LAB-7

2100032064

Q1)

```
using System;
using System.Collections;
using System.Collections.Generic;

public class CustomArray<T> : IEnumerable<T>
{
    private T[] array;
    private int startIndex;

    public CustomArray(int length, int startIndex)
    {
        if (length <= 0)
            throw new ArgumentException("Length must be greater than zero.");

        this.array = new T[length];
        this.startIndex = startIndex;
    }

    public int FirstIndex => startIndex;
    public int LastIndex => startIndex + array.Length - 1;
    public int Length => array.Length;

    public T this[int index]
    {
        get
        {
            CheckIndex(index);
            return array[index - startIndex];
        }
        set
        {
            CheckIndex(index);
            array[index - startIndex] = value;
        }
    }

    public T[] ToStandardArray()
    {
        return array;
    }

    private void CheckIndex(int index)
    {
        if (index < startIndex || index >= startIndex + array.Length)
            throw new IndexOutOfRangeException($"Index {index} is out of
range.");
    }

    // Low Level Functionality
    public static CustomArray<T> CreateEmpty(int length, int startIndex)
    {
        return new CustomArray<T>(length, startIndex);
    }

    // Advanced Level Functionality
```

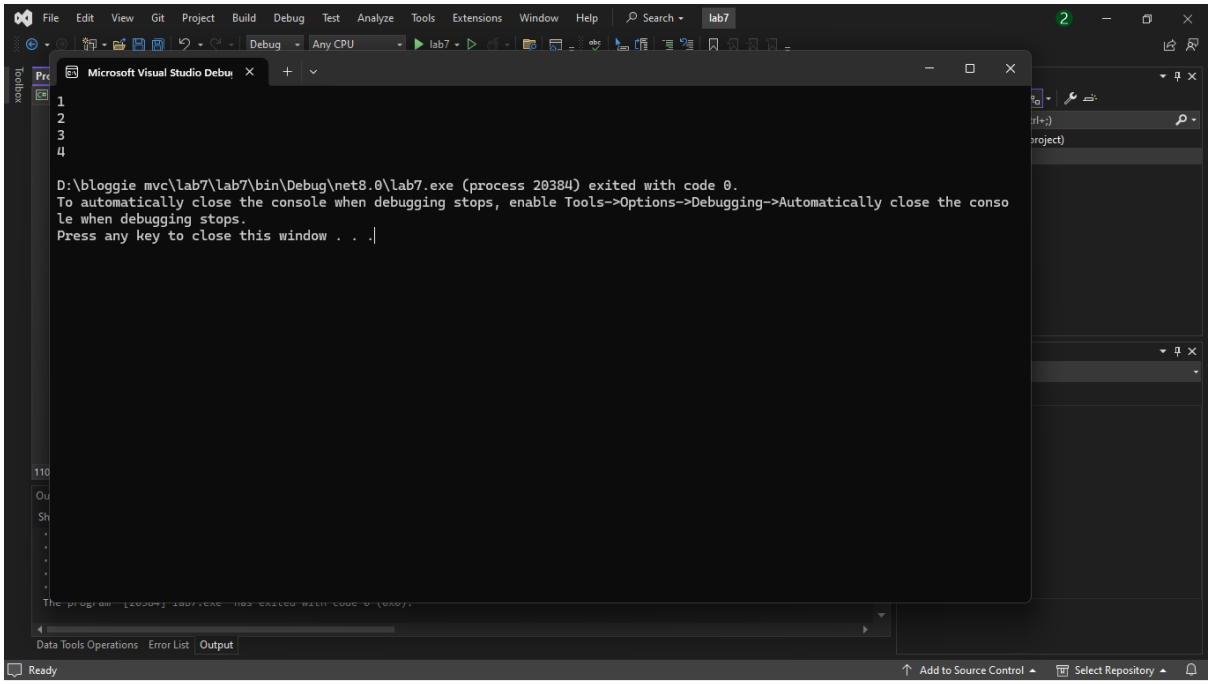
```
    public static CustomArray<T> CreateFromArray(int startIndex, params T[]
values)
    {
        var customArray = new CustomArray<T>(values.Length, startIndex);
        for (int i = 0; i < values.Length; i++)
        {
            customArray[i + startIndex] = values[i];
        }
        return customArray;
    }

    public IEnumerator<T> GetEnumerator()
    {
        return ((IEnumerable<T>)array).GetEnumerator();
    }

    IEnumerator IEnumerable.GetEnumerator()
    {
        return array.GetEnumerator();
    }
}

public class Program
{
    public static void Main(string[] args)
    {
        // Example usage of CustomArray
        CustomArray<int> intArray = CustomArray<int>.CreateFromArray(0, 1, 2, 3,
4);
        foreach (var item in intArray)
        {
            Console.WriteLine(item);
        }
    }
}
```

OUTPUT :


File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
lab7
Debug
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lab7
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1
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D:\bloggie mvc\lab7\lab7\bin\Debug\net8.0\lab7.exe (process 20384) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the conso
le when debugging stops.
Press any key to close this window . . .
Data Tools Operations
Error List
Output
Ready
Add to Source Control
Select Repository