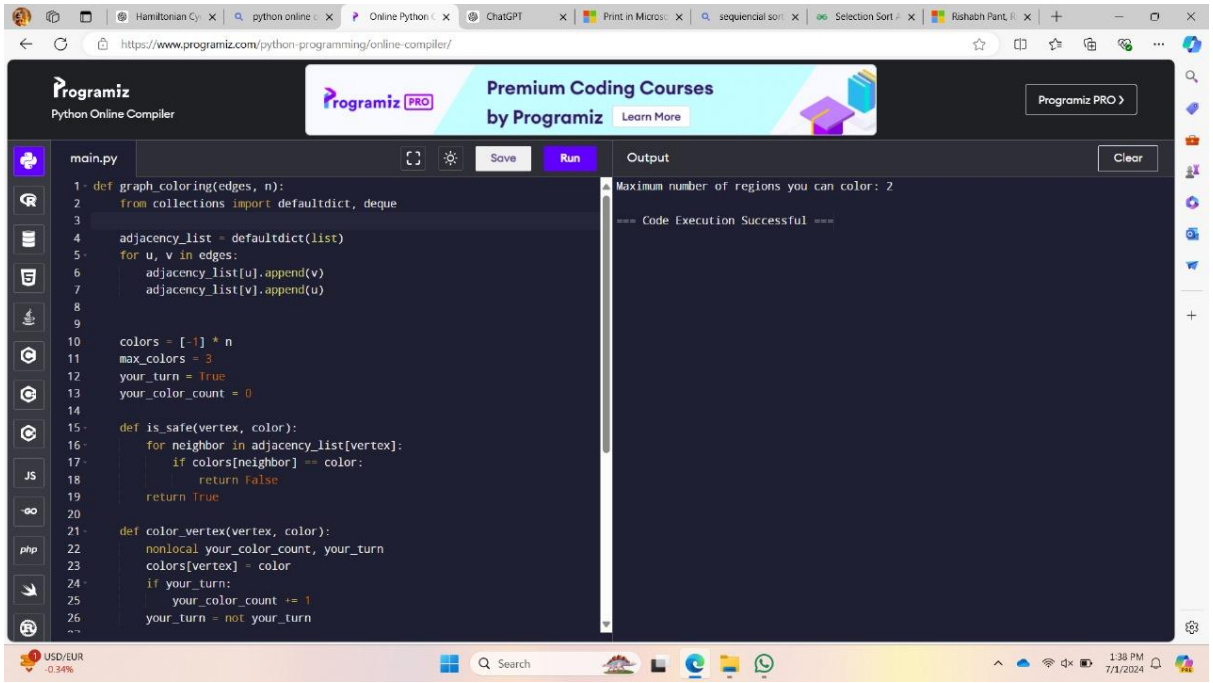
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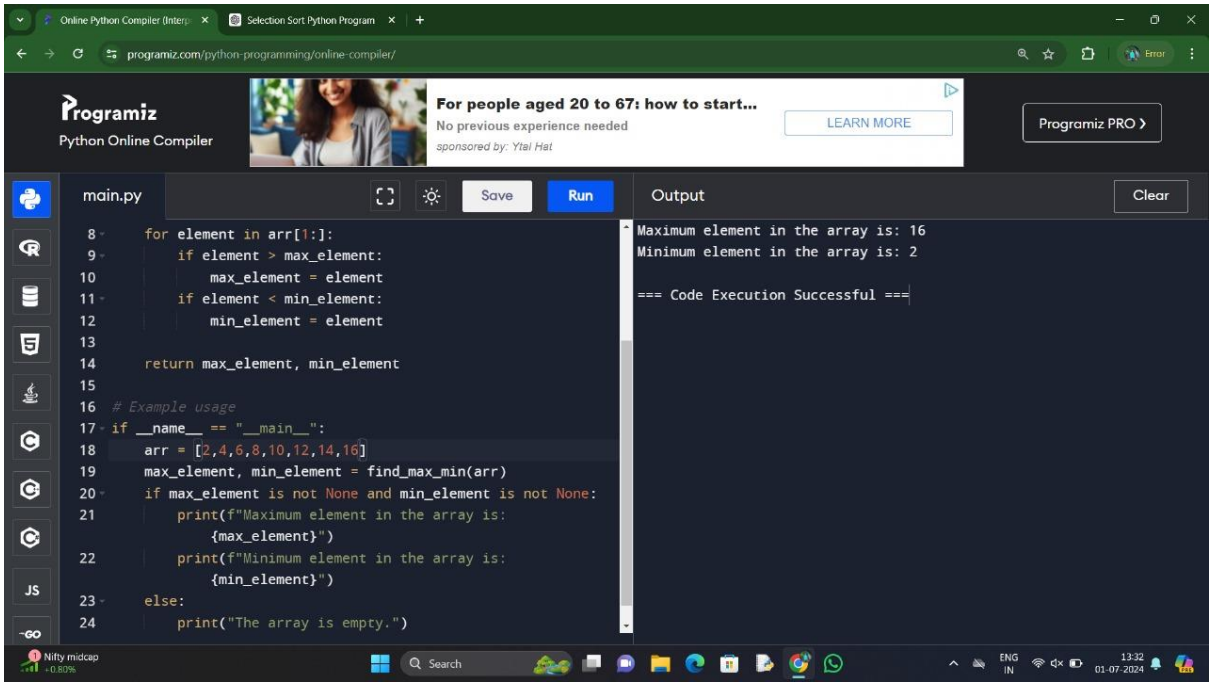
main.py
Save
Run
Output
Clear
def graph_coloring(edges, n):
from collections import defaultdict, deque
adjacency_list = defaultdict(list)
for u, v in edges:
adjacency_list[u].append(v)
adjacency_list[v].append(u)
colors = [-1] * n
max_colors = 3
your_turn = True
your_color_count = 0
def is_safe(vertex, color):
for neighbor in adjacency_list[vertex]:
if colors[neighbor] == color:
return False
return True
def color_vertex(vertex, color):
nonlocal your_color_count, your_turn
colors[vertex] = color
if your_turn:
your_color_count += 1
your_turn = not your_turn
Maximum number of regions you can color: 2
=== Code Execution Successful ===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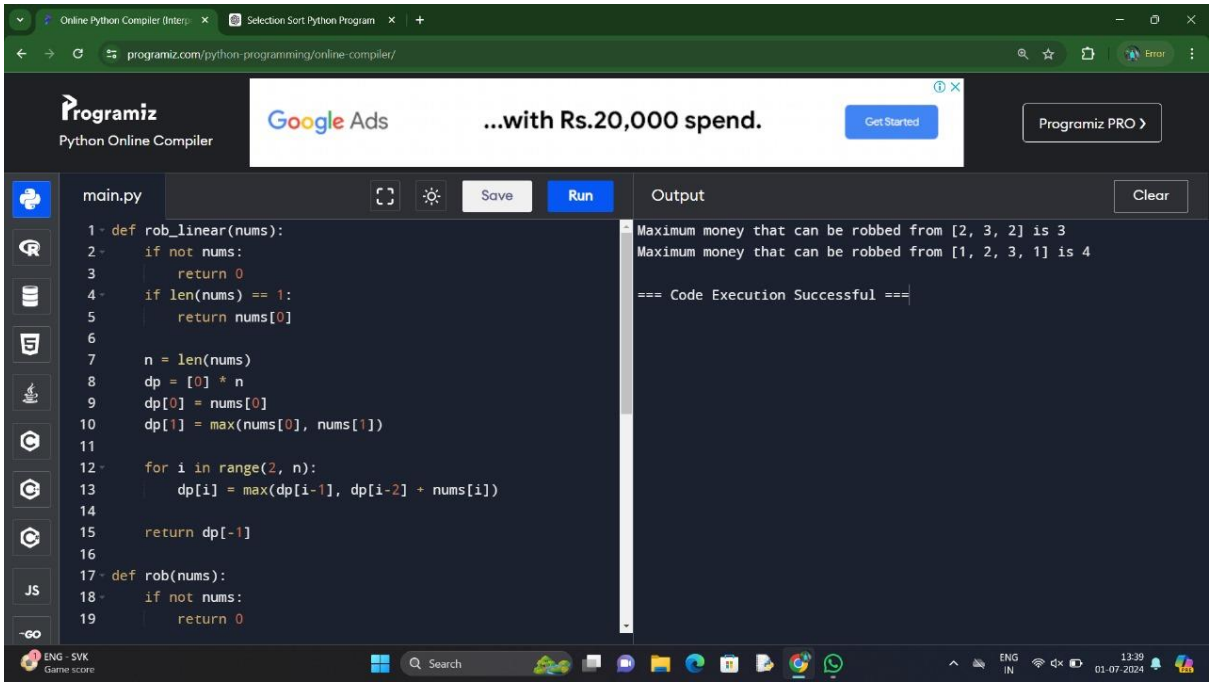
Output
Clear
for element in arr[1:]:
if element > max_element:
max_element = element
if element < min_element:
min_element = element
return max_element, min_element
# Example usage
if __name__ == "__main__":
arr = [2,4,6,8,10,12,14,16]
max_element, min_element = find_max_min(arr)
if max_element is not None and min_element is not None:
print(f"Maximum element in the array is:
{max_element}")
print(f"Minimum element in the array is:
{min_element}")
else:
print("The array is empty.")
Maximum element in the array is: 16
Minimum element in the array is: 2
=== Code Execution Successful ===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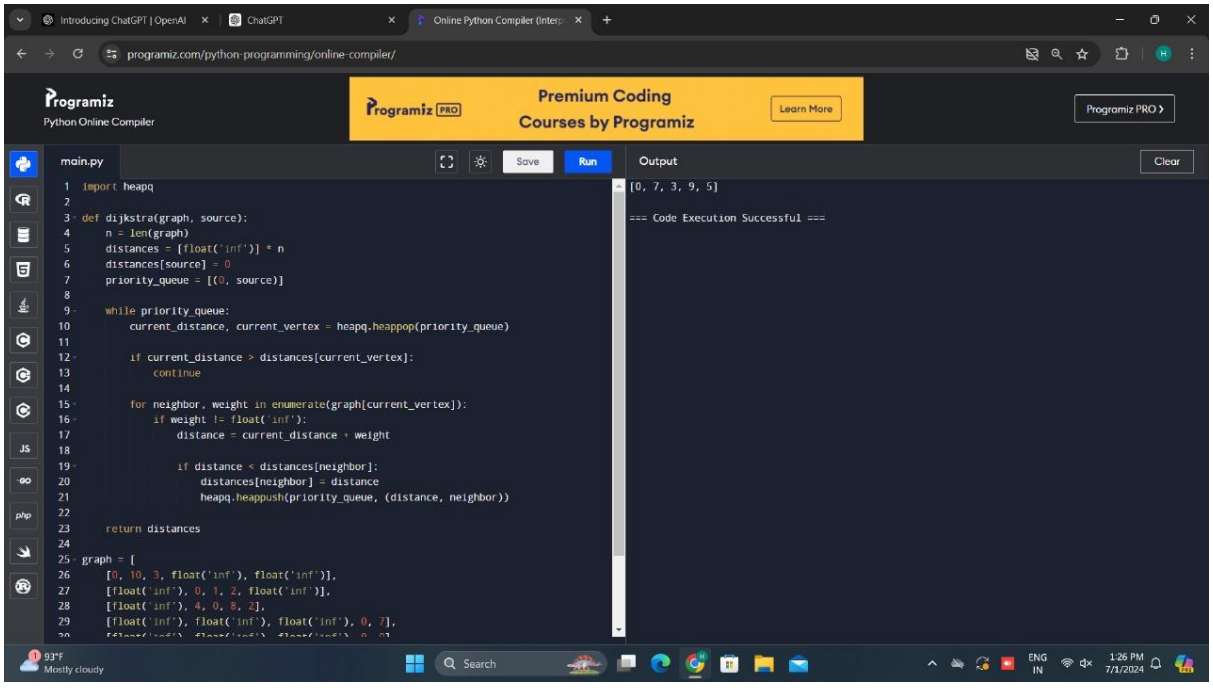
Save
Run
Output
Clear
def rob_linear(nums):
if not nums:
return 0
if len(nums) == 1:
return nums[0]
n = len(nums)
dp = [0] * n
dp[0] = nums[0]
dp[1] = max(nums[0], nums[1])
for i in range(2, n):
dp[i] = max(dp[i-1], dp[i-2] + nums[i])
return dp[-1]
def rob(nums):
if not nums:
return 0
Maximum money that can be robbed from [2, 3, 2] is 3
Maximum money that can be robbed from [1, 2, 3, 1] is 4
=== Code Execution Successful ===
ENG - SVK
Game score
Search
ENG
IN
13:39
01-07-2024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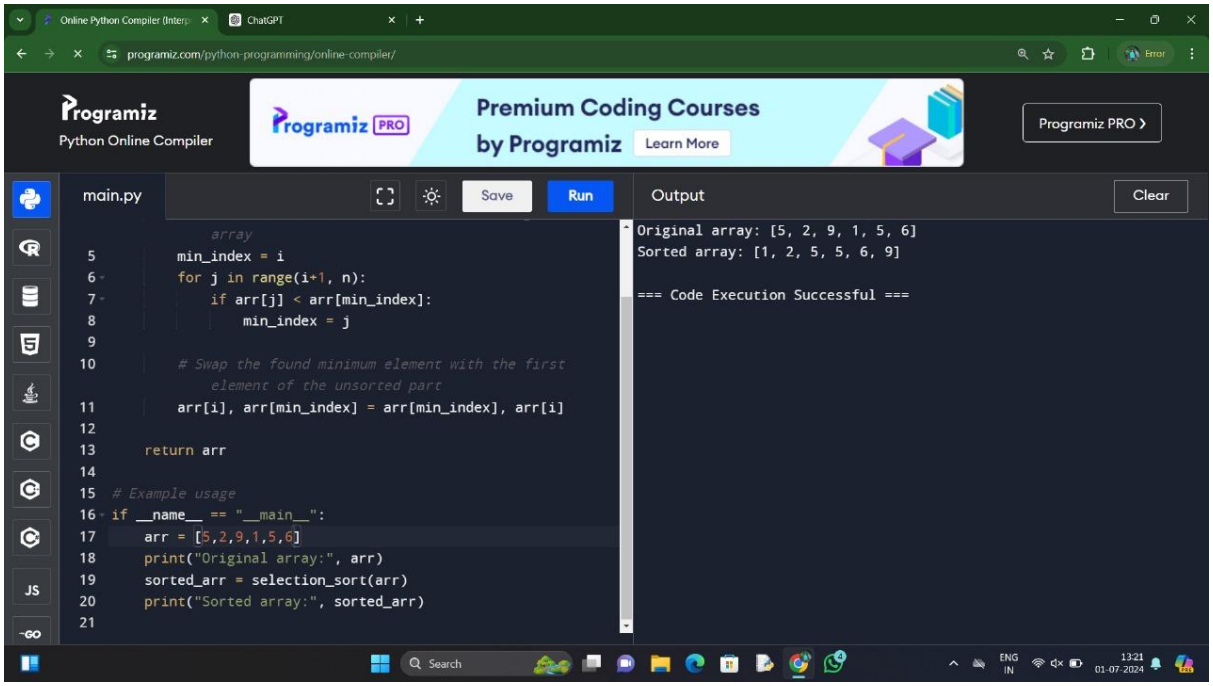
main.py
Save
Run
Output
Clear
import heapq
def dijkstra(graph, source):
n = len(graph)
distances = [float('inf')] * n
distances[source] = 0
priority_queue = [(0, source)]
while priority_queue:
current_distance, current_vertex = heapq.heappop(priority_queue)
if current_distance > distances[current_vertex]:
continue
for neighbor, weight in enumerate(graph[current_vertex]):
if weight != float('inf'):
distance = current_distance + weight
if distance < distances[neighbor]:
distances[neighbor] = distance
heapq.heappush(priority_queue, (distance, neighbor))
return distances
graph = [
[0, 10, 3, float('inf'), float('inf')],
[float('inf'), 0, 1, 2, float('inf')],
[float('inf'), 4, 0, 8, 2],
[float('inf'), float('inf'), float('inf'), 0, 7],
[0, 7, 3, 9, 5]
=== Code Execution Successful ===
93°F
Mostly cloudy
Search
ENG
IN
1:26 PM
7/1/2024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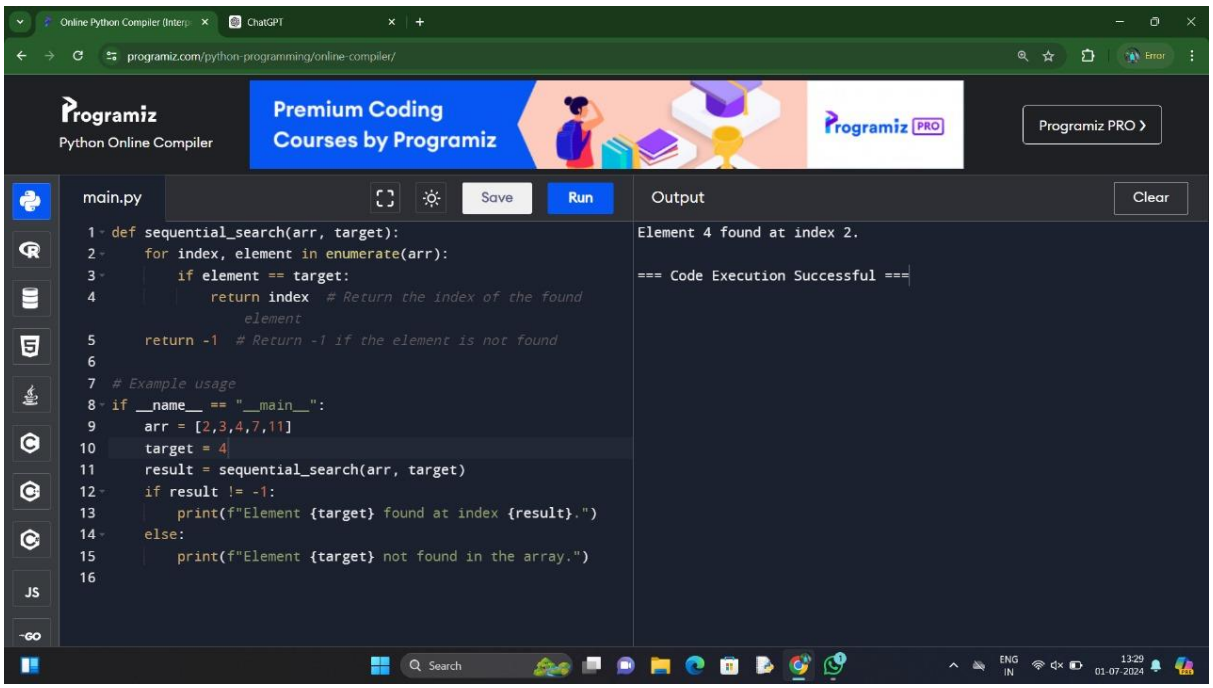
main.py
Save
Run
Output
Clear
array
min_index = i
for j in range(i+1, n):
if arr[j] < arr[min_index]:
min_index = j
# Swap the found minimum element with the first element of the unsorted part
arr[i], arr[min_index] = arr[min_index], arr[i]
return arr
# Example usage
if __name__ == "__main__":
arr = [5,2,9,1,5,6]
print("Original array:", arr)
sorted_arr = selection_sort(arr)
print("Sorted array:", sorted_arr)
Original array: [5, 2, 9, 1, 5, 6]
Sorted array: [1, 2, 5, 5, 6, 9]
=== Code Execution Successful ===
Search
ENG
IN
13:21
01-07-2024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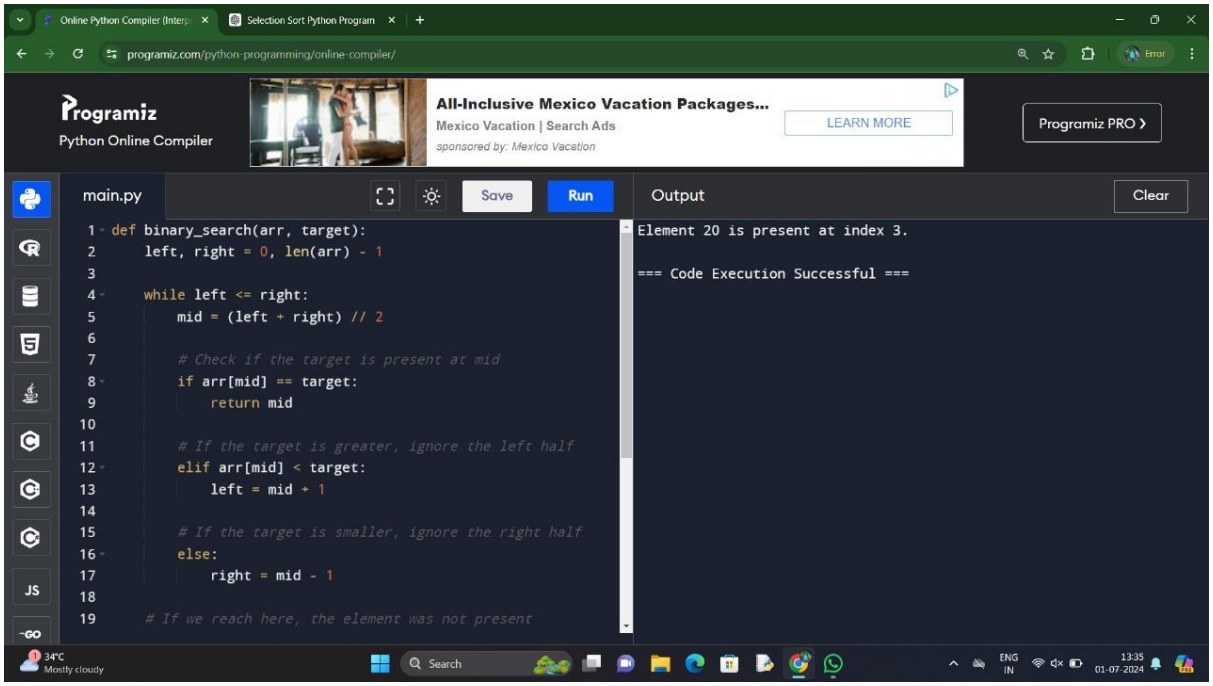
Save
Run
Output
Clear
def sequential_search(arr, target):
for index, element in enumerate(arr):
if element == target:
return index # Return the index of the found element
return -1 # Return -1 if the element is not found
# Example usage
if __name__ == "__main__":
arr = [2,3,4,7,11]
target = 4
result = sequential_search(arr, target)
if result != -1:
print(f"Element {target} found at index {result}.")
else:
print(f"Element {target} not found in the array.")
Element 4 found at index 2.
=== Code Execution Successful ===
Search
ENG
IN
13:29
01-07-2024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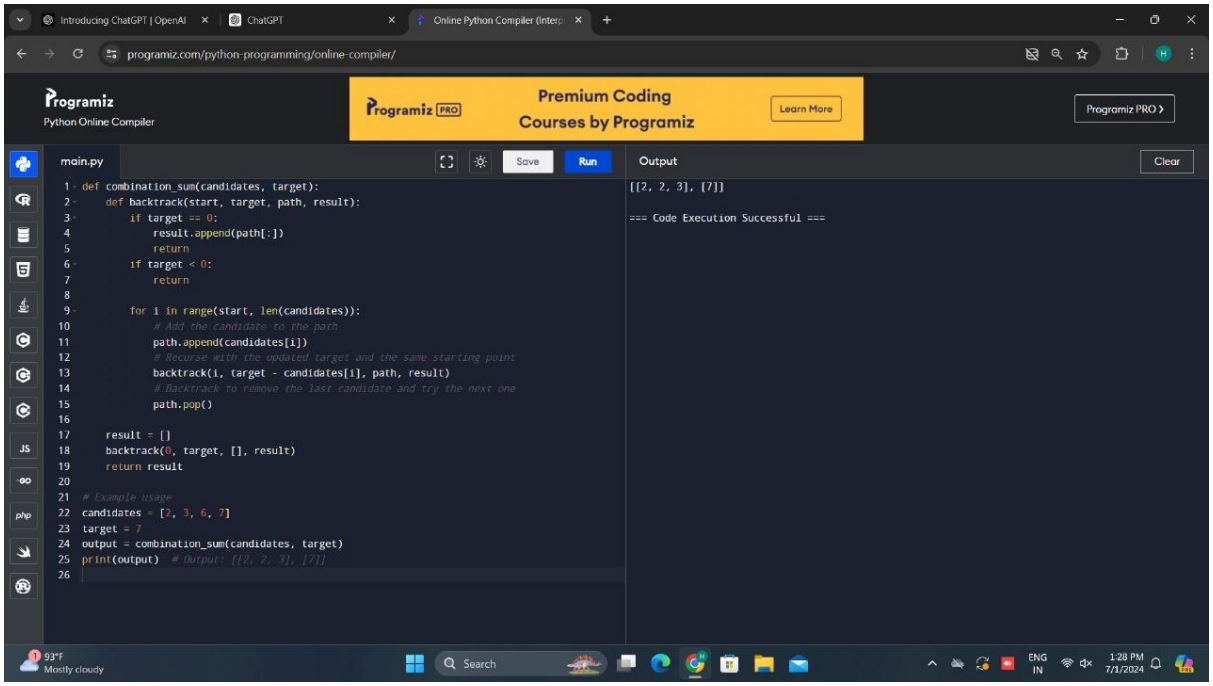
main.py
Save
Run
Output
Clear
def binary_search(arr, target):
left, right = 0, len(arr) - 1
while left <= right:
mid = (left + right) // 2
# Check if the target is present at mid
if arr[mid] == target:
return mid
# If the target is greater, ignore the left half
elif arr[mid] < target:
left = mid + 1
# If the target is smaller, ignore the right half
else:
right = mid - 1
# If we reach here, the element was not present
Element 20 is present at index 3.
=== Code Execution Successful ===
34°C
Mostly cloudy
Search
ENG
IN
13:35
01-07-2024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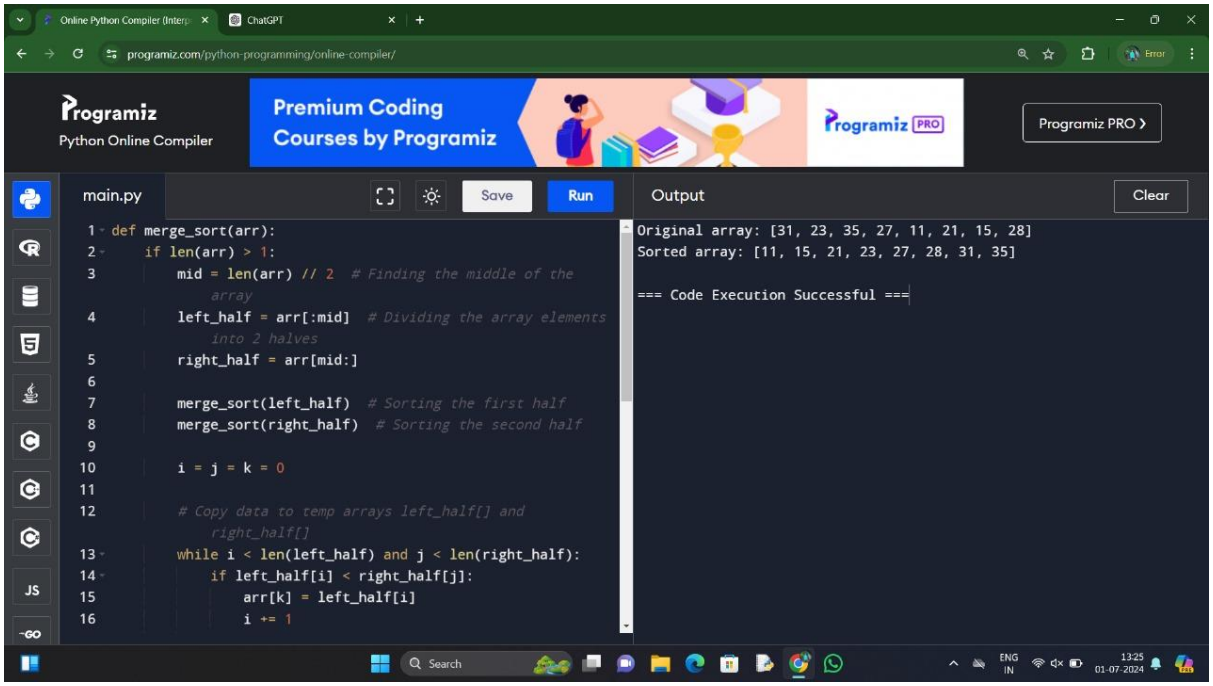
main.py
Save
Run
Output
Clear
def combination_sum(candidates, target):
def backtrack(start, target, path, result):
if target == 0:
result.append(path[:])
return
if target < 0:
return
for i in range(start, len(candidates)):
# Add the candidate to the path
path.append(candidates[i])
# Recurse with the updated target and the same starting point
backtrack(i, target - candidates[i], path, result)
# Backtrack to remove the last candidate and try the next one
path.pop()
result = []
backtrack(0, target, [], result)
return result
# Example usage
candidates = [2, 3, 6, 7]
target = 7
output = combination_sum(candidates, target)
print(output) # Output: [[2, 2, 3], [7]]
[[2, 2, 3], [7]]
=== Code Execution Successful ===
93°F
Mostly cloudy
Search
ENG
IN
1:28 PM
7/1/2024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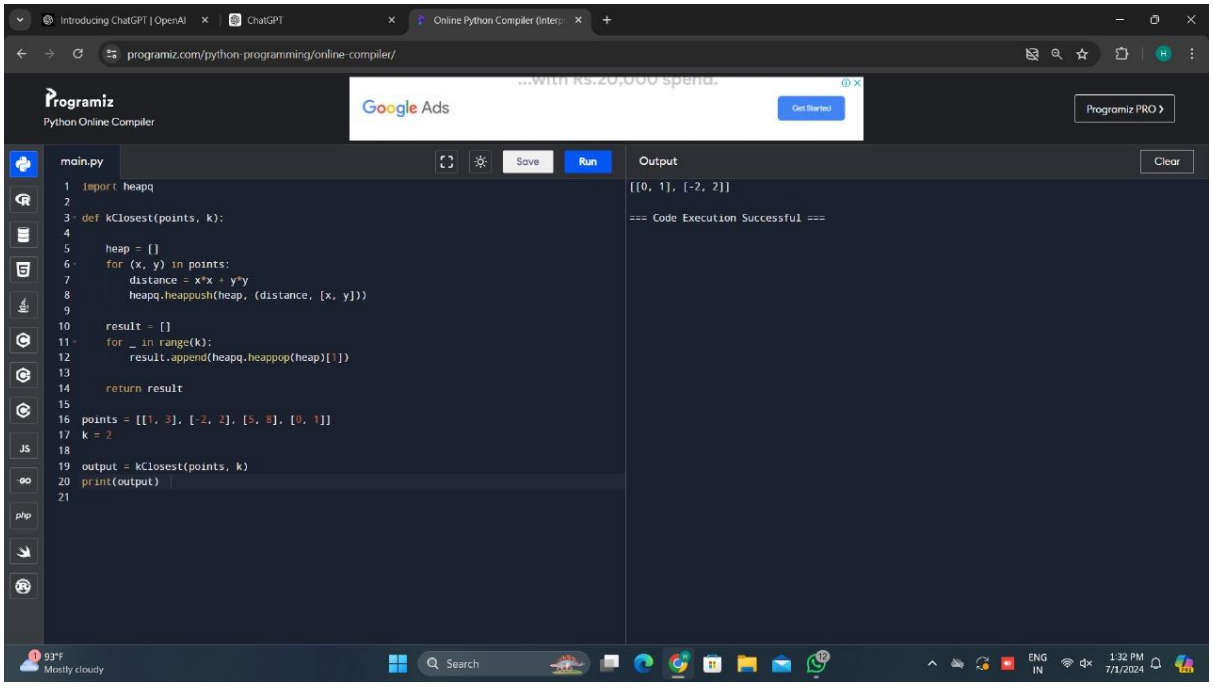
Save
Run
Output
Clear
1 def merge_sort(arr):
2 if len(arr) > 1:
3 mid = len(arr) // 2 # Finding the middle of the array
4 left_half = arr[:mid] # Dividing the array elements into 2 halves
5 right_half = arr[mid:]
6
7 merge_sort(left_half) # Sorting the first half
8 merge_sort(right_half) # Sorting the second half
9
10 i = j = k = 0
11
12 # Copy data to temp arrays left_half[] and right_half[]
13 while i < len(left_half) and j < len(right_half):
14 if left_half[i] < right_half[j]:
15 arr[k] = left_half[i]
16 i += 1
Original array: [31, 23, 35, 27, 11, 21, 15, 28]
Sorted array: [11, 15, 21, 23, 27, 28, 31, 35]
=== Code Execution Successful ===
Search
ENG
IN
13:25
01-07-2024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main.py
Save
Run
Output
Clear
1 import heapq
2
3 def kClosest(points, k):
4
5 heap = []
6 for (x, y) in points:
7 distance = x*x + y*y
8 heapq.heappush(heap, (distance, [x, y]))
9
10 result = []
11 for _ in range(k):
12 result.append(heapq.heappop(heap)[1])
13
14 return result
15
16 points = [[1, 3], [-2, 2], [5, 8], [0, 1]]
17 k = 2
18
19 output = kClosest(points, k)
20 print(output)
21
[[0, 1], [-2, 2]]
=== Code Execution Successful ===
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IN
1:32 PM
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