Problem 694: Number of Distinct Islands

Problem Information

Difficulty: Medium
Acceptance Rate: 62.59%
Paid Only: Yes
Tags: Hash Table, Depth-First Search, Breadth-First Search, Union Find, Hash Function

Problem Description

You are given an `m x n` binary matrix `grid`. An island is a group of `1`'s (representing land) connected **4-directionally** (horizontal or vertical.) You may assume all four edges of the grid are surrounded by water.

An island is considered to be the same as another if and only if one island can be translated (and not rotated or reflected) to equal the other.

Return _the number of**distinct** islands_.

Example 1:

Input: grid = [[1,1,0,0,0],[1,1,0,0,0],[0,0,0,1,1],[0,0,0,1,1]] **Output:** 1

Example 2:

Input: grid = [[1,1,0,1,1],[1,0,0,0,0],[0,0,0,0,1],[1,1,0,1,1]] **Output:** 3

Constraints:

* `m == grid.length` * `n == grid[i].length` * `1 <= m, n <= 50` * `grid[i][j]` is either `0` or `1`.

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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