/\* package codechef; // don't place package name! \*/

import java.util.\*;

import java.lang.\*;

import java.io.\*;

/\* Name of the class has to be "Main" only if the class is public. \*/

class Codechef

{

public static void main (String[] args) throws java.lang.Exception

{

int[] arr1={55, 66, 77, 88, 99};

int[] arr2={2,6,19,25,188,198};

int[] arr={20,10,30,50,60,5,78,25,80};

display(mergeSort(arr,0,arr.length-1));

}

public static int[] mergeSort(int[] arr,int lo,int hi){

if(lo==hi){

int[] br=new int[1];

br[0]=arr[lo];

return br;

}

int mid=(lo+hi)/2;

int[] fh=mergeSort(arr,lo,mid);

int[] sh=mergeSort(arr,mid+1,hi);

int[] merged=merge(fh,sh);

return merged;

}

public static int[] merge(int[] arr1,int[] arr2){

int i=0;

int j=0;

int k=0;

int[] merged=new int[arr1.length+arr2.length];

while(i<arr1.length&&j<arr2.length){

if(arr1[i]<arr2[j]){

merged[k]=arr1[i];

i++;

k++;

}else{

merged[k]=arr2[j];

j++;

k++;

}

}

if(i==arr1.length){

while(j<arr2.length){

merged[k]=arr2[j];

j++;

k++;

}

}

if(j==arr2.length){

while(i<arr1.length){

merged[k]=arr1[i];

i++;

k++;

}

}

return merged;

}

public static void display(int[] arr){

for(int i=0;i<arr.length;i++){

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

}

}

}