


Q1 - Given an integer array and two integers L and R. Find the sum of elements between the index L and index R.

Note: Both L and R inclusive.

```
.vscode > C++ assignment_array.cpp
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      int n,l,r;
6      cin>>n>>l>>r;
7      int sum=0;
8      int arr[n];
9      for(int i=0;i<n;i++){
10         cin>>arr[i];
11     }
12     for(int i=l;i<=r;i++){
13         sum+=arr[i];
14     }
15     cout<<sum;
16
17     return 0;
18 }
19
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
● PS D:\cpprogame> cd "d:\cpprogame\.vscode"
? ) { .\assignment_array }
8
2
5
1 2 3 4 5 6 7 8
18
○ PS D:\cpprogame\.vscode> 
```

Q2 - There is a man going on a trek. The trek consists of $n + 1$ points at different altitudes. The man starts his trek on point 0 with altitude equal 0. You are given an integer array height of length n where $height[i]$ is the net height in altitude between points i and $i + 1$ for all $(0 \leq i < n)$. Return the highest altitude of a point.

.vscode >  vector1.cpp

```
1  #include<iostream>
2  #include<vector>
3  using namespace std;
4  int highestAltitude(vector<int>& height) {
5      int n = height.size();
6      int currAltitude = 0, maxAltitude = 0;
7      for(int i = 0; i < n; i++) {
8          currAltitude += height[i];
9          maxAltitude = max(maxAltitude, currAltitude);
10     }
11     return maxAltitude;
12 }
```

Q3 - Given an integer array arr consisting of 0's and 1's only, return the max length of sequence which contains equal numbers of 0 and 1.

```
code > assignment_array.cpp
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      int n;
6      cin>>n;
7      int num_0=0,num_1=0;
8      int arr[n];
9      for(int i=0;i<n;i++){
10         cin>>arr[i];
11     }
12     for(int i=0;i<n;i++){
13         if(arr[i]==0){
14             num_0++;
15         } else {
16             num_1++;
17         }
18     }
19     cout<<min(num_0,num_1);
20     return 0;
21 }
22
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
● ; if ($?) { .\assignment_array }
7
0 1 1 0 1 0 0
3
○ PS D:\cppprograme\.vscode>
```

Q4 - Given an integer array arr, return the number of consecutive sequences(subarrays) with odd sum.

```
.vscode > C++ array6.cpp
1  #include <iostream>
2  #include <vector>
3  using namespace std;
4  int countConsecutiveOddSumSubarrays(vector<int>& arr) {
5      int count = 0; // Initialize count to 0
6      int oddSum = 0; // Initialize oddSum to 0
7      int n = arr.size(); // Get size of input array
8      for (int i = 0; i < n; i++) {
9          oddSum += arr[i];
10         if (oddSum % 2 == 1 ){
11             count++;
12         }
13         if (arr[i] % 2 == 1) {
14             oddSum = 0;
15         }
16     }
17     return count;
18 }
19 int main() {
20     vector<int> arr = {1, 2, 3, 4, 5};
21     int count = countConsecutiveOddSumSubarrays(arr);
22     cout << "Number of consecutive subarrays with odd sum: " << count << endl;
23     return 0;
24 }
25
```

```
cd "d:\cppprograme\.vscode\" ; i
}
Number of consecutive subarrays with odd sum: 3
PS D:\cppprograme\.vscode> 
```

Ans 5- Given an integer array arr, return an array ans such that ans[i] is equal to the product of all the elements of arr except arr[i].

```
.vscode > array/.cpp
1  #include<iostream>
2  #include<vector>
3  using namespace std;
4  vector<int> sumExceptCurrentElement(vector<int> &v){
5      int n=v.size();
6      vector<int> ans(n,1);
7      int product=1;
8      for(int i=0;i<n;i++){
9          product*=v[i];
10     }
11     for(int i=0;i<n;i++){
12         ans[i]=product/v[i];
13     }
14     return ans;
15 }
16 int main(){
17     int n;
18     cin>>n;
19     vector<int> arr(n);
20     for(int i=0;i<n;i++){
21         cin>>arr[i];
22     }
23     vector<int> ans=sumExceptCurrentElement(arr);
24     for(int i=0;i<n;i++){
25         cout<<ans[i]<<" ";
26     }
27     return 0;
28 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
6
3 8 5 9 1 2
720 270 432 240 2160 1080
PS D:\cppprogramme\.vscode> 
```

Ans 6- Given an array of size 'n' (initially zero) and 'Q' updates (increase the value of all index from l to r with value x) and in the end print all the numbers of the array.

```
vscode 7 array0.cpp
1  #include <iostream>
2  #include <vector>
3  using namespace std;
4
5  int main() {
6      int n,q;
7      cin>>n>>q;
8      vector<int> arr(n,0);          // initilises vector eith 0 and size is n
9      while(q--){
10         int l,r,x;
11         cin>>l>>r>>x;
12         for(int i=l;i<=r;i++){
13             arr[i-1]+=x;            // update all element with x
14         }
15     }
16     for(int i=0;i<n;i++){
17         cout<<arr[i]<<" ";        // all the elements off vector
18     }
19
20     return 0;
21 }
22
```