Question 07

using System;

class Program

{

static void Main(string[] args)

{

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

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

// Declare two arrays with the given size

int[] array1 = new int[size];

int[] array2 = new int[size];

// Input values for array1

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

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

{

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

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

}

// Input values for array2

Console.WriteLine("Enter elements for Array2:");

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

{

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

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

}

// Calculate and display scalar sum

int scalarSum = 0;

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

{

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

}

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

// Calculate and display vector sum

int[] vectorSum = new int[size];

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

{

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

}

Console.WriteLine("Vector Sum:");

DisplayArray(vectorSum);

// Calculate and display vector product

int[] vectorProduct = new int[size];

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

{

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

}

Console.WriteLine("Vector Product:");

DisplayArray(vectorProduct);

// Calculate and display scalar product

int scalarProduct = 0;

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

{

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

}

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

}

// Helper method to display an array

static void DisplayArray(int[] arr)

{

foreach (var element in arr)

{

Console.Write(element + " ");

}

Console.WriteLine();

}

}

Question 8

using System;

// Animal class (Base class)

class Animal

{

public void DisplayAnimalInfo()

{

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

}

}

// Dog class (Derived class)

class Dog : Animal

{

public void DisplayDogInfo()

{

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

}

}

class Program

{

static void Main(string[] args)

{

// Creating an instance of the Dog class

Dog dog = new Dog();

// Displaying the desired output

dog.DisplayAnimalInfo();

dog.DisplayDogInfo();

}

}