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**ROLL NO:-SECOA115**

**ASSIGNMENT NO:-14**

**AIM** **:-** Write C++ program to store first year percentage of students in array. Sort array of floating point numbers in ascending order using quick sort and display top five scores.

**PROGRAM:-**

#include<iostream>

using namespace std;

class sort

{

//float m[50];

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 top5()

{

float a;

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

{

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

}

cout<<endl;

}

void quick(float a[],int l,int h)

{

int j;

if(l<h)

{

j=partition(a,l,h);

quick(a,l,j-1);

quick(a,j+1,h);

}

}

int partition(float a[],int l,int u)

{

int v,i,j,temp;

v=a[l];

i=l;

j=u+1;

do

{

do

{

i++;

}while(a[i]<=v&&i<=u);

do

{

j--;

}while(v<a[j]);

if(i<j)

{

temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}while(i<j);

a[l]=a[j];

a[j]=v;

return j;

}

};

int main()

{

sort s1,s2,s3,s4;

s1.accept();

s1.display();

int ch,in,a,temp;

do

{

cout<<"Enter\n1.quick sort\n2.top 5 students roll no\n";

cin>>ch;

switch(ch)

{

case 1:

s1.quick(s1.m,0,s1.getn());

s1.display();

break;

case 2:

s1.top5();

break;

}

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

cin>>in;

}while(in==1);

return 0;

}

**OUTPUT:**

enter total students

6

enter marks of student

55 88 33 22 12 09

Marks are as follows

55 88 33 22 12 9

Enter

1.quick sort

2.top 5 students roll no

1

Marks are as follows

9 12 22 33 55 88

continue?

Press 1 to continue

1

Enter

1.quick sort

2.top 5 students roll no

2

88 55 33 22 12

continue?

Press 1 to continue

0