**Lab 06**

(6)

**Program.cs**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Q\_6

{

internal class Program

{

static void Main(string[] args)

{

Console.Write("Enter the size of the array: ");

int size = Convert.ToInt32(Console.ReadLine());

ArrayOperations arrayOps = new ArrayOperations();

arrayOps.FillArray(size);

Console.ReadLine();

}

}

}

**ArrayOperations.cs**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Q\_6

{

internal class ArrayOperations

{

public void FillArray(int size)

{

int[] array = new int[size];

for (int i = 0; i < size; i++)

{

Console.Write("Enter value for index " + i + ": ");

array[i] = Convert.ToInt32(Console.ReadLine());

array[++i] = 0;

}

Console.WriteLine("Values in the array: ");

foreach (int num in array)

{

Console.Write(num + " ");

}

}

}

}

(7)

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Q\_7

{

internal class Program

{

static void Main(string[] args)

{

Console.Write("Enter the size of the array: ");

int size = Convert.ToInt32(Console.ReadLine());

int[] array1 = new int[size];

int[] array2 = new int[size];

Console.WriteLine("Enter values for Array1 : ");

for(int i = 0; i < size; i++)

{

Console.Write("Value " + (i + 1) + ":");

array1[i] = Convert.ToInt32(Console.ReadLine());

}

Console.WriteLine("\nEnter values for Array2 : ");

for( int i = 0; i < size;i++)

{

Console.Write("Value " + (i+1) + ":");

array2[i] = Convert.ToInt32(Console.ReadLine());

}

int scalarSum = CalculateScalarSum(array1,array2);

int[] vectorSum = CalculateVectorSum(array1,array2);

int[] vectorProduct = CalculateVectorProduct(array1,array2);

int scalarProduct = CalculateScalarProduct(array1,array2);

Console.WriteLine("\nScalar Sum : " + scalarSum);

Console.WriteLine("Vector Sum : ");

DisplayArray(vectorSum);

Console.WriteLine("Vector Product :");

DisplayArray(vectorProduct);

Console.WriteLine("Scalar Product :" + scalarProduct);

Console.ReadLine();

}

static int CalculateScalarSum(int[] array1, int[] array2)

{

int sum = 0;

for(int i=0; i<array1.Length; i++)

{

sum += array1[i] + array2[i];

}

return sum;

}

static int[] CalculateVectorSum(int[] array1, int[] array2)

{

int[] sumArray = new int[array1.Length];

for(int i=0 ; i<array1.Length ; i++)

{

sumArray[i] = array1[i] + array2[i];

}

return sumArray;

}

static int[] CalculateVectorProduct(int[] array1, int[] array2)

{

int[] productArray = new int[array1.Length];

for(int i = 0 ; i<array1.Length ;i++)

{

productArray[i] = array1[i] \* array2[i];

}

return productArray;

}

static int CalculateScalarProduct(int[] array1, int[] array2)

{

int product = 0;

for(int i = 0; i<array1.Length ; i++)

{

product += array1[i] \* array2[i];

}

return product;

}

static void DisplayArray(int[] array)

{

foreach(int num in array)

{

Console.Write(num + " ");

}

Console.WriteLine();

}

}

}

(8)

**Program.cs**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Q\_8

{

internal class Program

{

static void Main(string[] args)

{

Animal animal = new Animal();

Dog dog = new Dog();

animal.PrintAnimal();

dog.PrintDog();

Console.ReadLine();

}

}

}

**Animal.cs**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Q\_8

{

internal class Animal

{

public void PrintAnimal()

{

Console.WriteLine("I am an animal");

}

}

}

**Dog.cs**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Q\_8

{

internal class Dog : Animal

{

public void PrintDog()

{

Console.WriteLine("I have four legs");

}

}

}