



AHSANIA MISSION UNIVERSITY OF SCIENCE & TECHNOLOGY

Lab Report-03

Lab No: 03

Course Code: CSE 2202

Course Title: Computer Algorithm Sessional.

Submitted By:

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1st Batch, 2nd Year, 2nd Semester

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Task01: Leader of an Array

Source Code

```
#include <bits/stdc++.h>
using namespace std;

int main() {
    int n;
    cout << "Enter number of elements: ";
    cin >> n;
    int a[n];
    cout << "Enter the elements: ";
    for(int i = 0; i < n; i++) {
        cin >> a[i];
    }

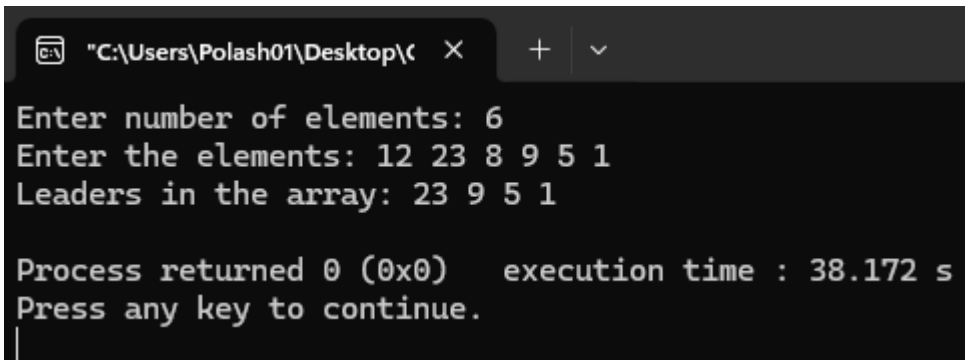
    vector<int> leaders;
    int maxRight = a[n - 1];
    leaders.push_back(maxRight);

    for(int i = n - 2; i >= 0; i--) {
        if(a[i] > maxRight) {
            maxRight = a[i];
            leaders.push_back(maxRight);
        }
    }

    reverse(leaders.begin(), leaders.end());
    cout << "Leaders in the array: ";
    for(int x : leaders)
        cout << x << " ";
    cout << "\n";

    return 0;
}
```

Output:



```
"C:\Users\Polash01\Desktop\<  X  +  v
Enter number of elements: 6
Enter the elements: 12 23 8 9 5 1
Leaders in the array: 23 9 5 1

Process returned 0 (0x0)   execution time : 38.172 s
Press any key to continue.
|
```

Task02: Maximum Subarray Sum (Brute Force)

Source Code

```
#include <bits/stdc++.h>
using namespace std;

int main() {
    int t;
    cout << "Enter number of test cases: ";
    cin >> t;

    while(t-- > 0) {
        int n;
        cout << "Enter number of elements: ";
        cin >> n;
        int arr[n];
        cout << "Enter the elements: ";
        for(int i = 0; i < n; i++) {
            cin >> arr[i];
        }

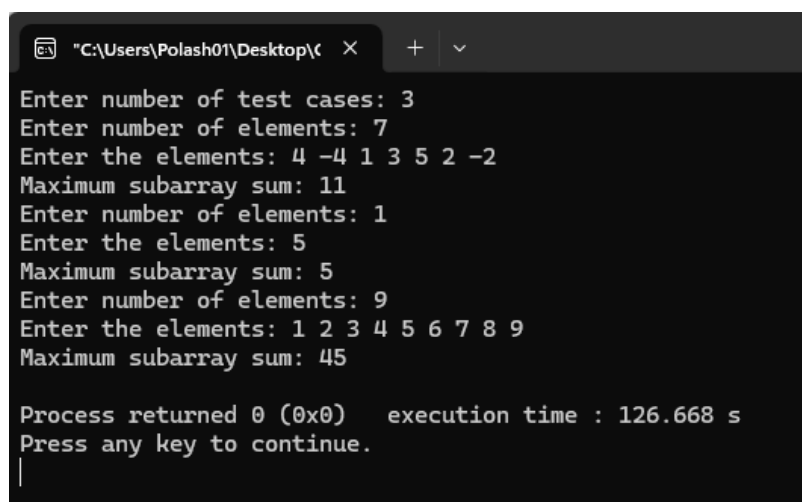
        int maxsum = INT_MIN;

        for(int i = 0; i < n; i++) {
            int currSum = 0;
            for(int j = i; j < n; j++) {
                currSum += arr[j];
                maxsum = max(maxsum, currSum);
            }
        }

        cout << "Maximum subarray sum: " << maxsum << endl;
    }

    return 0;
}
```

Output:



```
"C:\Users\Polash01\Desktop\c++" x + v
Enter number of test cases: 3
Enter number of elements: 7
Enter the elements: 4 -4 1 3 5 2 -2
Maximum subarray sum: 11
Enter number of elements: 1
Enter the elements: 5
Maximum subarray sum: 5
Enter number of elements: 9
Enter the elements: 1 2 3 4 5 6 7 8 9
Maximum subarray sum: 45

Process returned 0 (0x0)   execution time : 126.668 s
Press any key to continue.
|
```

