Assignment Number: 14

**Subject: Data Structure and Algorithms**

**Name: Shrirang Mhalgi**

**Roll No.:222006**

**Class: S.E**

**Division: B**

**Batch: B1**

**Title/Problem Statement:**

Write C++ program to store first year percentage of students in array. Write function for sorting array of floating point numbers in ascending order using a) Selection Sort b) Bubble sort and display top five scores.

**CODE**

#include<iostream>

#include<stdlib.h>

using namespace std;

void Bubble(float \* , int);

void Selection(float\* ,int);

int main()

{

int i,j,n,ch;

float \*arr;

cout<<"Enter the number of the Students : ";

cin>>n;

arr=(float\*)malloc(sizeof(float)\*n);

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

{

cout<<"Enter the Percent of the student with roll no "<<i+1<<" : ";

cin>>arr[i];

}

cout<<"\n";

cout<<"\n\tList of Percentage of Students : "<<endl;

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

{

cout<<"\t"<<arr[i];

}

cout<<endl;

do{

cout<<"\n\n\tENTER : ";

cout<<"\n\t1.To Sort the Percentage using Bubble Sort : ";

cout<<"\n\t2.To Sort the Percentage using Selection Sort : ";

cout<<"\n\t0.Exit!!! \n";

cin>>ch;

switch(ch)

{

case 1:

Bubble(arr,n);

break;

case 2:

Selection(arr,n);

break;

}

}while(ch!=0);

return 0;

}

void Bubble(float\* arr1,int no)

{

float temp;

for(int i=0;i<no;i++)

{

for(int j=i+1;j<no;j++)

{

if(arr1[i]>arr1[j])

{

temp=arr1[i];

arr1[i]=arr1[j];

arr1[j]=temp;

}

}

}

cout<<"\n\tThe Percentage of Students in Sorted order : \n";

for(int i=0;i<no;i++)

{

cout<<"\t"<<arr1[i];

}

}

void Selection(float \*arr1, int no)

{

int smallest;

float temp;

for(int i=0;i<no-1;i++)

{

smallest = i;

for(int j=i+1;j<no;j++)

{

if(arr1[smallest]>arr1[j])

{

smallest=j;

}

}

if(i!=smallest)

{

temp=arr1[i];

arr1[i]=arr1[smallest];

arr1[smallest]=temp;

}

}

cout<<"\n\tThe Percentage of Students in Sorrted order : \n";

for(int i=0;i<no;i++)

{

cout<<"\t"<<arr1[i];

}

}

/\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*OUTPUT\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Enter the number of the Students : 5

Enter the Percent of the student with roll no 1 : 78

Enter the Percent of the student with roll no 2 : 58

Enter the Percent of the student with roll no 3 : 91

Enter the Percent of the student with roll no 4 : 88

Enter the Percent of the student with roll no 5 : 86

List of Percentage of Students :

78 58 91 88 86

ENTER :

1.To Sort the Percentage using Bubble Sort :

2.To Sort the Percentage using Selection Sort :

0.Exit!!!

1

The Percentage of Students in Sorted order :

58 78 86 88 91

ENTER :

1.To Sort the Percentage using Bubble Sort :

2.To Sort the Percentage using Selection Sort :

0.Exit!!!

2

The Percentage of Students in Sorted order :

58 78 86 88 91

ENTER :

1.To Sort the Percentage using Bubble Sort :

2.To Sort the Percentage using Selection Sort :

0.Exit!!!

0

\*/