***Practical 04***

static void Main(string[] args)

{

Console.WriteLine("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++)

{

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

}

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

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

{

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($"Scalar Sum: {scalarSum}");

// Vector Sum

Console.WriteLine("Vector Sum:");

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

{

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

Console.Write($"{resultArray[i]} ");

}

Console.WriteLine();

// Vector Product

Console.WriteLine("Vector Product:");

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

{

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

Console.Write($"{resultArray[i]} ");

}

Console.WriteLine();

// Scalar Product

int scalarProductSum = 0;

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

{

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

scalarProductSum += resultArray[i];

}

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

}

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");

}

}

static void Main(string[] args)

{

Animal animal = new Animal();

Dog dog = new Dog();

animal.PrintAnimalInfo();

dog.PrintDogInfo();

}

public class GetNumbers

{

protected double num1;

protected double num2;

public void GetInput()

{

Console.WriteLine("Enter the first number:");

num1 = double.Parse(Console.ReadLine());

Console.WriteLine("Enter the second number:");

num2 = double.Parse(Console.ReadLine());

}

}

public class Summation : GetNumbers

{

public double GetSum()

{

return num1 + num2;

}

}

public class Subtraction : GetNumbers

{

public double GetDifference()

{

return num1 - num2;

}

}

public class Multiplication : GetNumbers

{

public double GetProduct()

{

return num1 \* num2;

}

}

public class Division : GetNumbers

{

public double GetQuotient()

{

if (num2 != 0)

return num1 / num2;

else

{

Console.WriteLine("Cannot divide by zero.");

return 0;

}

}

}

static void Main(string[] args)

{

GetNumbers getNumbers = new GetNumbers();

getNumbers.GetInput();

Summation summation = new Summation();

Subtraction subtraction = new Subtraction();

Multiplication multiplication = new Multiplication();

Division division = new Division();

double sum = summation.GetSum();

double difference = subtraction.GetDifference();

double product = multiplication.GetProduct();

double quotient = division.GetQuotient();

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

Console.WriteLine($"Difference: {difference}");

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

Console.WriteLine($"Quotient: {quotient}");

}