BRH Punchihewa

C# lab

Question 07

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp12
{
   internal class Program
   {
      static void Main(string[] args)
      {

            Console.WriteLine("Enter the size of the arrays:");
            int size = Convert.ToInt32(Console.ReadLine());

            int[] arr1 = new int[size];
            int[] arr2 = new int[size];

            Console.WriteLine("Enter values for Array 1:");
            InputValues(arr1);

            Console.WriteLine("Enter values for Array 2:");
            InputValues(arr2);
```

```
            int[] vectorSum = CalculateVectorSum(arr1, arr2);
            int[] vectorProduct = CalculateVectorProduct(arr1, arr2);

            Console.WriteLine("Scalar Sum : " + CalculateScalarSum(arr1) + " + " +
CalculateScalarSum(arr2));
            Console.WriteLine("Vector Sum :");
            DisplayArray(vectorSum);
            Console.WriteLine("Vector Product :");
            DisplayArray(vectorProduct);
            Console.WriteLine("Scalar Product : " + CalculateScalarProduct(vectorProduct));
        Console.ReadLine();
    }

        static void InputValues(int[] array)
        {
            for (int i = 0; i < array.Length; i++)
            {
                Console.Write($"Value {i + 1}: ");
                array[i] = Convert.ToInt32(Console.ReadLine());
            }
        }

        static void DisplayArray(int[] array)
        {
            foreach (int num in array)
            {
                Console.Write(num + " ");
            }
            Console.WriteLine();
```

```
}

static int CalculateScalarSum(int[] array)
{
    int sum = 0;
    foreach (int num in array)
    {
        sum += num;
    }
    return sum;
}

static int[] CalculateVectorSum(int[] arr1, int[] arr2)
{
    int[] result = new int[arr1.Length];
    for (int i = 0; i < arr1.Length; i++)
    {
        result[i] = arr1[i] + arr2[i];
    }
    return result;
}

static int[] CalculateVectorProduct(int[] arr1, int[] arr2)
{
    int[] result = new int[arr1.Length];
    for (int i = 0; i < arr1.Length; i++)
    {
        result[i] = arr1[i] * arr2[i];
    }
```

```
            return result;
        }

        static int CalculateScalarProduct(int[] array)
        {
            int product = 1;
            foreach (int num in array)
            {
                product *= num;
            }
            return product;
        }

    }

}
```

Question 08

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp12
{
    internal class Program
    {
```

```
        static void Main(string[] args)
        {
            animal Animal = new animal();
            dog Dog = new dog();

            Animal.DisplayAnimalInfo();
            Dog.DisplayDogInfo();
        Console.ReadLine();
        }
    }
}

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp12
{
    internal class animal
    {

        public virtual void DisplayAnimalInfo()
        {
            Console.Write("I am Animal ");
        }
      }
    }
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace ConsoleApp12
{
   internal class dog
   {
         public void DisplayDogInfo()
         {
            Console.Write("I have four legs. ");
         }
      }
   }
```