import java.io.\*;

class Main1 {

static void merge(int arr[], int l, int m, int r) {

int n1 = m-l+1;

int n2 = r-m;

int L [] =new int[n1];

int R [] =new int[n2];

for(int i=0;i<n1;i++)

L[i]=arr[i+i];

for(int j=0; j<n2;j++)

R[j]=arr[m+1+j];

int i=0,j=0;

int k=i;

while(i<n1 && j<n2) {

if(L[i] <= R[j]) {

arr[k] = L[i];

i++;

}

else {

arr[k]=R[j];

j++;

}

k++;

}

while(i<n1) {

arr[k] = L[i];

i++;

k++;

}

while(j<n2) {

arr[k] = R[j];

j++;

k++;

}

}

static void Sort(int arr[], int I, int r) {

if(I<r) {

int m=I+(r-I)/2;

Sort(arr, I, m);

Sort(arr, m+1, r);

merge(arr, I, m, r);

}

}

static void printArray(int arr[]) {

int n=arr.length;

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

System.out.print(arr[i] + " ");

System.out.println();

}

public static void main(String args[]) {

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

System.out.println("Given array is");

printArray(arr);

Sort(arr,0,arr.length-1);

System.out.println("\n sorted array is");

printArray(arr);

}

}