4-Two Elements sum to x

Aim:

**Problem Statement:**  
Given a sorted array of integers say arr[] and a number x. Write a recursive program using divide and conquer strategy to check if there exist two elements in the array whose sum = x. If there exist such two elements then return the numbers, otherwise print as “No”.  
Note: Write a Divide and Conquer Solution  
**Input Format**  
   First Line Contains Integer n – Size of array  
   Next n lines Contains n numbers – Elements of an array  
   Last Line Contains Integer x – Sum Value  
**Output Format**  
   First Line Contains Integer – Element1  
   Second Line Contains Integer – Element2 (Element 1 and Elements 2 together sums to value “x”)

Answer:(penalty regime: 0 %)

Algorithm:

1. Read the integer n and array a of size n, followed by the target sum x.
2. Use a recursive function sum to search for two elements in the array whose sum equals x.
3. In sum, check if a[mid] + a[r] == x, and if found, store these values in z and c.
4. If no pair is found, print "No". Otherwise, print the values of z and c.

Code:

#include<stdio.h>

int sum(int \*,int,int,int);

int z=0,c=0;

int main()

{

int n,x;

scanf("%d",&n);

int a[n];

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

{

scanf("%d",&a[i]);

}

scanf("%d",&x);

int y=sum(a,0,n-1,x);

if(y==0)

{

printf("No");

}

else

{

printf("%d\n%d",z,c);

}

}

int sum(int a[],int l,int r,int x)

{

if(l<r)

{

int mid=(l+r)/2;

if(a[mid]+a[r]==x)

{

z=a[mid];

c=a[r];

return 1;

}

sum(a,l,r-1,x);

}

return 0;

}

Output:

|  | **Input** | **Expected** | **Got** |  |
| --- | --- | --- | --- | --- |
|  | 4  2  4  8  10  14 | 4  10 | 4  10 |  |
|  | 5  2  4  6  8  10  100 | No | No |  |

Passed all tests!

**Correct**

Marks for this submission: 1.00/1.00.

Result:

The expected output was obtained