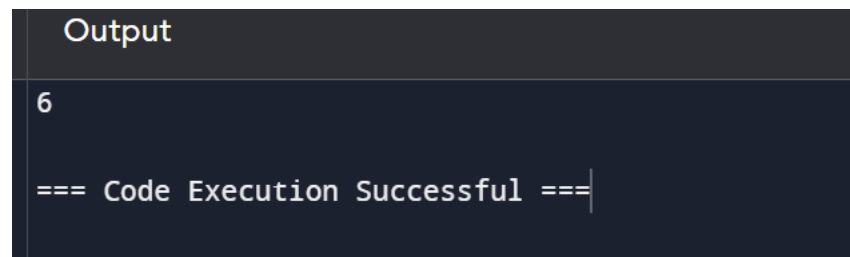**25. Given an integer array nums, find the subarray with the largest sum, and return its sum.**

Aim: aim of the program is integer array nums, find the subarray with the largest sum, and return its sum.

Program:

```
def max_subarray_sum(nums):
    max_sum = float('-inf')
    current_sum = 0
    for num in nums:
        current_sum = max(num, current_sum + num)
        max_sum = max(max_sum, current_sum)
    return max_sum
nums = [-2, 1, -3, 4, -1, 2, 1, -5, 4]
print(max_subarray_sum(nums))
```

Output:

```
Output

6

=== Code Execution Successful ===
```

Time complexity:O(n)