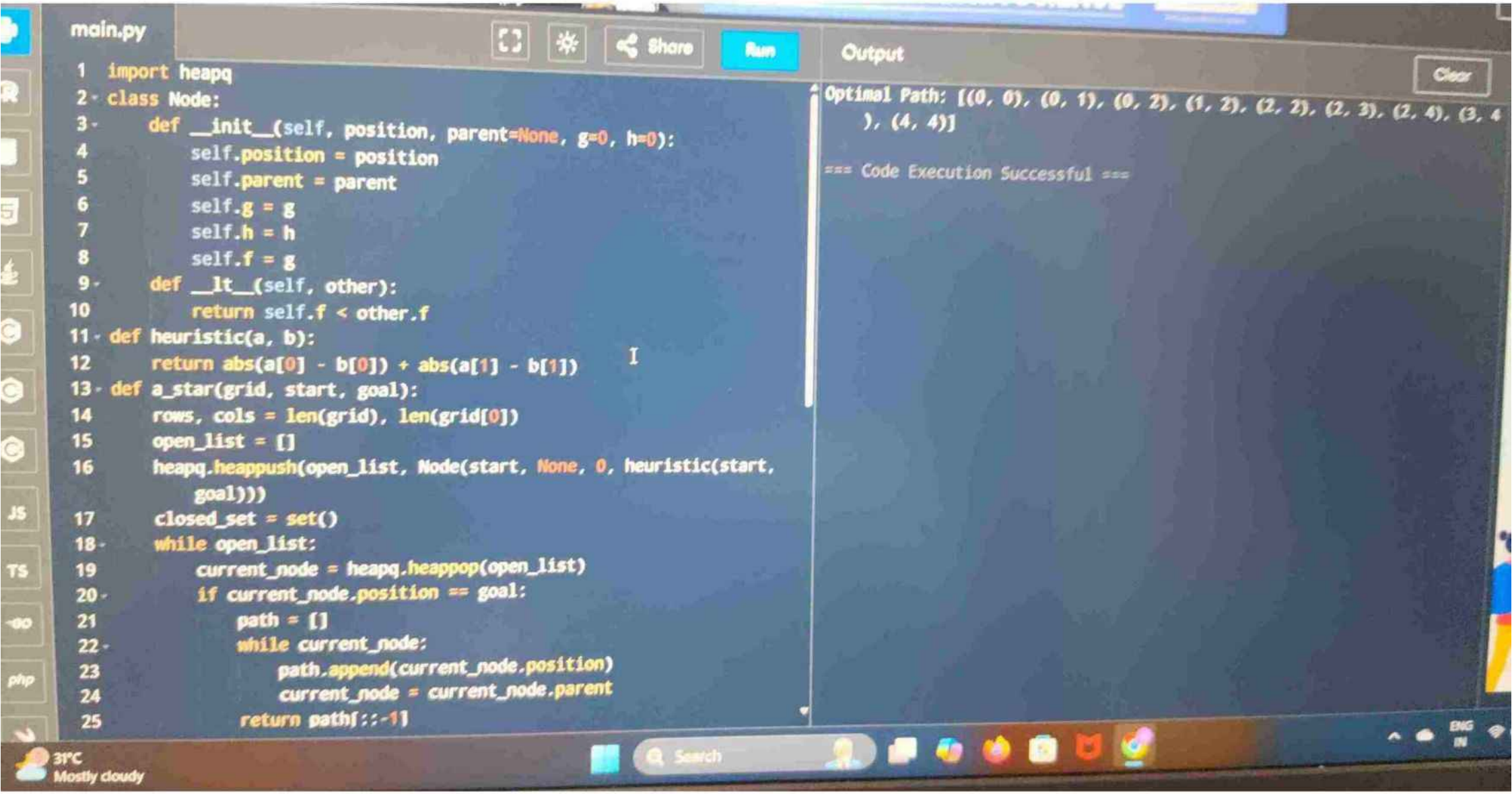
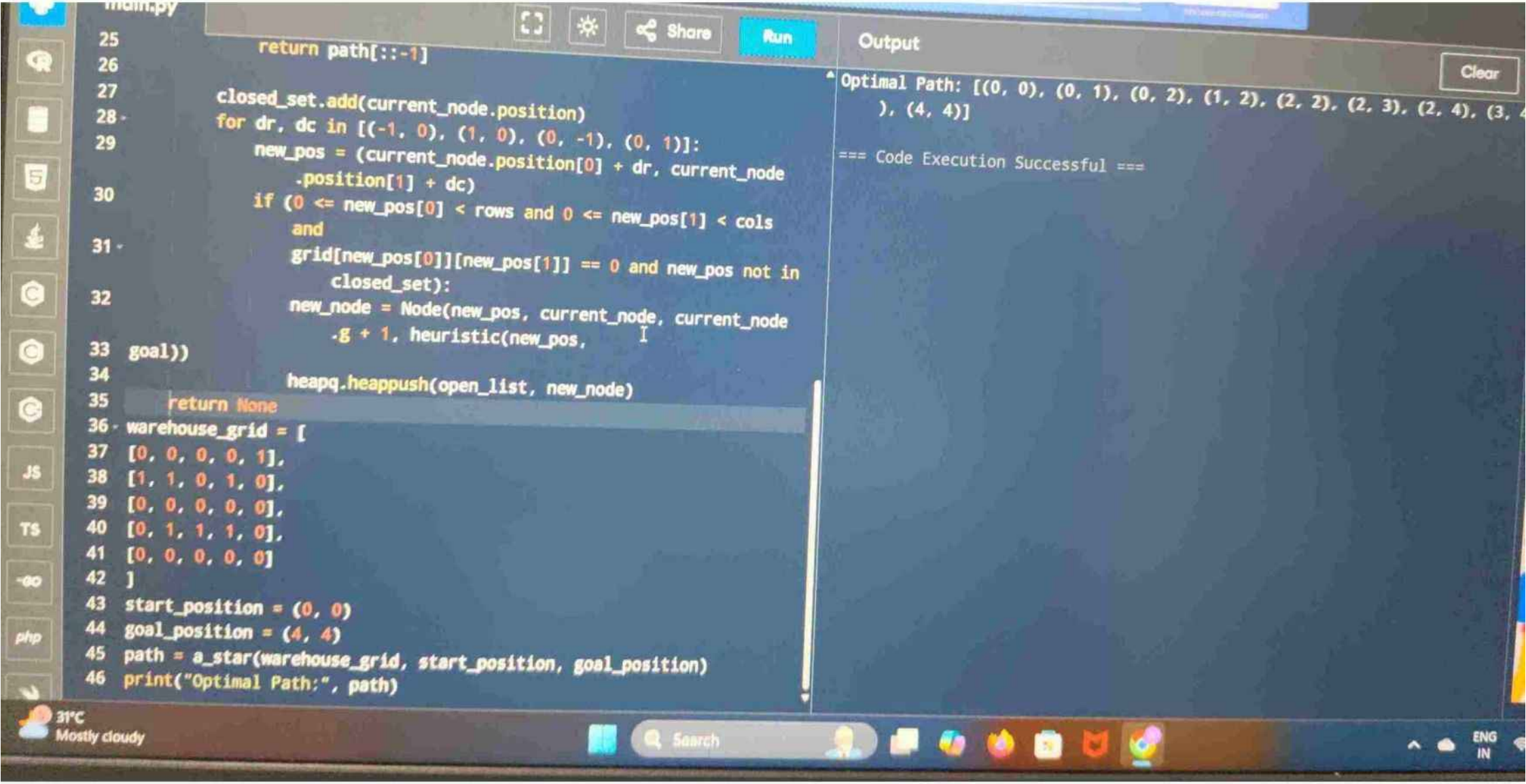

main.py
Share
Run
Output
Clear
import heapq
class Node:
def __init__(self, position, parent=None, g=0, h=0):
self.position = position
self.parent = parent
self.g = g
self.h = h
self.f = g
def __lt__(self, other):
return self.f < other.f
def heuristic(a, b):
return abs(a[0] - b[0]) + abs(a[1] - b[1])
def a_star(grid, start, goal):
rows, cols = len(grid), len(grid[0])
open_list = []
heapq.heappush(open_list, Node(start, None, 0, heuristic(start, goal)))
closed_set = set()
while open_list:
current_node = heapq.heappop(open_list)
if current_node.position == goal:
path = []
while current_node:
path.append(current_node.position)
current_node = current_node.parent
return path[::-1]
Optimal Path: [(0, 0), (0, 1), (0, 2), (1, 2), (2, 2), (2, 3), (2, 4), (3, 4), (4, 4)]
=== Code Execution Successful ===
31°C
Mostly cloudy
Search
ENG
IN


main.py
Share
Run
Output
Clear
return path[::-1]
closed_set.add(current_node.position)
for dr, dc in [(-1, 0), (1, 0), (0, -1), (0, 1)]:
new_pos = (current_node.position[0] + dr, current_node.position[1] + dc)
if (0 <= new_pos[0] < rows and 0 <= new_pos[1] < cols and grid[new_pos[0]][new_pos[1]] == 0 and new_pos not in closed_set):
new_node = Node(new_pos, current_node, current_node.g + 1, heuristic(new_pos, goal))
heapq.heappush(open_list, new_node)
return None
warehouse_grid = [
[0, 0, 0, 0, 1],
[1, 1, 0, 1, 0],
[0, 0, 0, 0, 0],
[0, 1, 1, 1, 0],
[0, 0, 0, 0, 0]
]
start_position = (0, 0)
goal_position = (4, 4)
path = a_star(warehouse_grid, start_position, goal_position)
print("Optimal Path:", path)
Optimal Path: [(0, 0), (0, 1), (0, 2), (1, 2), (2, 2), (2, 3), (2, 4), (3, 4), (4, 4)]
=== Code Execution Successful ===
31°C
Mostly cloudy
Search
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