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

## Example 1:

## Input: nums = [-2,1,-3,4,-1,2,1,-5,4]

## Output: 6

## Explanation: The subarray [4,-1,2,1] has the largest sum 6.

**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]
result = max_subarray_sum(nums)
print(result)
```

**OUTPUT:**

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe
"
6
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

**TIME COMPLEXITY:**

**Time complexity for the above code is O(n)**