**Practical No: 05**

1. **Write a program to implement bubble sort.**

**CODE:**

#include<iostream>

using namespace std;

int a[5],i,j,s=5;

void bubblesortingdesc()

{

for(i=0;i<s-1;i++){

for(j=0;j<s-1;j++)

{

if(a[j]<a[j+1])

{

int temp=a[j];

a[j]=a[j+1];

a[j+1]=temp;

}

}

}

cout<<"Array in descending order :"<<endl;

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

{

cout<<a[i]<<" ";

}

cout<<endl;

}

void bubblesortingasc(){

for(i=0;i<s-1;i++){

for(j=0;j<s-1;j++){

if(a[j]>a[j+1]){

int temp=a[j];

a[j]=a[j+1];

a[j+1]=temp;

}

}

}

cout<<"Array in ascending order :"<<endl;

for(i=0;i<s;i++){

cout<<a[i]<<" ";

}

cout<<endl;

}

int main()

{

cout<<"Enter the element of array :";

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

{

cin>>a[i];

}

cout<<"Array without sort :"<<endl;

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

{

cout<<a[i]<<" ";

}

cout<<endl;

bubblesortingasc();

bubblesortingdesc();

}

**OUTPUT:**

**….………………………………………………………………………………………………..**

Enter the element of array :15

63

89

31

70

Array without sort :

15 63 89 31 70

Array in ascending order :

15 31 63 70 89

Array in descending order :

89 70 63 31 15

**….……………………………………………………………………………………………….**

**b. Write a program to implement selection sort.**

**CODE:**#include<iostream>

using namespace std;

int a[5],i,j,s=5;

void selectionsort(){

for(i=0;i<s-1;i++){

for(j=i+1;j<s;j++){

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

int temp=a[j];

a[j]=a[i];

a[i]=temp;

}

}

}

cout<<"Array in descending order :"<<endl;

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

{

cout<<a[i]<<" ";

}

cout<<endl;

}

int main()

{

cout<<"Enter the element of array";

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

{

cin>>a[i];

}

cout<<"Array without sort : "<<endl;

for(i=0;i<s;i++){

cout<<a[i]<<" ";

}

selectionsort();

}

**OUTPUT:**

**….……………………………………………………………………………….**

Enter the element of array46

35

78

93

67

Array without sort :

46 35 78 93 67

Array in descending order :

35 46 67 78 93

**….………………………………………………………………………………………….**

**c. Write a program to implement insertion sort.**

**CODE:**

#include <iostream>

using namespace std;

int a[5],n=4,i,j,key;

void insertionSort(){

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

key = a[i];

j = i - 1;

while (j >= 0 && a[j] > key) {

a[j + 1] = a[j];

j = j - 1;

}

a[j + 1] = key;

}

}

void printArray(){

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

cout << a[i] << " ";

cout << endl;

}

int main(){

cout<<"Enter the element of array";

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

cin>>a[i];

}

insertionSort();

printArray();

}

**OUTPUT:**

**….………………………………………………………………………………………………**

Enter the element of array78

63

12

96

12 63 78 96

….……………………………………………………………………………….