S.No: 6	Exp. Name: *Write a C program to Sort the elements using Selection Sort - Smallest element method Technique*	Date:2023-04-30

Aim:

Write a program to **sort** the given array elements using **selection sort smallest element** method.

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:

SelectionSortDemo6.c

```c
#include<stdio.h>
void main()
{
    int a[20], i, n, j, small, index;
    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]);
    }
    //Write the code read an array elements
    printf("Before sorting the elements in the array are\n");
    for(i=0;i<n;i++)
```

```c
    {
        printf("Value of a[%d] = %d",i,a[i]);
        printf("\n");
    }
    //Write the code to print the given array elements before sorting
    for(i=0;i<n;i++)
    {
        for(j=i+1;j<n;j++)
        {
            index=i;
            if(a[j]<a[index])
            {
                index=j;
            }
            small=a[i];
            a[i]=a[index];
            a[index]=small;
        }
    }
    //Write the code for selection sort smallest element method

    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");
    }
    //Write the code to print the given array elements after sorting
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter value of n : 4
Enter element for a[0] : 78
Enter element for a[1] : 43
Enter element for a[2] : 99
Enter element for a[3] : 27
Before sorting the elements in the array are
Value of a[0] = 78
Value of a[1] = 43
Value of a[2] = 99
Value of a[3] = 27
After sorting the elements in the array are
Value of a[0] = 27
Value of a[1] = 43
Value of a[2] = 78
Value of a[3] = 99