Problem 3546: Equal Sum Grid Partition I

Problem Information

Difficulty: Medium
Acceptance Rate: 42.14%
Paid Only: No
Tags: Array, Matrix, Enumeration, Prefix Sum

Problem Description

You are given an `m x n` matrix `grid` of positive integers. Your task is to determine if it is possible to make **either one horizontal or one vertical cut** on the grid such that:

* Each of the two resulting sections formed by the cut is **non-empty**. * The sum of the elements in both sections is **equal**.

Return `true` if such a partition exists; otherwise return `false`.

Example 1:

Input: grid = [[1,4],[2,3]]

Output: true

Explanation:

A horizontal cut between row 0 and row 1 results in two non-empty sections, each with a sum of 5. Thus, the answer is `true`.

Example 2:

Input: grid = [[1,3],[2,4]]

Output: false

Explanation:

No horizontal or vertical cut results in two non-empty sections with equal sums. Thus, the answer is `false`.

Constraints:

* `1 <= m == grid.length <= 105` * `1 <= n == grid[i].length <= 105` * `2 <= m * n <= 105` * `1 <= grid[i][j] <= 105`

Code Snippets

C++:

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

}
};
```

Java:

```
class Solution {
public boolean canPartitionGrid(int[][] grid) {

}
}
```

Python3:

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