

Assignment No: - 6.1.2**Assignment Name: -** Write a program on Heap Sort in Descending Order.**Name:-**Sagar Madan Saitwal**Roll No:-**113

//HeapSort in Descending 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();
    obj.HEAPIFY();
    obj.HSORT();
    cout<<"\n\nElements after HEAPSORT: ";
    obj.DISPLAY();
    getch();
}

```