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Assignment 10

Input Code :

```cpp
 #include <iostream>
using namespace std;

class hp
{
    int heap[20],heap1[20],x,n1,i;
public:
     hp()
    {   heap[0]=0;  heap1[0]=0;
    }   void getdata();   void
insert1(int heap[],int);   void
upadjust1(int heap[],int);    void
insert2(int heap1[],int);    void
upadjust2(int heap1[],int);    void
minmax(); }; void hp::getdata()
{
    cout<<"\n Enter The Number of Students:";
cin>>n1;    cout<<"\n Enter The Marks:";
for(i=0;i<n1;i++)    {   cin>>x;
insert1(heap,x);        insert2(heap1,x);
    }
}
void hp::insert1(int heap[20],int x)
{    int n;
n=heap[0];
heap[n+1]=x;
heap[0]=n+1;

    upadjust1(heap,n+1);
}
void hp::upadjust1(int heap[20],int i)
{     int
temp;
    while(i>1&&heap[i]>heap[i/2])
     {
temp=heap[i];
heap[i]=heap[i/2];
heap[i/2]=temp;
i=i/2;
    }
}
void hp::insert2(int heap1[20],int x)
{    int n;
n=heap1[0];
heap1[n+1]=x;
heap1[0]=n+1;

    upadjust2(heap1,n+1);
}
void hp::upadjust2(int heap1[20],int i)
```

```cpp
{       int
temp1;
    while(i>1&&heap1[i]<heap1[i/2])
      {
temp1=heap1[i];
heap1[i]=heap1[i/2];
heap1[i/2]=temp1;
i=i/2;
    } } void
hp::minmax() {
   cout<<"\n Max Marks: "<<heap[1];
cout<<"\n";     for(i=1;i<=n1;i++)
   {     cout<<"\n"<<heap[i];
   }

   cout<<"\n Min Marks: "<<heap1[1];
cout<<"\n";     for(i=1;i<=n1;i++)
   {     cout<<"\n"<<heap1[i];
   }

}

int main()
{   hp h;
  h.getdata();
  h.minmax();
return 0;
}
```

Output Code :

```
Enter The Number of Students: 5

Enter The Marks:

10
24
6
8
9

Max Marks: 24

24
10
6
8
9

Min Marks: 6

6
8
10
24
9
```