Question :

We are given an array of integers(a[n]) . We are given multiple queries of the form : (1, i) which means we need to output the sum of all numbers from index- ‘1’ to index ‘i’ of the array.

Analysis :

Running a loop for each query[O(N)] and finding the sum is a good idea but not very efficient as it takes O(N\*Q) time.

#include <bits/stdc++.h>

using namespace std;

int main() {

int n = 5 ; //size of the array

int a[5] = {6,7,3,2,2};

int dp[n+1]={0};

int i = 0 ;

while(i<=n-1){

if(i==0){

dp[i] = a[i] ;

}

else{

dp[i] = a[i] + dp[i-1];

}

i++;

}

int q = 4 ; //number of queries

int w[4] = {0,3,4,2}; //query array

i = 0 ;

while(i<=q-1){

int query;query = w[i];

cout<<dp[query]; //answering each query in O(1)

cout<<endl;

i++;

}

return 0;}