Maximum Subarray Problem Explanation

elisha

September 13, 2025

1   Problem Statement:

Given an integer array `nums`, find the contiguous subarray containing at least one number which has the largest sum and return its sum.

Example:

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

Output: `nums = [6]`

| -2 | 1 | -3 | 4 | 2 | 1 | -5 | 4 |

2   Explanation:

2.1   Brute Force Approach:

```
Algorithm: Find maximum
Input: nums = [-2,1,-3,4,2,1,-5,4]
Output: max_val

 for(i=..n-1)
  for(j=i..n-1)
   for(k=i..j)
   compute sum of subarray nums[i..j]
```

$O(n^3)$