

Day 3

<https://dotnettutorials.net/lesson/constructors-csharp/>

<https://www.exercisescsharp.com/oop/>

Problem Statement: Create a c# program that: 1. Concatenates all elements of an array into a single string 2. Extracts all numeric characters from the concatenated string. 3. Finds the maximum and minimum numbers formed from these characters. 4. Calculates the difference between the maximum and minimum numbers.

Input: ["apple1", "banana2", "cherry3"]

Output: · Concatenated String: "apple1banana2cherry3"

- Extracted Numbers: [1, 2, 3]
- Maximum Number: 3
- Minimum Number: 1
- Difference: 2

Solution:

```
using System;
```

```
using System.Linq;
```

```
public class HelloWorld
```

```
{
```

```
    public static void Main(string[] args)
```

```
    {
```

```
        // Take user input for the array elements
```

```
        Console.WriteLine("Enter the array elements separated by spaces:");
```

```
        string userInput = Console.ReadLine();
```

```
        string[] input = userInput.Split(' ');
```

```

// 1. Concatenate all elements of an array into a single string
string concatenatedString = string.Concat(input);
Console.WriteLine("Concatenated String: " + concatenatedString);

// 2. Extract all numeric characters from the concatenated string
var numericCharacters = concatenatedString.Where(char.IsDigit).ToArray();

int[] extractedNumbers = numericCharacters.Select(c =>
int.Parse(c.ToString())).ToArray();

Console.WriteLine("Extracted Numbers: [" + string.Join(", ", extractedNumbers) +
"]");

// 3. Find the maximum and minimum numbers formed from these characters
int maxNumber = extractedNumbers.Max();
int minNumber = extractedNumbers.Min();

Console.WriteLine("Maximum Number: " + maxNumber);
Console.WriteLine("Minimum Number: " + minNumber);

// 4. Calculate the difference between the maximum and minimum numbers
int difference = maxNumber - minNumber;

Console.WriteLine("Difference: " + difference);
}
}

```