Given an array of integers, sort its elements by the *difference* of their largest and smallest digits. In the case of a tie, that with the larger index in the array should come first.

Example

For a = [152, 23, 7, 887, 243], the output should be  
digitDifferenceSort(a) = [7, 887, 23, 243, 152].

Here are the *differences* of all the numbers:

* 152: difference = 5 - 1 = 4;
* 23: difference = 3 - 2 = 1;
* 7: difference = 7 - 7 = 0;
* 887: difference = 8 - 7 = 1;
* 243: difference = 4 - 2 = 2.

23 and 887 have the same *difference*, but 887 goes after 23 in a, so in the sorted array it comes first.

Input/Output

* **[execution time limit] 3 seconds (cs)**
* **[input] array.integer a**

An array of integers.

*Guaranteed constraints:*  
0 ≤ sequence.length ≤ 104,  
1 ≤ sequence[i] ≤ 105.

* **[output] array.integer**
  + Array a sorted as described above.

<https://app.codesignal.com/arcade/code-arcade/sorting-outpost/2SFFWqkhkqC7mMBse/description>

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

namespace ConsoleApplication1

{

class Program

{

static int difMinMax(int n)

{

int min = int.MaxValue;

int max = int.MinValue;

while (n > 0)

{

int dig = n % 10;

min = Math.Min(min, dig);

max = Math.Max(max, dig);

n /= 10;

}

return max - min;

}

static int[] digitDifferenceSort(int[] a)

{

int[] dif = new int[a.Length];

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

{

dif[i] = difMinMax(a[i]);

// Console.Write(dif[i] + " ");

}

//Array.Sort(dif, a);

Console.WriteLine();

for (int i = 0; i < a.Length - 1; i++)

{

for (int j = i + 1; j < a.Length; j++)

{

if (dif[i] > dif[j])

{

int temp = dif[i];

dif[i] = dif[j];

dif[j] = temp;

int temp2 = a[i];

a[i] = a[j];

a[j] = temp2;

}

else if (dif[i] == dif[j])

{

int temp = dif[i];

dif[i] = dif[j];

dif[j] = temp;

int temp2 = a[j];

a[j] = a[i];

a[i] = temp2;

}

}

}

return a;

}

static void Main(string[] args)

{

int[] a = {152, 23, 7, 887, 243};

//Expected Output:

//[7, 887, 23, 243, 152]

int[] r = digitDifferenceSort(a);

foreach (int item in r)

{

Console.Write(item + " ");

}

Console.ReadLine();

}

}

}