

## MAX SUM CONTIGUOUS SUBARRAY

**#Lockdown continues ....**

**#Stay At Home**

*Prince agarwal*  
**( By Prince Agarwal )**  
[ " Hello World " ]

*Hello world*

## MAX SUM CONTIGUOUS SUBARRAY

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**#Stay At Home**

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## Max Sum Contiguous Subarray

■ Question :-

Find the **contiguous** subarray within an array, A of length N which has the **largest sum**.

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■ Example :- Given,

$A = [1, 2, 3, 4, -10]$

Contiguous Sub Array : -

{ 1 }

{ 1 ,2 }

{ 1 ,2, 3 }

{ 1 ,2, 3, 4 }

{ 1 ,2, 3, 4, -10 }

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## Max Sum Contiguous Subarray

■ Example :- Given,

$A = [1, 2, 3, 4, -10]$

Contiguous Sub Array : -

$\{1\} = \{1\}$

$\{1, 2\} = \{3\}$

$\{1, 2, 3\} = \{6\}$

$\{1, 2, 3, 4\} = \{10\}$

$\{1, 2, 3, 4, -10\} = \{0\}$

$\{2\} = \{2\}$

$\{2, 3\} = \{5\}$

$\{2, 3, 4\} = \{9\}$

$\{2, 3, 4, -10\} = \{-1\}$

$\{3\} = \{3\}$

$\{3, 4\} = \{7\}$

$\{3, 4, -10\} = \{-3\}$

$\{4\} = \{4\}$

$\{4, -10\} = \{-6\}$

$\{-10\} = \{-10\}$

This will Take  $O(n^2)$

So, we ignore this.

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## Max Sum Contiguous Subarray

 Solution :-

### Kadane's Algorithm

But, First we have to Understand the Logic :-

0	1	2	3	
1	2	3	4	-10

We have to find the contiguous Array

Let's suppose,

Start index of That contiguous Array, `int start = 0`

End index of That contiguous Array, `int end = 0`

We make 2 temp. Variable for comparisons :

`Max_so_far = a[0]`

`Max_ending_here = 0`


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## ROUGH PAGE

### Max Sum Contiguous Subarray

Now lets start the comparison

0	1	2	3	4
1	2	3	4	-10



Max\_so\_far = 10

Max\_ending\_here = 0

Start = 0 end =3

```
for(int i=0;i<n;i++) {
```

```
    max_ending_here+=a[i];
```

```
    if(max_so_far<max_ending_here){  
        max_so_far=max_ending_here;  
        start=s; end=i; }  
}
```

```
if(max_ending_here<0) {  
    max_ending_here=0;  
    s=i+1;}  
}
```

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*“ If you feel any problem then comments in my video  
I will reply as soon as possible “*

*- Prince Agarwal*

*Hello world*