Assignment no 10

Name:Sanchit Thakare

Roll no:COB-246

Program :

#include<iostream>

#include<math.h>

using namespace std;

# define max1 20

class stud

{

public:

int marks[max1], total;

stud()

{

for(int i=0;i<max1;i++)

marks[i]=0;

}

void createHeap();

void displayHeap();

void showmax();

void showmin();

};

void stud::createHeap()

{

int i,j,par,temp,M;

cout<<"\n Enter How many Stu : ";

cin>>total; //5

for(i=0;i<total;i++) //0-4=5 times

{

cout<<"\n Enter Marks : ";

cin>>marks[i];

M=marks[i];

j=i;//j is child

par=floor((j-1)/2);

while(marks[j] < marks[par] && j!=0)

{

temp=marks[j];

marks[j]=marks[par];

marks[par]=temp;

j=par;

par=floor((j-1)/2);

}

cout<<"\n \n Current Heap : After Inserting : " <<M<<" is : \n ";

displayHeap();

}

}

void stud::displayHeap()

{

int i=0,space=6;

cout<<endl;

while(i<total)

{

if(i==0 || i==1 || i==3 || i==7 || i==15)

{

cout<<endl<<endl;

for(int j=0;j<space;j++)

cout<<" ";

space-=2;

}

cout<<" "<<marks[i];i++;

}

}

void stud::showmin()

{

cout<<marks[0];

}

void stud::showmax()

{

int max,i;

max=marks[0];

for(i=1;i<total;i++)

{

if(max < marks[i])

max=marks[i];

}

cout<<max;

}

int main()

{

stud s1;

int ch, ans;

do

{

cout<<"\n 1. Insert Marks ";

cout<<"\n 2. Display Marks ";

cout<<"\n 3. Show Max Marks ";

cout<<"\n 4. Show Min Marks ";

cout<<"\n\n Enter Your Choice : ";

cin>>ch;

switch(ch)

{

case 1:

s1.createHeap();

break;

case 2:

s1.displayHeap();

break;

case 3: s1.showmax();

break;

case 4: s1.showmin();

break;

}

cout<<" \n Do u want to continue : (1 for continue )";

cin>>ans;

}while(ans==1);

return 0;}

Output:



