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Assignment # **6**

## Task 1

```
Max Sub Array (A, n)
{
    global Sum = A[n];
    Max Sum[n] = A[n]
    for (i = n-1 to 2)
        if (Max Sum[i+1] + A[i] > A[i])
            Max Sum[i] = Max Sum[i-1] + A[i]

        else
            Max Sum[i] = A[i]
        if (global Sum < Max Sum[i]
            global Sum = Max Sum[i]
            global Start = Max Sum[i]
    return global Sum
}
```

Task 2

Dry run for Brute Force:-

For i=1
    max array Sum = 2    , max Sum = 2

For i=2
    max array Sum = 2, max Sum = -7

For i=3
    max array Sum = 3, max Sum = 1

For i=4
    max Array Sum = 7, max Sum = 5

For i=5.
    max array Sum = 7, max Sum = 7

For i=6
    max array Sum = 9, max Sum = 7

For i=7
    max Array Sum = 90, max Sum = 2

For i = 8
max Array Sum = 10, sum = 8

For i = 9
max Array Sum = 10, sum = 7

x————————————x

Task 3

kadanl algo

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| a | 2 | -4 | 3 | 4 | -3 | 5 | -5 | 6 | -1 |

| max | 2 | -2 | 3 | 7 | 4 | 9 | 4 | 10 | 9 |
|---|---|---|---|---|---|---|---|---|---|

i = 2 : a[2] < a[2] + max[1] = -4 < -2
i = 3 : a[3] > a[3] + max[2] = 3 > 1
i = 4 : a[4] < a[4] + max[3] = 4 < 7
i = 5 : a[5] < a[5] + max[4] = -3 < 4
i = 6 : a[6] < a[6] + max[5] = 5 < 10
i = 7 : a[7] < a[7] + max[6] = -5 < 4
i = 8 : a[8] < a[8] + max[7] = 6 < 10
i = 9 : a[9] < a[9] + max[8] = -1 < 9
        global Sum = 10

Task 4

```
Max SubArray (A, n)
{
    global Sum = A[1];
    Max Sum = A[1];
    for (i = 2 to n)
        if (Max Sum + A[i] > A[i])
            Max Sum = Sum Sum + A[i]
    else
        Max Sum = A[i]
    if (globalSum < Max Sum)
        global Sum = Max Sum;

    return global Sum;
```