using System;

class MergeSortAlgorithm

{

public static void MergeSort(int[] input, int low, int high)

{

if (low < high)

{

int middle = (low+high)/2;

MergeSort(input, low, middle);

MergeSort(input, middle + 1, high);

Merge(input, low, middle, high);

}

}

private static void Merge(int[] input, int low, int middle, int high)

{

int left = low;

int right = middle + 1;

int[] tmp = new int[(high - low) + 1];

int tmpIndex = 0;

while ((left <= middle) && (right <= high))

{

if (input[left] < input[right])

{

tmp[tmpIndex] = input[left];

left = left + 1;

}

else

{

tmp[tmpIndex] = input[right];

right = right + 1;

}

tmpIndex = tmpIndex + 1;

}

if (left <= middle)

{

while (left <= middle)

{

tmp[tmpIndex] = input[left];

left = left + 1;

tmpIndex = tmpIndex + 1;

}

}

if (right <= high)

{

while (right <= high)

{

tmp[tmpIndex] = input[right];

right = right + 1;

tmpIndex = tmpIndex + 1;

}

}

for (int i = 0; i < tmp.Length; i++)

{

input[low + i] = tmp[i];

}

}

public static void Main(String[] args)

{

int[] arr = { 2, 5, 3, 77, 8, 12, 3 };

MergeSort(arr, 0, 6);

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

Console.WriteLine(arr[i]);

}

}