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Difficulty Level: Medium (https://practice.geeksforgeeks.org/Medium/0/0/)

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Kadane's Algorithm

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Given an array containing both negative and positive integers. Find the contiguous sub-array with maximum sum.

Input:
The first line of input contains an integer T denoting the number of test cases. The description of T test cases follows. The first line of each test case contains a single integer N denoting the size of array. The second line contains N space-separated integers A1, A2, ..., AN denoting the elements of the array.

Output:
Print the maximum sum of the contiguous sub-array in a separate line for each test case.

Constraints:
1 ≤ T ≤ 200
1 ≤ N ≤ 1000
-100 ≤ A[i] <= 100

Example:
Input
2
3
1 2 3
4
-1 -2 -3 -4
Output
6
-1
** For More Input/Output Examples Use 'Expected Output' option **

Author: shef5 (https://auth.geeksforgeeks.org/user/shef5/practice/)

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C (gcc 5.4) C++ (g++ 5.4) C# Java (1.8) Python 3

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```
for _ in range(int(input())):
    n=int(input())
    l=list(map(int,input().split()))
    ispos=any(x>0 for x in l)
    if ispos:
        ans=0
        Sum=0
        for i in l:
            Sum+=i
            if Sum>ans:
                ans=Sum
            if Sum<0:
                Sum=0
        print(max(ans,Sum))
    else:
        print(max(l))
```

It is recommended to 'Compile & Test' your code before clicking 'Submit'!

Compile & Test | Submit | Expected Output

Compilation/Execution Result:

Need help with your code? Please use ide.geeksforgeeks.org (https://ide.geeksforgeeks.org)**, generate link and share the link here.**

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amandeep gupta • a year ago

well there is a easy way to implement kadane's algo in which there is no need to check for all negative array. It will take care of itself. Writing pseudocode here:
int kadane(arr, size)

for i=1 to size-1
curMax = max(arr[i],arr[i] + curMax)
gMax =max(curMax , gMax)
return gMax
Yes, that's it.
Code: http://code.geeksforgeeks.o...
7 • Reply • Share ›

Pramod Vidyagar ➚ amandeep gupta • a year ago
what should be the initial value of curMax and gMax ??
• Reply • Share ›

amandeep gupta ➚ Pramod Vidyagar • a year ago
Take both of them as first element of array.
3 • Reply • Share ›

Pramod Vidyagar ➚ amandeep gupta • a year ago
Thanks it worked perfectly ...
1 • Reply • Share ›

kd ➚ amandeep gupta • 7 months ago
gMax=maximum element in the array
curMax=0. this will work.
• Reply • Share ›

Akshay S Danthi ➚ amandeep gupta • a year ago
are there any edge cases this won't pass?
thanks btw
• Reply • Share ›

amandeep gupta ➚ Akshay S Danthi • a year ago
No , there are no edge cases.
I used it for a hackerrank problem. it worked fine.
• Reply • Share ›

pankaj sehgal ➚ amandeep gupta • a month ago
what if all the elements in the array are -ve, in this case it will not pass
• Reply • Share ›

amandeep gupta ➚ pankaj sehgal • a month ago
It's giving correct output. Just check it once.
• Reply • Share ›

Sumit Kathayat ➚ amandeep gupta • 2 months ago
Won't work for
1 2 -2 4
• Reply • Share ›

amandeep gupta ➚ Sumit Kathayat • 2 months ago
What should be the answer according to you?
• Reply • Share ›

kaushik raj • 7 days ago
#include<bits stdc++.h="">
#define ll long long int
using namespace std;
int main()
{
ll t;
cin >> t;
while(t--)

{
ll n;
cin >> n;
ll a[n];

for(ll i=0;i<n;i++) {="" cin="">> a[i];

}
ll maxi=a[0];

for(ll i=1;i<n;i++) {="" ll="" t1="a[i-1]+a[i];" a[i]="max(t1,a[i]);" maxi="max(maxi,a[i]);" }="" cout="" <<="" maxi="" <<="" endl;="" }="" }="">
1 • Reply • Share ›

Rishabh jain • 2 years ago
have right answer but still showing wrong answer, Can someone help please ?

#include <iostream>

#include <cstdio>

using namespace std;

int ans(int size, int a[]);

int main(){

int t;

int size, a[101];

cin >> t;

for(int i = 0; i < t; i++){

// get array size and element of the array

see more

1 • Reply • Share ›

Roop Chand Jangir ➚ Rishabh jain • 5 months ago
Constraints:
1 ≤ N ≤ 100 is wrong
1<=N<=100000 is correct
• Reply • Share ›

Shikhar Mod ➚ Rishabh jain • 2 years ago
The code that you have presented here seems to be working fine. Are you sure that this is the same code that you were submitting?
• Reply • Share ›

Wildan Dicky Alnatara • 5 days ago
//https://www.geeksforgeeks.o...
//Largest Sum contiguous subarray

#include <bits stdc++.h="">
using namespace std;

int pilihMax(int a,int b){
if(a>=b) {return a;}

return b;
}

void largestSum(int tab [],int n,int *sumSebelum, int *maxnow){
if(n==1){
*maxnow = tab[0];
*sumSebelum = tab[0];

```
} else{
int p,maxnya;
largestSum(tab,n-1,&p,&maxnya);
```

see more

• Reply • Share ›

Kumar Seetharaman • 5 days ago

```
import java.util.*;
import java.lang.*;
import java.io.*;

class GFG {
public static void main (String[] args) {
int a[] = { 5,-3,-1,-6,11,-4,13,-5,2};
int count = maxsum(a);
System.out.println("The max sum is "+count);

}

public static int maxsum(int a[])
{
int m[] = new int[a.length];
if(a[0] > 0)
{
m[0] = a[0];
}
```

see more

• Reply • Share ›

Gowtham • 13 days ago

https://ide.geeksforgeeks.o... Where is the mistake? I Can't find one.

• Reply • Share ›

Andrej Bátora • 23 days ago

see more

• Reply • Share ›

Prateek Samaiya • 24 days ago

https://ide.geeksforgeeks.o...

I am not able to figure out where i am going wrong

• Reply • Share ›

arpit gupta • a month ago

hi all , check this code is easy to understand , to do is to find complexity of this code

hi all ,,,check this code is easy to understand...to do is to find complexity of this code

• Reply • Share ›

Deepthi Vijay • a month ago

https://ide.geeksforgeeks.o...

Can someone please check this

• Reply • Share ›

Amol Mejari • 3 months ago

Solution in java - http://ide.geeksforgeeks.or...

• Reply • Share ›

Anshul Sharma • 3 months ago

http://practice.geeksforgee...

please check the link. Isn't my code right?

• Reply • Share ›

Michele Miccinesi • 3 months ago

You should specify in the statement of the problem that we don't consider empty sums as equal to 0...

Imagine to apply this problem to choices in trading, then if all numbers are negative the best choice is NOT to buy, guys!!

• Reply • Share ›

Injarapu Balasatishkumar • 4 months ago

Please upgrade code editor..It's giving errors for Java working code.

Run Time Error

Error: Could not find or load main class

• Reply • Share ›

anmol • 5 months ago

My program gives Segmentation Fault, I have no idea why. Please have a look. Works well in IDE

http://ide.geeksforgeeks.or...

• Reply • Share ›

> **Jaspreet Singh** Mod → anmol • 5 months ago
>
> problem constraints have been updated, please try again.
>
> • Reply • Share ›

Guo-Guang Chiou • 5 months ago

share mine in java and hope to be improved.

http://ide.geeksforgeeks.or...

• Reply • Share ›

Aditya Srivastava • 5 months ago

http://ide.geeksforgeeks.or...

Why is this returning segmentation fault?

• Reply • Share ›

> **anmol** → Aditya Srivastava • 5 months ago
>
> one reason could be length(array)>=100, you have initialized size as 10. Side note, you are also printing extra characters.
>
> • Reply • Share ›
>
>> **anmol** → anmol • 5 months ago
>>
>> sorry, length(array)<=100
>>
>> • Reply • Share ›

himanshu aggarwal • 5 months ago

http://ide.geeksforgeeks.or...

Runtime Error:

Runtime ErrorAbort signal from abort(3) (SIGABRT)

Runtime Error:Abort signal from abort(3) (SIGABRT)

please help.

Reply • Share ›

Saksham Sharma • 5 months ago

http://ide.geeksforgeeks.or...
simple and fine

Reply • Share ›

Sand Summerstorm • 5 months ago

I don't think there's anything wrong with my code http://ide.geeksforgeeks.or...
And yet I'm getting the warning that my output is producing less number of lines than expected.

Please check and solve this problem, geeks. Seems like many have the same issue.

Reply • Share ›

Jaspreet Singh Mod → Sand Summerstorm • 5 months ago

Please read this article
http://www.geeksforgeeks.or...

Reply • Share ›

Sand Summerstorm → Jaspreet Singh • 5 months ago

Oh, I'm sorry. I didn't see this article. Got it now. Thanks for the quick reply :)

Reply • Share ›

rajiv baghel • 5 months ago

My code is working fine on eclipse..plz check wats the issue it says new line character missing and whenever i compile on the website it throws several runtime errors
http://ide.geeksforgeeks.or...

Reply • Share ›

Jaspreet Singh Mod → rajiv baghel • 5 months ago

you have to run your code for multiple test cases, and you don't have to print lines like "enter number of elements"
please read this article
http://www.geeksforgeeks.or...

Reply • Share ›

Siva Reddy • 5 months ago

http://ide.geeksforgeeks.or...

please let me know what is wrong with above code

Reply • Share ›

Jaspreet Singh Mod → Siva Reddy • 5 months ago

Please read this article
http://www.geeksforgeeks.or...

Reply • Share ›

Abhishek kumar singh • 5 months ago

```
import sys

no_of_test_cases = int(input())
while no_of_test_cases > 0:
array_size = int(input())
array = []
for i in range(0, array_size):
i = input()
array.append(i)
currentsum = 0
finalsum = -sys.maxsize
for j in range(0, array_size):
currentsum = currentsum + int(array[j])
```