```cpp
/*Write a program to implement Heap sort
method.. */
#include <iostream>
using namespace std;

// Function to heapify the tree
void heapify(int arr[], int n, int i)
{
    int largest = i;
    int l = 2*i + 1;
    int r = 2*i + 2;

    if (l < n && arr[l] > arr[largest])
        largest = l;

    if (r < n && arr[r] > arr[largest])
        largest = r;

    if (largest != i)
    {
        swap(arr[i], arr[largest]);
        heapify(arr, n, largest);
    }
}

// Main function to sort the array
void heapSort(int arr[], int n)
{
    for (int i = n / 2 - 1; i >= 0; i--)
        heapify(arr, n, i);

    for (int i=n-1; i>=0; i--)
    {
        swap(arr[0], arr[i]);
        heapify(arr, i, 0);
    }
}

int main()
{
    int arr[] = {12, 11, 13, 5, 6, 7};
    int n = sizeof(arr)/sizeof(arr[0]);

    heapSort(arr, n);

    for (int i=0; i<n; ++i)
        cout << arr[i] << " ";

    return 0;
}
```