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**Lab 06**

**Question 06.**

**Create a Console application with two classes (Main class + another class). Inside the main class take a user input which is the size of the array. Pass the user inserted size as a parameter to the added class method. Inside the method create an integer array based on passed value from main method. Then take user inputs for the created array inside the separate class. Every user input value should be followed by value 0 inside the array.**

**Eg. Assume array size is 9 and it should as follows.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **U.Input** | **0** | **U.Input** | **0** | **U.Input** | **0** | **U.Input** | **0** | **U.Input** |

**Now print all the values inside the array.**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace T06

{

internal class Program

{

static void Main(string[] args)

{

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

int size = int.Parse(Console.ReadLine());

int[] arr = new int[size \* 2];

ArrayInput.FillArray(arr, size);

Console.WriteLine("The array elements are:");

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

{

Console.Write(arr[i] + " ");

}

Console.ReadKey();

}

}

static class ArrayInput

{

public static void FillArray(int[] arr, int size)

{

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

{

Console.Write($"Enter value {i + 1}: ");

arr[i \* 2] = int.Parse(Console.ReadLine());

arr[i \* 2 + 1] = 0;

}

}

}

}

A screenshot of a computer program

Description automatically generated

**Question 07.**

**Declare two single dimensional array with the size given by the user and find. Display the following,**

**Scalar Sum (Adding values of each element of an array)**

**Vector Sum (Adding values of each relative elements of an array and store them in third array)**

**Vector Product (Multiply values of each relative elements of an array and store them in third array)**

**Scalar Product (Multiply values of each relative elements of an array and store them in third array. After placing the values in third array add all the values)**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace T06

{

internal class Program

{

static void Main(string[] args)

{

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

int size = int.Parse(Console.ReadLine());

int[] arr1 = new int[size];

int[] arr2 = new int[size];

int[] arr3 = new int[size];

Console.WriteLine("Enter values for array 1:");

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

{

Console.Write($"Enter value {i + 1}: ");

arr1[i] = int.Parse(Console.ReadLine());

}

Console.WriteLine("Enter values for array 2:");

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

{

Console.Write($"Enter value {i + 1}: ");

arr2[i] = int.Parse(Console.ReadLine());

}

int scalarSum = 0;

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

{

scalarSum += arr1[i] + arr2[i];

}

Console.WriteLine($"Scalar Sum: {scalarSum}");

int[] vectorSum = new int[size];

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

{

vectorSum[i] = arr1[i] + arr2[i];

}

Console.WriteLine("Vector Sum:");

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

{

Console.Write(vectorSum[i] + " ");

}

Console.WriteLine();

int[] vectorProduct = new int[size];

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

{

vectorProduct[i] = arr1[i] \* arr2[i];

}

Console.WriteLine("Vector Product:");

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

{

Console.Write(vectorProduct[i] + " ");

}

Console.WriteLine();

int scalarProduct = 0;

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

{

scalarProduct += arr1[i] \* arr2[i];

}

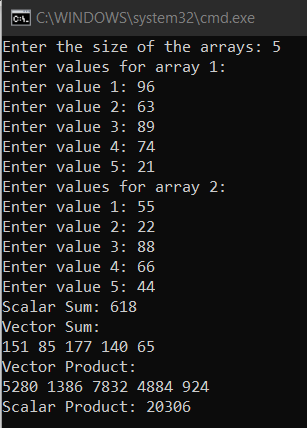
Console.WriteLine($"Scalar Product: {scalarProduct}");

Console.ReadKey();

}

}

}



**Question 08.**

**Create a Console application with two added classes called “Animal” and “Dog”. “Dog” is the derived class of ‘Animal Class’ (Base Class). Inside the ‘Animal Class’ Create a method which for ‘Dog’ Class. Inside the method print “I am Animal”. Inside the “Dog Class” Create a method and display “I have four legs”. Inside the main method create relevant class object and Display as follows. “I am an animal I have four legs”.**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace T06

{

internal class Program

{

static void Main(string[] args)

{

Animal animal = new Animal();

animal.PrintAnimalInfo();

Dog dog = new Dog();

dog.PrintDogInfo();

Console.ReadLine();

}

}

public class Animal

{

public void PrintAnimalInfo()

{

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

}

}

public class Dog : Animal

{

public void PrintDogInfo()

{

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

}

}

}

A screenshot of a computer screen

Description automatically generated