C# Array Case Studies (Beginner to Intermediate)

CaseStudy1 SumArray

```
using System;

class Program
{
    static void Main()
    {
        int[] numbers = new int[5];
        int sum = 0;

        Console.WriteLine("Enter 5 numbers:");
        for (int i = 0; i < numbers.Length; i++)
        {
            numbers[i] = Convert.ToInt32(Console.ReadLine());
            sum += numbers[i];
        }

        Console.WriteLine("Sum of the numbers: " + sum);
    }
}
```

CaseStudy2 MaxMin

```
using System;

class Program
{
    static void Main()
    {
        int[] numbers = new int[6];
        Console.WriteLine("Enter 6 numbers:");

        for (int i = 0; i < numbers.Length; i++)
        {
            numbers[i] = Convert.ToInt32(Console.ReadLine());
        }

        int max = numbers[0];
        int min = numbers[0];

        foreach (int num in numbers)
        {
            if (num > max)
                max = num;
            if (num < min)
                min = num;
        }

        Console.WriteLine("Maximum: " + max);
        Console.WriteLine("Minimum: " + min);
    }
}
```

CaseStudy3 ReverseArray

```
using System;

class Program
{
    static void Main()
    {
        int[] numbers = new int[7];
        Console.WriteLine("Enter 7 numbers:");

        for (int i = 0; i < numbers.Length; i++)
        {
            numbers[i] = Convert.ToInt32(Console.ReadLine());
        }

        Console.WriteLine("Reversed Array:");
        for (int i = numbers.Length - 1; i >= 0; i--)
        {
            Console.Write(numbers[i] + " ");
        }
    }
}
```

CaseStudy4 EvenOddCount

```
using System;

class Program
{
    static void Main()
    {
        int[] numbers = new int[10];
        int evenCount = 0, oddCount = 0;

        Console.WriteLine("Enter 10 numbers:");

        for (int i = 0; i < numbers.Length; i++)
        {
            numbers[i] = Convert.ToInt32(Console.ReadLine());
            if (numbers[i] % 2 == 0)
                evenCount++;
            else
                oddCount++;
        }

        Console.WriteLine("Even numbers count: " + evenCount);
        Console.WriteLine("Odd numbers count: " + oddCount);
    }
}
```

CaseStudy5 ArrayCopy

```
using System;

class Program
{
    static void Main()
    {
        int[] originalArray = new int[5];
        int[] copiedArray = new int[5];

        Console.WriteLine("Enter 5 numbers:");
        for (int i = 0; i < originalArray.Length; i++)
        {
            originalArray[i] = Convert.ToInt32(Console.ReadLine());
        }

        for (int i = 0; i < originalArray.Length; i++)
        {
            copiedArray[i] = originalArray[i];
        }

        Console.WriteLine("Copied Array Elements:");
        foreach (int num in copiedArray)
        {
            Console.Write(num + " ");
        }
    }
}
```

CaseStudy6 StringNamesDisplay

```
using System;

class Program
{
    static void Main()
    {
        string[] names = new string[5];
        Console.WriteLine("Enter 5 names:");

        for (int i = 0; i < names.Length; i++)
        {
            names[i] = Console.ReadLine();
        }

        Console.WriteLine("\nNames entered:");
        foreach (string name in names)
        {
            Console.WriteLine(name);
        }
    }
}
```

CaseStudy7 SearchName

```
using System;

class Program
{
    static void Main()
    {
        string[] names = new string[5];
        Console.WriteLine("Enter 5 names:");

        for (int i = 0; i < names.Length; i++)
        {
            names[i] = Console.ReadLine();
        }

        Console.Write("\nEnter a name to search: ");
        string searchName = Console.ReadLine();
        bool found = false;

        foreach (string name in names)
        {
            if (name.Equals(searchName, StringComparison.OrdinalIgnoreCase))
            {
                found = true;
                break;
            }
        }

        if (found)
            Console.WriteLine(searchName + " was found!");
        else
            Console.WriteLine(searchName + " was not found.");
    }
}
```

CaseStudy8 LongestName

```
using System;

class Program
{
    static void Main()
    {
        string[] names = new string[5];
        Console.WriteLine("Enter 5 names:");

        for (int i = 0; i < names.Length; i++)
        {
            names[i] = Console.ReadLine();
        }

        string longestName = names[0];

        foreach (string name in names)
        {
            if (name.Length > longestName.Length)
                longestName = name;
        }

        Console.WriteLine("The longest name is: " + longestName);
    }
}
```