**ADA LAB-10**

* **Heap sort** 
  + - * **Program**

#include<stdio.h>

#include<stdlib.h>

void heap\_tree\_construction(int a[],int n)

{

int r,c,i;

int item;

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

item=a[i];

c=i;

r=(c-1)/2;

while(c>0 && item>a[r]){

a[c]=a[r];

c=r;

r=(c-1)/2;

}

a[c]=item;

}

}

void heap\_adj(int a[],int n)

{

int item;

int r,c;

r=0;

item=a[r];

c=2\*r+1;

while(c<=n-1){

if((c+1)<=n-1){

if(a[c]<a[c+1])

c=c+1;

}

if(item<a[c]){

a[r]=a[c];

r=c;

c=2\*r+1;

}else{

break;

}

}

a[r]=item;

}

void heap\_sort(int a[],int n)

{

int i,temp;

heap\_tree\_construction(a,n);

for(i=n-1;i>0;i--){

temp=a[0];

a[0]=a[i];

a[i]=temp;

heap\_adj(a,i);

}

}

int main()

{

int i,n,a[10];

printf("ENTER THE NUMBER OF ELEMENTS\n");

scanf("%d",&n);

printf("ENTER THE ELEMENTS OF THE ARRAY\n");

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

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

}

heap\_sort(a,n);

printf("SORTED ARRAY:\n");

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

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

}

}

* + - * **Output**

