

Lab Exercise 2 | Week 3

Implement ***the maximum- subarray problem.***

- a. *Input: Array of integers.*
- b. *Output: Maximum contiguous subarray sum.*

Implement with

- a. **Brute Force Solution:** Solving it for every possible subarray.
- b. **Divide and Conquer:**

- a. Divide the given array in two halves.
- b. Return the maximum of following three
 - i. Maximum subarray sum in left half (Make a recursive call)
 - ii. Maximum subarray sum in right half (Make a recursive call)
 - iii. Maximum subarray sum such that the subarray crosses the midpoint.

c. *Example:*

-2	-3	4	-1	-2	1	5	-3
0	1	2	3	4	5	6	7

$$4 + (-1) + (-2) + 1 + 5 = 7$$

Maximum Contiguous Array Sum is 7

Write the analysis in detail and conclude.