

QUESTION #18

LARGEST SUM CONTIGUOUS SUBARRAY

Find the sum of contiguous subarray within a 1D array of numbers which has the largest sum.

KADANE'S
ALGORITHM

Solution

Let a be the array for which we have to find the max sum of subarray and n be no. of elements in it

Let $cs = \text{maxsum} = a[0]$

1. for $i : 0$ to n

1.1. if ($a[i] \geq 0$)

1.1.1. if $cs \geq 0$

$cs = cs + a[i]$

else

$cs = a[i];$

1.1.2. if($\text{maxsum} < cs$)

$\text{maxsum} = cs$

1.2. else

1.2.1. if($a[i] > cs$)

$cs = a[i]$

if($cs > \text{maxsum}$)

$\text{maxsum} = cs$

1.2.2. else

$cs = cs + a[i]$

if($cs < 0$)

$cs = 0$

Nerving Into
Data Structures