$.

In other words, we want to find the largest value in every contiguous 3×3 matrix in `grid`.

Return `the generated matrix`.

Example 1:



Input: `grid = [[9,9,8,1],[5,6,2,6],[8,2,6,4],[6,2,2,2]]` **Output:** `[[9,9],[8,6]]` **Explanation:**
The diagram above shows the original matrix and the generated matrix. Notice that each value in the generated matrix corresponds to the largest value of a contiguous 3×3 matrix in `grid`.

Example 2:



Input: `grid = [[1,1,1,1,1],[1,1,1,1,1],[1,1,2,1,1],[1,1,1,1,1],[1,1,1,1,1]]` **Output:**
`[[2,2,2],[2,2,2],[2,2,2]]` **Explanation:** Notice that the 2 is contained within every contiguous 3×3

x 3 matrix in grid.

****Constraints:****

* `n == grid.length == grid[i].length` * `3 <= n <= 100` * `1 <= grid[i][j] <= 100`

Code Snippets

C++:

```
class Solution {
public:
    vector<vector<int>> largestLocal(vector<vector<int>>& grid) {

    }
};
```

Java:

```
class Solution {
    public int[][] largestLocal(int[][] grid) {

    }
}
```

Python3:

```
class Solution:
    def largestLocal(self, grid: List[List[int]]) -> List[List[int]]:
```