

S.No: 5Exp. Name: **Write a C program to Sort the elements using Bubble Sort Technique****Date: 2022-06-20****Aim:**

Write a program to **sort** the given elements using `bubble sort technique`.

At the time of execution, the program should print the message on the console as:

Enter value of n :

For example, if the user gives the **input** as:

Enter value of n : 3

Next, the program should print the messages one by one on the console as:

Enter element for a[0] :
Enter element for a[1] :
Enter element for a[2] :

if the user gives the **input** as:

Enter element for a[0] : 22
Enter element for a[1] : 33
Enter element for a[2] : 12

then the program should **print** the result as:

Before sorting the elements in the array are
Value of a[0] = 22
Value of a[1] = 33
Value of a[2] = 12
After sorting the elements in the array are
Value of a[0] = 12
Value of a[1] = 22
Value of a[2] = 33

Fill in the missing code so that it produces the desired result.

Source Code:**BubbleSortDemo3.c**

```
#include<stdio.h>
void main() {
    int a[20], i, n, j, temp;
    printf("Enter value of n : ");
    scanf("%d", &n);
    // Write the for loop to read array elements
    for(i=0;i<n;i++)
    {
        printf("Enter element for a[%d] : ",i);
        scanf("%d",&a[i]);
    }

    printf("Before sorting the elements in the array are\n");
    // Write the for loop to display array elements before sorting
```

```

for(i=0;i<n;i++)
{
    printf("Value of a[%d] = %d\n",i,a[i]);
}

//Write the code to sort elements
for(i=0;i<n;i++)
{
    for(j=0;j<n-1;j++)
    {
        if(a[j]>a[j+1])
        {
            temp = a[j];
            a[j] = a[j+1];
            a[j+1] = temp;
        }
    }
}

printf("After sorting the elements in the array are\n");
// Write the for loop to display array elements after sorting
for(i=0;i<n;i++)
{
    printf("Value of a[%d] = %d\n",i,a[i]);
}
}

```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter value of n : 3
Enter element for a[0] : 34
Enter element for a[1] : 25
Enter element for a[2] : 28
Before sorting the elements in the array are
Value of a[0] = 34
Value of a[1] = 25
Value of a[2] = 28
After sorting the elements in the array are
Value of a[0] = 25
Value of a[1] = 28
Value of a[2] = 34

Test Case - 2
User Output
Enter value of n : 5
Enter element for a[0] : 1
Enter element for a[1] : 6

Test Case - 2

Enter element for a[2] : 3
Enter element for a[3] : 8
Enter element for a[4] : 4
Before sorting the elements in the array are
Value of a[0] = 1
Value of a[1] = 6
Value of a[2] = 3
Value of a[3] = 8
Value of a[4] = 4
After sorting the elements in the array are
Value of a[0] = 1
Value of a[1] = 3
Value of a[2] = 4
Value of a[3] = 6
Value of a[4] = 8

Test Case - 3**User Output**

Enter value of n : 4
Enter element for a[0] : 90
Enter element for a[1] : 30
Enter element for a[2] : 55
Enter element for a[3] : 49
Before sorting the elements in the array are
Value of a[0] = 90
Value of a[1] = 30
Value of a[2] = 55
Value of a[3] = 49
After sorting the elements in the array are
Value of a[0] = 30
Value of a[1] = 49
Value of a[2] = 55
Value of a[3] = 90