

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

```

    printf("\n");
}
for(i=0;i<n;i++)
{
    for(j=i+1;j<n;j++)
    {
        if(a[j]<a[i])
        {
            temp=a[i];
            a[i]=a[j];
            a[j]=temp;
        }
    }
}
printf("After sorting the elements in the array are\n");
for(i=0;i<n;i++)
{
    printf("Value of a[%d] = %d",i,a[i]);
    printf("\n");
}
}

```

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 |
| 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 |