**Name:-** Vaishali Bharat Sapkal

**Roll No.:-** 130

**Assignment No.:-**

**Assignment Name:-**

#include<conio.h>

#include<iostream.h>

#include<stdlib.h>

class LIST

{

int \* A,n;

public:

LIST(int);

void READ\_LIST\_130();

void SHOW\_LIST\_130();

void HEAPIFY\_130();

void ADJUST\_130(int,int);

void HEAP\_SORT\_130();

};

LIST::LIST(int par)

{

n=par;

A=new int(n \* 2);

}

void LIST::READ\_LIST\_130()

{

cout<<endl<<"Enter element";

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

{

cin>>A[i];

//A[i]=random(999)

}

A[i]=9999;

}

void LIST::SHOW\_LIST\_130()

{

cout<<endl;

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

cout<<A[i]<<" ";

}

void LIST::HEAPIFY\_130()

{

for(int i=n/2;i>=1;i--)

{

ADJUST\_130(i,n);

}

}

void LIST::ADJUST\_130(int i,int noe)

{

int item=A[i];

int j=2\*i;

while(j<=noe)

{

if(j<noe && A[j]<A[j+1])

j=j+1;

if(item>A[j])

break;

else

{

A[j/2]=A[j];

j=j\*2;

}

}

A[j/2]=item;

}

void LIST::HEAP\_SORT\_130()

{

HEAPIFY\_130();

for(int i=n;i>=2;i--)

{

{

//EXCH

int temp=A[1];

A[1]=A[i];

A[i]=temp;

}

ADJUST\_130(1,i-1);

}

}

void main()

{

int no;

clrscr();

cout<<endl<<"Enter no of element:";

cin>>no;

LIST obj(no);

obj.READ\_LIST\_130();

cout<<endl<<"list before sorting";

obj.SHOW\_LIST\_130();

obj.HEAPIFY\_130();

obj.HEAP\_SORT\_130();

//obj.HEAP\_SORT\_DESC\_130();

cout<<endl<<"list after sorting:";

obj.SHOW\_LIST\_130();

getch();

}