Number of islands

class Solution {

int dir[][] = {{-1,0},{1,0},{0,-1},{0,1}};

boolean isValid(int i , int j, int r, int c) // to check new index I and j are valid or not

{

if(i>=0 && i<r && j>=0 && j<c)

return true;

return false;

}

void dfs(char grid[][], int r, int c, int i , int j) // depth first search to traverse connected nodes

{

grid[i][j] ='0';

for(int k=0;k<4; k++)

{

int newi = i + dir[k][0];

int newj = j + dir[k][1];

if(isValid(newi, newj, r,c)==true && grid[newi][newj]=='1')

{

dfs(grid,r,c,newi,newj);

}

}

}

public int numIslands(char[][] grid) {

int count = 0;

int r = grid.length;

if(r==0)

return count;

int c = grid[0].length;

for(int i=0; i< r;i++)

for(int j=0;j<c;j++)

{

if(grid[i][j] =='1')

{

dfs(grid,r,c, i, j) ;

count++;

}

}

return count;

}

}