**PROGRAM NO.:– 2**

**AIM:** **Write a program to sort given set of numbers using Heap sort.**

**SOURCE CODE:**

#include<stdio.h>

#include<conio.h>

int a[20],l=0,heap\_size=0;

void swap(int &a,int &b)

{

int temp=a;

a=b;

b=temp;

}

void heapify(int i)

{

int l,r,largest;

l=2\*i;

r=2\*i+1;

if(l<=heap\_size && a[l]>a[i])

largest=l;

else

largest=i;

if(r<=heap\_size && a[r]>a[largest])

largest=r;

if(largest!=i)

{

swap(a[i],a[largest]);

heapify(largest);

}

}

void build\_heap()

{

heap\_size=l;

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

heapify(i);

}

void print()

{

printf("after sorting,array elements are \n");

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

printf("%d\t",a[i]);

printf("\n");

}

void main()

{

clrscr();

printf("enter size of array");

scanf("%d",&l);

printf("enter array elements");

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

scanf("%d",&a[i]);

build\_heap();

for(int j=l;j>=2;j--)

{

swap(a[j],a[1]);

heap\_size=heap\_size-1;

heapify(1);

}

print();

getch();

}

**Output:**

