#include <stdio.h>

void swap(int\* a, int\* b)

{

int temp = \*a;

\*a = \*b;

\*b = temp;

}

void heapify(int arr[], int N, int i)

{

int largest = i;

int left = 2 \* i + 1;

int right = 2 \* i + 2;

if (left < N && arr[left] > arr[largest])

largest = left;

if (right < N && arr[right] > arr[largest])

largest = right;

if (largest != i) {

swap(&arr[i], &arr[largest]);

heapify(arr, N, largest);

}

}

void heapSort(int arr[], int N)

{

// Build max heap

for (int i = N / 2 - 1; i >= 0; i--)

heapify(arr, N, i);

// Heap sort

for (int i = N - 1; i >= 0; i--) {

swap(&arr[0], &arr[i]);

// Heapify root element to get highest element at

// root again

heapify(arr, i, 0);

}

}

void printArray(int arr[], int N)

{

for (int i = 0; i < N; i++)

printf("%d ", arr[i]);

printf("\n");

}

int main()

{

int arr[] = { 12, 11, 13, 5, 6, 7 };

int N = sizeof(arr) /

sizeof(arr[0]);

heapSort(arr, N);

printf("Sorted array is\n");

printArray(arr, N);

}