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**ROLL NO:-SECOA115**

**ASSIGNMENT NO:-13**

**AIM** **:-** 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.

**PROGRAM:-**

#include<iostream>

using namespace std;

class sort

{

int i,n,j;

public:

float m[50];

void accept()

{

cout<<"enter total students\n";

cin>>n;

cout<<"enter marks of student\n";

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

{

cin>>m[i];

}

}

float getm()

{

return m[50];

}

int getn()

{

return n-1;

}

void display()

{

cout<<"Marks are as follows\n";

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

{

cout<<m[i]<<" ";

}

cout<<endl;

}

void selection\_sort()

{

float temp;

int min;

for(i=0;i<n-1;i++)

{

min=i;

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

{

if(m[j]<m[min])

{

min=j;

}

}

if(min!=i)

{

temp=m[i];

m[i]=m[min];

m[min]=temp;

}

}

}

void insertion\_sort()

{

float temp;

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

{

temp=m[i];

for(j=i-1;j>=0 && m[j]>temp;j--)

{

m[j+1]=m[j];

}

m[j+1]=temp;

}

}

void bubble\_sort()

{

float t;

for(i=0;i<n-1;i++)

{

for(j=0;j<n-1-i;j++)

{

if(m[j]>m[j+1])

{

t=m[j];

m[j]=m[j+1];

m[j+1]=t;

}

}

}

}

void top5()

{

float a;

for(i=n-1;i>=n-5;i--)

{

cout<<m[i]<<" ";

}

cout<<endl;

}

};

int main()

{

sort s1,s2,s3,s4;

s1.accept();

s1.display();

int ch,in,a,temp;

do

{

cout<<"1.bubble sort\n2.selection sort\n3.insertion sort\n4.display top 5\n";

cin>>ch;

switch(ch)

{

case 1:

s1.bubble\_sort();

cout<<"this is after bubble sort\n";

s1.display();

break;

case 2:

s1.selection\_sort();

cout<<"this is after selection sort\n";

s1.display();

break;

case 3:

s1.insertion\_sort();

cout<<"this is after insertion sort\n";

s1.display();

break;

case 4:

s1.top5();

break;

}

cout<<"continue?\nPress 1 to continue\n";

cin>>in;

}while(in==1);

return 0;

}

**OUTPUT:**

enter total students

5

enter marks of student

55 88 22 15 34

Marks are as follows

55 88 22 15 34

1.bubble sort

2.selection sort

3.insertion sort

4.display top 5

1

this is after bubble sort

Marks are as follows

15 22 34 55 88

continue?

Press 1 to continue

1

1.bubble sort

2.selection sort

3.insertion sort

4.display top 5

2

this is after selection sort

Marks are as follows

15 22 34 55 88

continue?

Press 1 to continue

1

1.bubble sort

2.selection sort

3.insertion sort

4.display top 5

3

this is after insertion sort

Marks are as follows

15 22 34 55 88

continue?

Press 1 to continue

1

1.bubble sort

2.selection sort

3.insertion sort

4.display top 5

4

88 55 34 22 15

continue?

Press 1 to continue

0