Assignment No: - 6.1.1
Assignment Name: - Write a program on Heap Sort in Ascending Order.
Name:-Sagar Madan Saitwal
Roll No:-113

//HeapSort in Ascending Order

```
#include <iostream.h>
#include <conio.h>
class HEAPSORT
{
        private:
                int*A,n;
        public:
                HEAPSORT(int size);
                void READ();
                void ADJUST(int node, int n);
                void HEAPIFY();
                void DISPLAY();
                void HSORT();
};
HEAPSORT :: HEAPSORT(int size)
{
        n = size;
        A= new int[n+1];
}
void HEAPSORT :: READ()
{
        for(int i=1; i<=n; i++)
        {
          cin>>A[i];
        }
}
void HEAPSORT :: ADJUST(int node, int n)
{
        int j, item;
        j = 2*node;
        item = A[node];
        while(j<=n)
        {
                if(j < n && A[j] < A[j+1])
                {
                        j = j + 1;
                }
                if(item>A[j])
                        break;
                else
                        A[j/2] = A[j];
                j = 2*j;
```

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        }
        A[j/2] = item;
}
void HEAPSORT :: HEAPIFY()
{
        for(int i= n/2; i>=1; i--)
        {
                ADJUST(i,n);
        }
}
void HEAPSORT :: HSORT()
{
        for(int i = n; i>=2; i--)
        {
                int temp = A[1];
                A[1] = A[i];
                A[i] = temp;
                ADJUST(1,i-1);
        }
}
void HEAPSORT :: DISPLAY()
{
        for(int i=1; i<=n; i++)
        {
                cout<<A[i]<<" ";
        }
}
void main()
{
        clrscr();
        int size;
        cout<<"Enter the size of list: ";
        cin>>size;
        HEAPSORT obj(size);
        obj.READ();
        cout<<"\nYou Entered Elements : ";
        obj.DISPLAY();
        obj.HEAPIFY();
        obj.HSORT();
        cout<<"\nElements after HEAPSORT: ";
        obj.DISPLAY();
        getch();
}
```