4-G-Array Sum max problem

Aim:

Given an array of N integer, we have to maximize the sum of arr[i] \* i, where i is the index of the element (i = 0, 1, 2, ..., N).Write an algorithm based on Greedy technique with a Complexity O(nlogn).

 Input Format:

First line specifies the number of elements-n

The next n lines contain the array elements.

Output Format:

Maximum Array Sum to be printed.

Sample Input:

5

2 5 3 4 0

Sample output:

40

Algorithm:

1. Read the integer n and array a of size n.
2. Use a nested loop to sort the array a in ascending order by swapping elements.
3. Calculate the sum of the elements in a, each multiplied by its index i, and store the result in c.
4. Print the value of c.

Code:

#include <stdio.h>

int main()

{

int n,c=0;

scanf("%d",&n);

int a[n],temp;

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

{

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

}

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

{

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

{

if(a[i]<a[j] && j!=i)

{

temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

}

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

{

c+=i\*a[i];

}

printf("%d",c);

}

Output:

|  | **Input** | **Expected** | **Got** |  |
| --- | --- | --- | --- | --- |
|  | 5  2  5  3  4  0 | 40 | 40 |  |
|  | 10  2  2  2  4  4  3  3  5  5  5 | 191 | 191 |  |
|  | 2  45  3 | 45 | 45 |  |

Passed all tests!

**Correct**

Marks for this submission: 1.00/1.00.

Result:

The expected output was obtained