Problem 840: Magic Squares In Grid

Problem Information

Difficulty: Medium
Acceptance Rate: 51.56%
Paid Only: No
Tags: Array, Hash Table, Math, Matrix

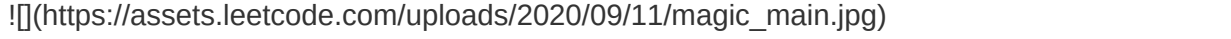
Problem Description

A `3 x 3` **magic square** is a `3 x 3` grid filled with distinct numbers **from** 1**to** 9 such that each row, column, and both diagonals all have the same sum.

Given a `row x col` `grid` of integers, how many `3 x 3` magic square subgrids are there?

Note: while a magic square can only contain numbers from 1 to 9, `grid` may contain numbers up to 15.

Example 1:



Input: grid = [[4,3,8,4],[9,5,1,9],[2,7,6,2]] **Output:** 1 **Explanation:** The following subgrid is a 3 x 3 magic square:

while this one is not:

In total, there is only one magic square inside the given grid.

Example 2:

Input: grid = [[8]] **Output:** 0

Constraints:

* `row == grid.length` * `col == grid[i].length` * `1 <= row, col <= 10` * `0 <= grid[i][j] <= 15`

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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