| S.No: 7 | Exp. Name: ***Write a C program to Sort the elements using Selection Sort - Smallest element method Technique*** | Date: 2022-06-27 |
|---|---|---|





## 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

```
#include<stdio.h>
void main() {
   int a[20], i, n, j, small, index;
   printf("Enter value of n : ");
   scanf("%d", &n);
   // Write the code to read an 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 code to print the given array elements before sorting
   for(i=0;i<n;i++)
   printf("Value of a[%d] = %d\n",i,a[i]);
```

```
   // Write the code for selection sort smallest element method
   for(i=0;i<n;i++)
   { for(j=i+1;j<n;j++)
     { if(a[j]<a[i])
      { index=a[j];
        a[j]=a[i];
        a[i]=index;
      }

     }

   }

   printf("After sorting the elements in the array are\n");
   // Write the code to print the given 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 : 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 |

| Test Case - 2 |
|---|
| **User Output** |
| Enter value of n : 6 |
| Enter element for a[0] : 45 |
| Enter element for a[1] : 23 |
| Enter element for a[2] : 7 |
| Enter element for a[3] : 85 |

| Test Case - 2 |
| --- |
| Enter element for a[4] : 15 |
| Enter element for a[5] : 9 |
| Before sorting the elements in the array are |
| Value of a[0] = 45 |
| Value of a[1] = 23 |
| Value of a[2] = 7 |
| Value of a[3] = 85 |
| Value of a[4] = 15 |
| Value of a[5] = 9 |
| After sorting the elements in the array are |
| Value of a[0] = 7 |
| Value of a[1] = 9 |
| Value of a[2] = 15 |
| Value of a[3] = 23 |
| Value of a[4] = 45 |
| Value of a[5] = 85 |