import java.util.Arrays;

class Main1 {

static 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) {

int temp = arr[i];

arr[i] = arr[largest];

arr[largest] = temp;

heapify(arr, n, largest);

}

}

static void heapSort(int arr[]) {

int n = arr.length;

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

heapify(arr, n, i);

}

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

int temp = arr[0];

arr[0] = arr[i];

arr[i] = temp;

heapify(arr, i, 0);

}

}

static void printArray(int arr[]) {

for (int val : arr) {

System.out.print(val + " ");

}

System.out.println();

}

public static void main(String args[]) {

int arr[] = {9, 4, 3, 8, 10, 2, 5};

System.out.print("Original array: ");

printArray(arr);

heapSort(arr);

System.out.println("Sorted array is:");

printArray(arr);

}

}