Experiment No. 8

Program:

```c
// Implementation of selection sort
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>

int smallest(int arr[], int k, int n);

void selection_sort(int arr[], int n);
void main(int argc, char *argv[]) {
    int arr[10], i, n;
    printf("\nEnter the numbers of the array: ");
    scanf("%d",&n);
    printf("\nEnter the elements of array: ");
    for(i=0;i<n;i++) {
        scanf("%d",&arr[i]);
    }
    selection_sort(arr, n);
    printf("\nThe sorted array is: ");
    for(i=0;i<n;i++) {
        printf("%d ",arr[i]);
    }
}
int smallest(int arr[], int k, int n) {
    int pos=k, small=arr[k], i;
    for(i=k+1;i<n;i++) {
        if(arr[i]<small) {
            small=arr[i];
            pos=i;
        }
    }
        return pos;
}
void selection_sort(int arr[], int n) {
    int k, pos, temp;
    for(k=0;k<n;k++) {
        pos = smallest(arr, k, n);
        temp = arr[k];
        arr[k] = arr[pos];
        arr[pos] = temp;
    }
}
```

Output:

```
PS C:\Users\Dell\Desktop\New folder (2)> gcc exp8dsa.c
PS C:\Users\Dell\Desktop\New folder (2)> .\a.exe

Enter the numbers of the array: 9

Enter the elements of array: 6 7 8 9 4 5 2 3 1

The sorted array is: 1 2 3 4 5 6 7 8 9
```