

# 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 x n` integer matrix `grid`.

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

\* `maxLocal[i][j]` is equal to the \*\*largest\*\* value of the `3 x 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 x 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 x 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

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]]:
```