**ASSIGNMENT-2**

**Experiment-3 : Write a program to sort values in Ascending/Increasing order using selection sort technique in linear array using with recursion and without recursion.**

#include <stdio.h>

void selrecursive(int [], int, int, int, int);

void seliterative(int [],int );

int main()

{

int arr[30], n, temp, i, j;

printf("Enter the size of array:");

scanf("%d", &n);

printf("\n\nEnter the elements of array:\n");

for (i = 0; i < n; i++)

{

scanf("\n%d", &arr[i]);

}

selrecursive(arr, 0, 0, n, 1);

printf("\n\nThe sorted array in ascending order using recursion: ");

for (i = 0; i < n; i++)

{

printf("%d ", arr[i]);

}

seliterative(arr,n);

return 0;

}

void selrecursive(int arr[], int i,int j,int n,int flag)

{

int temp;

if (i < n - 1)

{

if (flag)

{

j = i + 1;

}

if (j < n)

{

if (arr[i] > arr[j])

{

temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

selrecursive(arr, i, j + 1, n, 0);

}

selrecursive(arr, i + 1, 0, n, 1);

}

}

void seliterative(int arr[], int n)

{

int temp;

for(int i=0;i<n;i++){

for(int j=i+1;j<n;j++){

if(arr[i]<arr[j]){

temp=arr[i];

arr[i]=arr[j];

arr[j]=temp;

}

}

}

printf("\n\nThe sorted array in descending order using without recursion: ");

for (int i = 0; i < n; i++)

{

printf("%d ", arr[i]);

}

for(int i=0;i<n;i++){

for(int j=i+1;j<n;j++){

if(arr[i]>arr[j]){

temp=arr[i];

arr[i]=arr[j];

arr[j]=temp;

}

}

}

printf("\n\nThe sorted array in ascending order using without recursion: ");

for (int i = 0; i < n; i++)

{

printf("%d ", arr[i]);

}

}

**Output-**

