200.Number of Islands

问题描述：找出岛屿的数量，岛屿的定义：周围被‘0’包围的由‘1’组成的连通块

**Input:** **Input:**

11000 11110

11000 11010

00100 11000

00011 00000

**Output:** 3 **Output**:1

Keypoint：对访问过的位置进行标记

Solution:

class Solution {

public:

int numIslands(vector<vector<char>>& grid) {

if(grid.size() == 0 || grid[0].size() == 0) return 0;

int row = grid.size();

int col = grid[0].size();

int res = 0;

vector<vector<bool>> visited(row,vector<bool>(col,false));

for (int i = 0;i<row;i++){

for(int j = 0;j <col;j++){

if(grid[i][j] =='1' && !visited[i][j]){//检查小岛‘1‘是否被访问过，没有被访问则对四周进行访问

helper(grid,visited,i,j);

res ++ ;//每次递归寻找到一个岛屿

}

}

}

return res;

}

void helper(vector<vector<char>>& grid,vector<vector<bool>>& visited,int x, int y){

if(x<0 || x>=grid.size()) return;

if(y<0 || y>= grid[0].size()) return;//越界则返回

if(visited[x][y] || grid[x][y] == '0') return;//被访问过或者该点不是小岛则返回，

visited[x][y] = true;

helper(grid,visited,x-1,y);

helper(grid,visited,x+1,y);

helper(grid,visited,x,y-1);

helper(grid,visited,x,y+1);

}

};