```
#include<iostream>
using namespace std;
void MaxHeapify(int* arr,int n, int i)
{
   int left, right,largest,temp;
   left = (2*i) ;
   right = (2*i) + 1 ;
   if(left<=n && arr[left]>=arr[i])
      {largest = left ;}
   else
     { largest = i; }
   if(right<=n && arr[right]>=arr[largest])
     { largest=right;}
   if(largest!=i)
   {
      temp = arr[largest];
      arr[largest]= arr[i];
      arr[i] = temp;
      MaxHeapify(arr,n,largest);
   }
}
```

```
void BuildmaxHeap(int * arr,int n)
{
   int heapSize = n;
   int heapArray[heapSize];
   for(int i = heapSize/2 ; i>=1 ; i--)
   {
      MaxHeapify(arr,n,i);
   }
}
void HeapSort(int * arr,int n)
{
   int temp;
   int heap_size = n;
   for(int i = n ; i>=2 ; i--)
   {
      temp = arr[1];
      arr[1] = arr[i];
      arr[i] = temp;
      heap_size = heap_size - 1;
      MaxHeapify(arr,heap_size,1);
   }
}
```

```
int main()
{
   int arr[100],n;
   cout<< "\n Enter a size of the array::";
   cin>>n ;
   cout<< "\n Insert The Element Into The Array::";
   for(int i = 1 ; i<=n ; i++)
      cin>>arr[i];
   cout<< "\n The Max-Heap is::";
   BuildmaxHeap(arr,n);
   for(int i = 1 ; i<=n ; i++)
   {
      cout<<arr[i]<<" ";
   }
   cout<<endl;
   cout<< "\n After The Sorting Array ::";
   HeapSort(arr,n);
   for(int i = 1 ; i<=n ; i++)
      cout<<arr[i]<<" ";
   cout<<"\n-----------------------------------------------------";
   return 0;
}
```