STUDENT REPORT

DETAILS

Name

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EXPERIMENT

Title

SUB ARRAY WITH MAX SUM

Description

You are given a list of integers, and your task is to find the subarray with the maximum sum. Write a function or method to solve this problem efficiently and return the maximum sum.

Input:

n: the no of elements in the array

nums (List of integers): A list of integers (1 <= len(nums) <= 10^5)

Sample input:

8

-1 2 3 10 -4 7 2 -5

Sample output:

20

Explanation:

The max subarry sum is 20. The subarray is [2,3,10,-4,7,2]

Source Code:

```python
def max_subarray_sum(nums):
    # Initialize variables
    max_current = max_global = nums[0]

    # Iterate over the array from the second element
    for i in range(1, len(nums)):
        # Update max_current by choosing the maximum between
        # the current element alone or the current element
        # plus the previous max_current sum
        max_current = max(nums[i], max_current + nums[i])

        # Update the global max if needed
        if max_current > max_global:
            max_global = max_current

    return max_global

# Sample usage
n = int(input())  # Input the number of elements
nums = list(map(int, input().split()))  # Input array elements
print(max_subarray_sum(nums))
```

RESULT

5 / 5 Test Cases Passed | 100 %