Program.cs

namespace ConsoleApp1

{

internal class Program

{

static void Main(string[] args)

{

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

if (int.TryParse(Console.ReadLine(), out int size))

{

int[] array1 = new int[size];

int[] array2 = new int[size];

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

InputArrayValues(array1);

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

InputArrayValues(array2);

int[] scalarSumArray = ScalarSum(array1, array2);

int[] vectorSumArray = VectorSum(array1, array2);

int[] vectorProductArray = VectorProduct(array1, array2);

int scalarProductSum = ScalarProduct(array1, array2);

Console.WriteLine("Scalar Sum Array:");

DisplayArray(scalarSumArray);

Console.WriteLine("Vector Sum Array:");

DisplayArray(vectorSumArray);

Console.WriteLine("Vector Product Array:");

DisplayArray(vectorProductArray);

Console.WriteLine("Scalar Product Sum: " + scalarProductSum);

}

else

{

Console.WriteLine("Invalid input. Please enter a valid size.");

}

}

static void InputArrayValues(int[] array)

{

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

{

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

if (int.TryParse(Console.ReadLine(), out int value))

{

array[i] = value;

}

else

{

Console.WriteLine("Invalid input. Please enter an integer.");

i--;

}

}

}

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

{

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

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

{

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

}

return result;

}

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

{

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

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

{

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

}

return result;

}

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

{

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

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

{

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

}

return result;

}

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

{

int sum = 0;

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

{

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

}

return sum;

}

static void DisplayArray(int[] array)

{

foreach (int value in array)

{

Console.Write(value + " ");

}

Console.ReadKey();

}

}

}