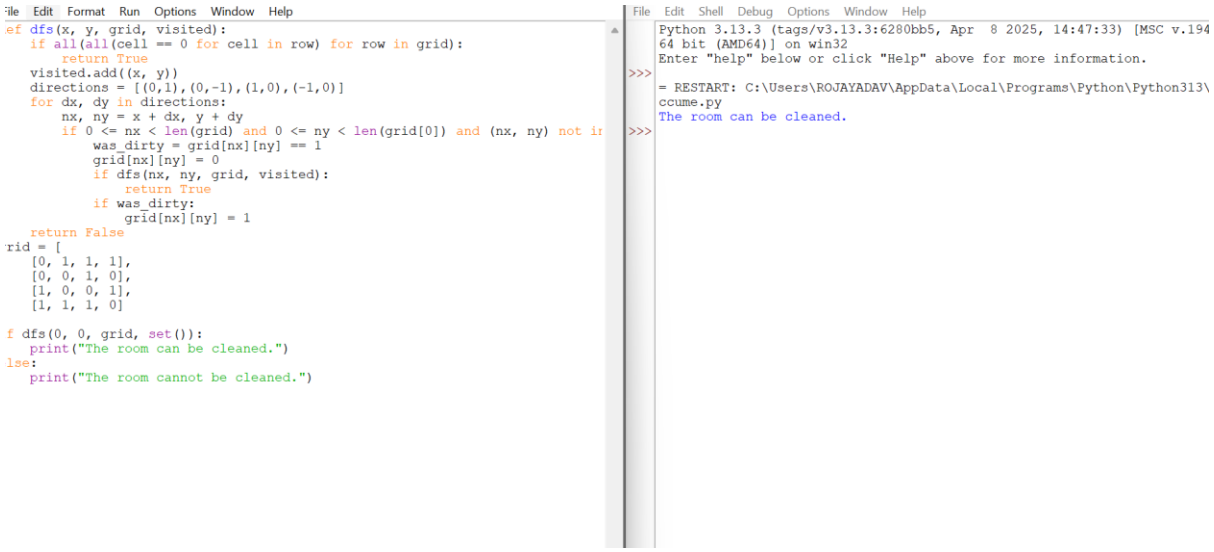
Write the python program for Vacuum Cleaner Problem.



```
File  Edit  Format  Run  Options  Window  Help
ef dfs(x, y, grid, visited):
    if all(all(cell == 0 for cell in row) for row in grid):
        return True
    visited.add((x, y))
    directions = [(0,1),(0,-1),(1,0),(-1,0)]
    for dx, dy in directions:
        nx, ny = x + dx, y + dy
        if 0 <= nx < len(grid) and 0 <= ny < len(grid[0]) and (nx, ny) not in
            was_dirty = grid[nx][ny] == 1
            grid[nx][ny] = 0
            if dfs(nx, ny, grid, visited):
                return True
            if was_dirty:
                grid[nx][ny] = 1
    return False
rid = [
    [0, 1, 1, 1],
    [0, 0, 1, 0],
    [1, 0, 0, 1],
    [1, 1, 1, 0]

f dfs(0, 0, grid, set()):
    print("The room can be cleaned.")
lse:
    print("The room cannot be cleaned.")
```

```
File  Edit  Shell  Debug  Options  Window  Help
Python 3.13.3 (tags/v3.13.3:6280bb5, Apr  8 2025, 14:47:33) [MSC v.194
64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more information.
>>>
= RESTART: C:\Users\ROJAYADAV\AppData\Local\Programs\Python\Python313\
ccume.py
The room can be cleaned.
>>>
```