EXP 6 :-

PROGRAM :-

class VacuumCleaner:

def \_\_init\_\_(self, room):

self.room = room

self.position = (0, 0)

self.cleaned\_positions = set()

def move(self, direction):

x, y = self.position

if direction == 'up' and x > 0:

self.position = (x - 1, y)

elif direction == 'down' and x < len(self.room) - 1:

self.position = (x + 1, y)

elif direction == 'left' and y > 0:

self.position = (x, y - 1)

elif direction == 'right' and y < len(self.room[0]) - 1:

self.position = (x, y + 1)

def clean(self):

self.cleaned\_positions.add(self.position)

def is\_cleaned(self):

return self.position in self.cleaned\_positions

def vacuum(self, moves):

for move in moves:

self.move(move)

self.clean()

def cleaned\_area(self):

return len(self.cleaned\_positions)

# Example usage

room = [

[0, 0, 0],

[0, 1, 0],

[0, 0, 0]

]

vacuum = VacuumCleaner(room)

vacuum.vacuum(['right', 'down', 'down', 'left', 'up'])

print(f"Cleaned positions: {vacuum.cleaned\_area()}")

OUTPUT :-

