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;

namespace ConsoleApp30

{

internal class Program

{

static void Main(string[] args)

{

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

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

ArrayHandler arrayHandler = new ArrayHandler();

int[] array = arrayHandler.CreateArrayWithZeros(size);

Console.WriteLine($"Enter {size} values for the array:");

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

{

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

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

arrayHandler.AddValueWithZero(array, value, i);

}

Console.WriteLine("\nArray values:");

foreach (int element in array)

{

Console.Write($"{element} ");

}

Console.ReadLine();

}

}

class ArrayHandler

{

public int[] CreateArrayWithZeros(int size)

{

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

return array;

}

public void AddValueWithZero(int[] array, int value, int index)

{

array[index \* 2] = value;

array[index \* 2 + 1] = 0;

}

}

}

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;

namespace ConsoleApp31

{

internal class Program

{

static void Main(string[] args)

{

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

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

int[] array1 = new int[size];

int[] array2 = new int[size];

int[] resultArray = new int[size];

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

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

{

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

array1[i] = int.Parse(Console.ReadLine());

}

Console.WriteLine("\nEnter the values for the second array:");

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

{

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

array2[i] = int.Parse(Console.ReadLine());

}

// Scalar Sum

int scalarSum = 0;

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

{

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

}

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

// Vector Sum

Console.WriteLine("\nVector Sum:");

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

{

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

Console.WriteLine($"Element {i + 1}: {resultArray[i]}");

}

// Vector Product

Console.WriteLine("\nVector Product:");

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

{

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

Console.WriteLine($"Element {i + 1}: {resultArray[i]}");

}

// Scalar Product

int scalarProduct = 0;

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

{

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

scalarProduct += resultArray[i];

}

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

Console.ReadLine();

}

}

}

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;

namespace ConsoleApp32

{

internal class Program

{

static void Main(string[] args)

{

Dog dog = new Dog();

dog.AnimalMethod();

dog.DogMethod();

Console.ReadLine();

}

}

class Animal

{

public void AnimalMethod()

{

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

}

}

class Dog : Animal

{

public void DogMethod()

{

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

}

}

}