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C# LAB 05

Question03

1.

```
using System;

public class CalculateValues
{
   public int Addition(int number1, int number2)
   {
      return number1 + number2;
   }

   public int Subtraction(int number1, int number2)
   {
      return number1 - number2;
   }

   public int Multiplication(int number1, int number2)
   {
      return number1 * number2;
   }

   public int Division(int number1, int number2)
   {
      return number1 / number2;
   }
}

public class Program
{
   public static void Main(string[] args)
   {
      // Declare variables to store the user input and the result of the arithmetic operation.
      int number1, number2, choice, result;

      // Prompt the user to enter the two numbers.
```

```
        Console.WriteLine("Enter the first number: ");
        number1 = Convert.ToInt32(Console.ReadLine());
        Console.WriteLine("Enter the second number: ");
        number2 = Convert.ToInt32(Console.ReadLine());

        // Prompt the user to select the arithmetic operation.
        Console.WriteLine("Select the arithmetic operation:");
        Console.WriteLine("1. Addition");
        Console.WriteLine("2. Subtraction");
        Console.WriteLine("3. Multiplication");
        Console.WriteLine("4. Division");
        choice = Convert.ToInt32(Console.ReadLine());

        // Create an object of the CalculateValues
        class. var calculateValues = new
        CalculateValues();

        // Call the appropriate method on the CalculateValues object to perform the arithmetic operation.
        switch (choice)
        {
            case 1:
                result = calculateValues.Addition(number1, number2);
                break;
            case 2:
                result = calculateValues.Subtraction(number1, number2);
                break;
            case 3:
                result = calculateValues.Multiplication(number1, number2);
                break;
            case 4:
                result = calculateValues.Division(number1, number2);
                break;
            default:
                result = 0;
                break;
        }

        // Display the result of the arithmetic operation.
        Console.WriteLine("The result is {0}.", result);
    }
}
```

Question 04

1.

```
public class MyClass
{
   private void sayHello()
   {
      Console.WriteLine("Hello, world!");
   }
}

public class Program
{
   public static void Main(string[] args)
   {
      // Create an object of the MyClass class.
      var myClass = new MyClass();

      // Try to access the sayHello() method.
      //myClass.sayHello(); // This will not compile.
   }
}
```

```
public class MyClass
{
   public void sayHello()
   {
      Console.WriteLine("Hello, world!");
   }
}

public class Program
{
   public static void Main(string[] args)
   {
      // Create an object of the MyClass class.
      var myClass = new MyClass();

      // Access the sayHello() method.
      myClass.sayHello();
   }
}
```

Question 05

1.

```
using System;

public class ArrayOperations
{
   public int[] CreateArray(int size)
   {
      int[] array = new int[size];

      // Prompt the user to enter values for the array.
      for (int i = 0; i < size; i++)
      {
         Console.WriteLine("Enter a value for the array at index {0}: ", i);
         array[i] = Convert.ToInt32(Console.ReadLine());
      }

      return array;
   }

   public int FindMinimumValue(int[] array)
   {
      int minValue = array[0];

      for (int i = 1; i < array.Length; i++)
      {
         if (array[i] < minValue)
         {
            minValue = array[i];
         }
      }

      return minValue;
   }

   public int FindMaximumValue(int[] array)
   {
      int maxValue = array[0];

      for (int i = 1; i < array.Length; i++)
      {
         if (array[i] > maxValue)
```

```
            {
                maxValue = array[i];
            }
        }

        return maxValue;
    }

    public double CalculateAverageValue(int[] array)
    {
        int sum = 0;

        for (int i = 0; i < array.Length; i++)
        {
            sum += array[i];
        }

        return sum / array.Length;
    }

    public void ReverseArray(int[] array)
    {
        int[] reversedArray = new int[array.Length];

        for (int i = array.Length - 1; i >= 0; i--)
        {
            reversedArray[array.Length - 1 - i] = array[i];
        }

        array = reversedArray;
    }
}

public class Program
{
    public static void Main(string[] args)
    {
        // Declare variables to store the array and the results of the operations.
        int[] array;
        int minValue, maxValue;
        double averageValue;

        // Create an array of size 10.
        array = ArrayOperations.CreateArray(10);
```

```
        // Find the minimum, maximum, and average values of the array.
        minValue = ArrayOperations.FindMinimumValue(array);
        maxValue = ArrayOperations.FindMaximumValue(array);
        averageValue = ArrayOperations.CalculateAverageValue(array);

        // Reverse the order of the array.
        ArrayOperations.ReverseArray(array);

        // Display the results of the operations.
        Console.WriteLine("The minimum value is {0}.", minValue);
        Console.WriteLine("The maximum value is {0}.", maxValue);
        Console.WriteLine("The average value is {0}.", averageValue);
        Console.WriteLine("The reversed array is: ");
        for (int i = 0; i < array.Length; i++)
        {
            Console.WriteLine("{0}", array[i]);
        }
    }
}
```