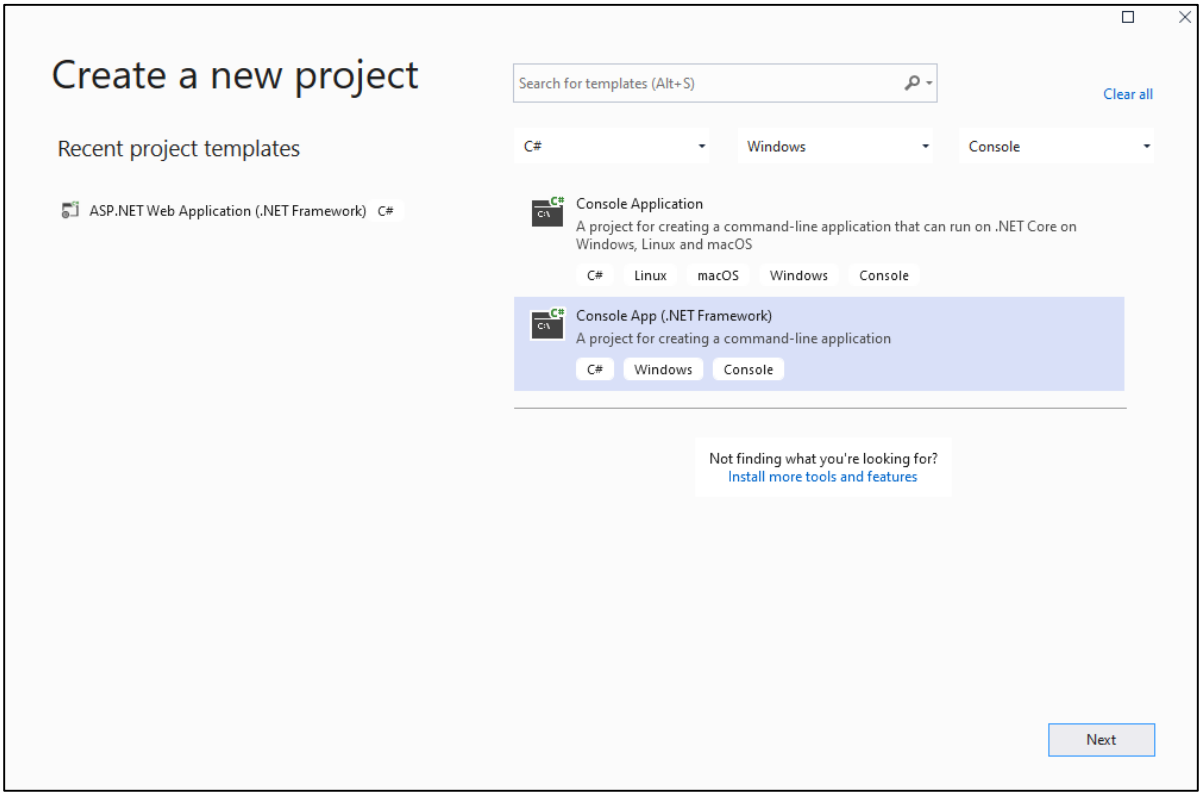
Fakulti Sains Komputer dan Teknologi Maklumat
Universiti Tun Hussein Onn Malaysia

LABORATORY 3

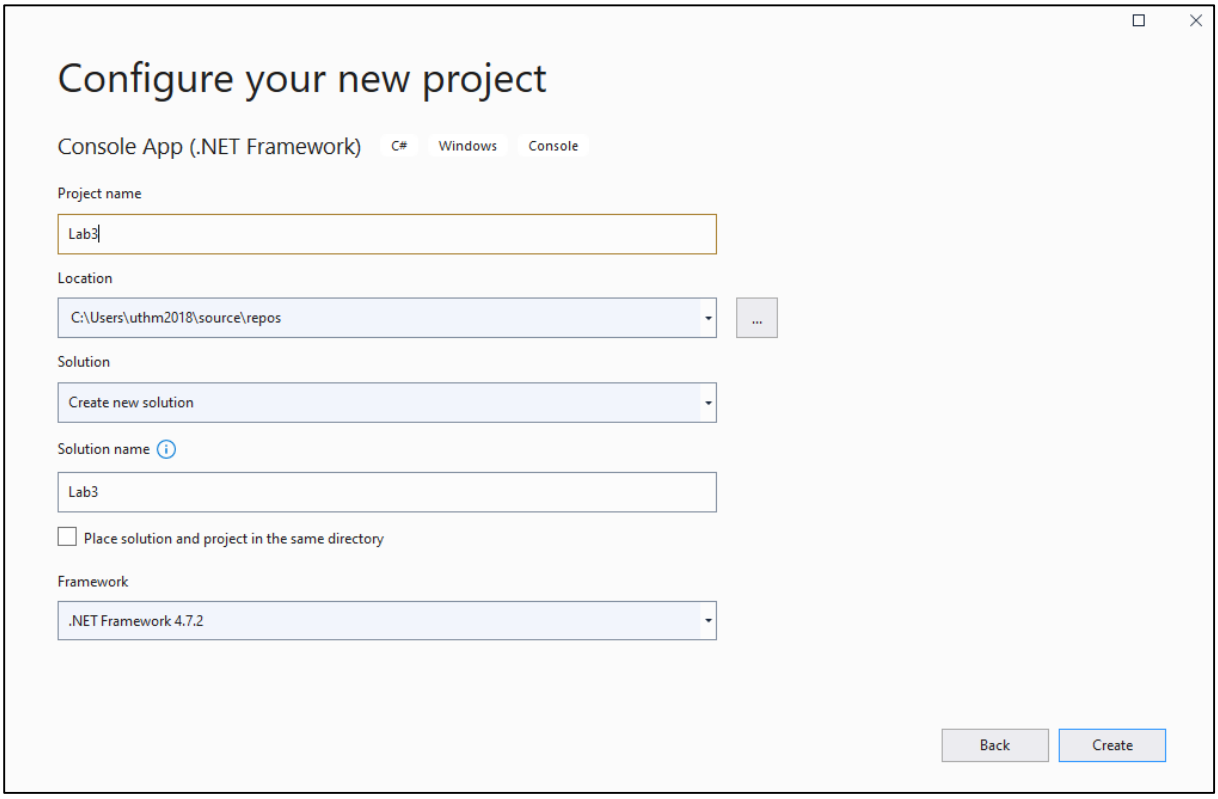
This laboratory exercise is about variables, array, function and decisions in ASP.NET in console application.

1. Start Visual Studio Community 2019 and create new **Project**.

2. In the **Create a new project** window, choose **C#** as the programming language. Next, choose **Windows** from the Platform list and **Console** from the project types list. choose the **Console Application (.NET Framework**) template, and then select **Next**.



3. In the **Configure your new project** window, type or enter *project name* in the **Project name** box. Then, choose **Next**.



Basic C# examples

Example 1: C# Program to print Hello World

```
using System;

namespace HelloWorldApplication
{
        class Program
            {
                static void Main(string[] args)
                {
                    Console.WriteLine("Hello World!");
                    Console.ReadKey();
                }
            }
}
```

Example 2: C# program to print an integer entered by user

```
using System;

namespace PrintInteger
{
        class Program
            {
                static void Main(string[] args)
                {
                    int number;
                    Console.Write("Enter a number:");
                    number = Convert.ToInt32(Console.ReadLine());

                    Console.WriteLine("You entered :{0}",number);
                    Console.ReadLine();
                }
            }
}
```

Example 3: C# program to add two integers

```
using System;

namespace AddTwoInteger
{
        class Program
            {
                static void Main(string[] args)
                {
                    int num1, num2, sum;
                    Console.WriteLine("Calculate the sum of two numbers:");
                    Console.Write("Input number1:");
                    num1 = Convert.ToInt32(Console.ReadLine());
                    Console.Write("Input number2:");
                    num2 = Convert.ToInt32(Console.ReadLine());
                    sum = num1 + num2;
                    Console.Write("Result:"+sum);

                    Console.ReadKey();
                }
}
```

Example 4: Multiply two integer numbers in C# console

```
using System;

namespace MultiplyTwoInteger
{
        class Program
        {
            static void Main(string[] args)
            {
                int var1, var2, prod;
                Console.Write("Enter number 1: ");
                var1 = Int32.Parse(Console.ReadLine()); //READ NUMBER 1 AND PARSE TO INT
                Console.Write("Enter number 2: ");
                var2 = Convert.ToInt32(Console.ReadLine()); //READ NUMBER 2 AND CONVERT TO INT

                prod = var1 * var2;

                Console.Write("Result:"+ prod);
            }
        }
}
```

Example 5: multiply two floating point numbers in C# console

```
using System;

namespace MultiplyTwoFloating
{
    class Program
    {
        static void Main(string[] args)
        {
            float number1,number2,product;
            number1 = 12.45f;
            number2 = 10.74f;

            product = number1 * number2;

            Console.WriteLine("{0} * {1} = {2}",number1,number2, product);
            Console.ReadLine();
        }
    }
}
```

Example 6: C# calculate rectangle area

```
using System;

namespace CalculateRectangle
{
        class Program
            {
                static void Main(string[] args)
                {
                    int area, length, width;
                    Console.Write("Please write the length of your rectangle: ");
                    length = Convert.ToInt32(Console.ReadLine());
                    Console.Write("Please write the width of your rectangle: ");
                    width = Convert.ToInt32(Console.ReadLine());
                    area = length * width;
                    Console.WriteLine("The area of rectangle : {0}", area);
                    Console.ReadKey();
                }
            }
}
```

Example 7: C# program to count number of words in a string

```
using System;

namespace CountNumber
{
        Class Program
        {
        static void Main(string[] args)
                {
                    string sentence;
                    Console.Write("Enter String  : ");
                    sentence = Console.ReadLine();
                    string[] words = sentence.Split(' ');
                    Console.WriteLine("Count of words :"+words.Length);
                    Console.ReadKey();
                }
        }
}
```

C# Conditional Examples

Example 1: C# coding for decision.

```
using System;

namespace Decision
{
        class Program
        {
            static void Main()
            {
                int value = 10 / 2;
                if (value == 5)
                {
                    Console.WriteLine(true);
                }
            }
        }
}
```

Example 2: Generates the sum of N numbers in C#

```
using System;

namespace GenerateSumNumber
{
        class Program
            {
                static void Main(string[] args)
                {
                    int number, sum=0;

                    Console.Write("Enter a Number : ");
                    number = Convert.ToInt32(Console.ReadLine());

                    if(number<0)
                    {
                        Console.Write("Please Enter Positive Number");
                    }
                    else
                    {
                        while(number>0)
                        {
                            sum += number;
                            number -=1;
                        }
                    }
                    Console.WriteLine("The sum is "+sum);
```

```
                    Console.ReadKey();
                }
            }
}
```

Example 3: C# coding for function.

```
using System;

namespace CalculatorApplication
{
    class NumberManipulator
    {
        public int FindMax(int num1, int num2)
        {
            /* local variable declaration */
            int result;

            if (num1 > num2)
                result = num1;
            else
                result = num2;
            return result;
        }

        static void Main(string[] args)
        {
            /* local variable definition */
            int a = 100;
            int b = 200;
            int ret;

            NumberManipulator n = new NumberManipulator(); //object n

            //calling the FindMax() method using object n by sending value of a and b; and
            returned value will be stored in ret
            ret = n.FindMax(a, b);
            Console.WriteLine("Max value is : {0}", ret);
            Console.ReadLine();
        }
    }
}
```

C# Loop Examples

Example 1: C# coding for array.

```
using System;

namespace ArrayNumber
{
        class Program
        {
            static void Main()
            {
                // Three-element array.

                int[] array = { -5, -6, -7 };

                for(int i=0; i<3; i++){
                   Console.WriteLine(array[i]+"\n");
                }
            }
        }
}
```

Example 2: Display numbers between 1 to 100 using for loop

```
using System;

namespace LoopNumber
{
    class Program
    {
        static void Main(string[] args)
        {
            int n;
            Console.Write("Number :");
            n = Convert.ToInt32(Console.ReadLine());
            for (int i = 1; i <= n; i++)
            {
                Console.WriteLine(i);
            }
            Console.ReadKey();
        }
    }
}
```

Example 3: Calculate sum and average of an array in C#

```
using System;

namespace CalculateSumAndAverage
{
        class Program
        {
                static void Main(string[] args)
                {
                    double sum=0, avg=0;
                    double[] numbers = { 10, 20, 50, 40};
                    for(int i=0;i<numbers.Length;i++)
                    {
                        sum += numbers[i];
                    }
                    avg = sum / numbers.Length;
                    Console.WriteLine("The Sum is : "+sum);
                    Console.WriteLine("The Average is : "+avg);

                    Console.ReadKey();
                }
        }
}
```

Example 4: C# program to convert digits to words

```
using System;

namespace ConvertDigitToWord
{
    class Program
    {
        public static void Main(string[] args)
        {
            int number;
            int nextDigit;
            int numDigits;
            int[] n = new int[20];

            string[] digits = { "zero", "one", "two", "three", "four", "five", "six", "seven",
"eight", "nine" };


            Console.WriteLine("Enter the number");
            number = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine("Number: " + number);
            Console.Write("Number in words: ");
            nextDigit = 0;
```

```
            numDigits = 0;
            do
            {
                nextDigit = number % 10;
                n[numDigits] = nextDigit;
                numDigits++;
                number = number / 10;
            } while (number>0);
            numDigits--;
            for (; numDigits>=0; numDigits--)
                Console.Write(digits[n[numDigits]] + " ");
            Console.WriteLine();
            Console.ReadLine();
        }
    }
}
```

EXERCISE: Develop ASP.NET console application

i. Find number is even or odd using if else statement
ii. Calculate Body Mass Index (BMI) using switch case
iii. Generate Fibonacci series using for loop
iv. To calculate carry mark, where carry mark = mark * 0.6. Use the following data:

Student	Mark
Student1	67
Student2	55
Student3	89
Student4	34

Instruction for submission:

- Your lab report must be in pdf.
- Copy your code program (.aspx.cs) and screenshot the output displayed.
- Submission at **AUTHOR** (Tab Individual Activities).
- All work is to be done on an individual basis.
- Duration: 1 week only.