2100030522

Syed Hasif Alisha

Lab – 7

```csharp
                CheckIndex(index);
                array[index - startIndex] = value;
            }
        }

        // Method to get the first index

        public int GetFirstIndex()
        {
            return startIndex;
        }

        // Method to get the last index

        public int GetLastIndex()
        {
            return startIndex + array.Length - 1;
        }

        // Method to get the length of the array

        public int GetLength()
        {
            return array.Length;
        }

        // Method to get values as a standard array starting from index 0

        public T[] ToStandardArray()
        {
            T[] standardArray = new T[array.Length];
            Array.Copy(array, standardArray, array.Length);
            return standardArray;
        }

        // Method to check if the index is within bounds

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



```csharp
        }

        // Implementation of IEnumerable.GetEnumerator method for foreach

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

        // Implementation of IEnumerable<T>.GetEnumerator method for foreach
        public IEnumerator<T> GetEnumerator()
        {
            for (int i = 0; i < array.Length; i++)
            {
                yield return array[i];
            }
        }
    }

    class Program
    {
        static void Main(string[] args)
        {
            // Low level functionality test
            CustomArray<int> intArray = new CustomArray<int>(10, 1); // Array of integers starting from index 1
            intArray[1] = 10;
            intArray[2] = 20;
            intArray[3] = 30;

            Console.WriteLine($"First index: {intArray.GetFirstIndex()}");
            Console.WriteLine($"Last index: {intArray.GetLastIndex()}");
            Console.WriteLine($"Array length: {intArray.GetLength()}");

            foreach (int num in intArray)
            {
                Console.WriteLine(num);
            }

            // Advanced functionality test
            CustomArray<string> stringArray = new CustomArray<string>(new string[] { "apple", "banana", "cherry" }, 5); // Array of strings starting from index 5
```