**PRACTICAL NO: 10**

**PROGRAM CODE:**

#include<iostream>

using namespace std;

class Heap

{

int n;

int \*minheap,\*maxheap;

public:

void get();

void displayMin(){cout<<"Minimum marks are :"<<minheap[0]<<endl;}

void displayMax(){cout<<"Maximum marks are :"<<maxheap[0]<<endl;}

void upAdjust(bool,int);

};

void Heap::get()

{

cout<<"Enter number of students."<<endl;

cin>>n;

int k;

minheap=new int[n];

maxheap=new int[n];

cout<<"Enter marks of students."<<endl;

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

{

cin>>k;

minheap[i]=k;

upAdjust(0,i);

maxheap[i]=k;

upAdjust(1,i);

}

}

void Heap::upAdjust(bool m,int l)

{

int s;

if(!m)

{

while(minheap[(l-1)/2]<minheap[l])

{

s=minheap[l];

minheap[l]=minheap[(l-1)/2];

minheap[(l-1)/2]=s;

l=(l-1)/2;

if(l==-1)

break;

}

}

else

{

while(maxheap[(l-1)/2]>maxheap[l])

{

s=maxheap[l];

maxheap[l]=maxheap[(l-1)/2];

maxheap[(l-1)/2]=s;

l=(l-1)/2;

if(l==-1)

break;

}

}

}

main()

{

Heap H;

H.get();

H.displayMin();

H.displayMax();

return(0);

}

**OUTPUT:**

Enter number of students.

10

Enter marks of students.

12

35

43

22

18

45

33

37

41

16

Minimum marks are :45

Maximum marks are :12

Enter number of students.

13

Enter marks of students.

13

16

17

18

13

50

50

35

23

33

43

56

56

Minimum marks are :56

Maximum marks are :13