Part 1

Lab 1 :

CREATING A SIMPLE CONSOLE APPLICATION WHICH DISPLAYS HELLO WORLD

```
using System;

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

TAKING NON-NUMERIC DATA FROM KEYBOARD INTO CONSOLE APPLICATION

```
using System;

namespace ConsoleInputExample
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.WriteLine("Please enter your name: ");
         string name = Console.ReadLine();

         Console.WriteLine("Please enter a message: ");
         string message = Console.ReadLine();

         Console.WriteLine("You entered the following information:");
         Console.WriteLine("Name: " + name);
         Console.WriteLine("Message: " + message);
      }
   }
}
```

TAKING NUMERIC DATA IN CONSOLE APPLICATION

```
using System;
```

```
namespace ConsoleNumericInputExample
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.WriteLine("Please enter an integer: ");
         string userInput = Console.ReadLine();

         if (int.TryParse(userInput, out int number))
         {
            Console.WriteLine("You entered the integer: " + number);
         }
         else
         {
            Console.WriteLine("Invalid input. Please enter a valid integer.");
         }
      }
   }
}
```

HANDLING ERRORS USING TRY AND CATCH BLOCK

```
using System;

namespace ErrorHandlingExample
{
   class Program
   {
      static void Main(string[] args)
      {
         try
         {
            // Code that might cause an exception
            int numerator = 10;
            int denominator = 0;
            int result = numerator / denominator; // This will throw a DivideByZeroException
         }
         catch (DivideByZeroException ex)
         {
            // Handle the exception
            Console.WriteLine("An error occurred: " + ex.Message);
         }
         catch (Exception ex)
         {
            // Handle other exceptions
            Console.WriteLine("An error occurred: " + ex.Message);
         }
```

```
        finally
        {
            // Code that will always be executed, whether an exception occurred or not
            Console.WriteLine("Finally block executed.");
        }
    }
  }
}
```

Lab 02

SING "IF" AND "ELSE" TO DEFINE CONDITIONS IN C# APPLICATIONS

```
using System;

namespace NameLengthValidation
{
  class Program
  {
    static void Main(string[] args)
    {
      Console.Write("Please enter your name (10 characters): ");
      string name = Console.ReadLine();

      if (name.Length == 10)
      {
        Console.WriteLine("Name is valid: " + name);
      }
      else
      {
        Console.WriteLine("Error: Name should be exactly 10 characters long.");
      }
    }
  }
}
```

CREATING A SIMPLE CONSOLE CALCULATOR

```
using System;

namespace SimpleCalculator
{
  class Program
  {
    static void Main(string[] args)
    {
```

```
        // Input the first number
        Console.Write("Enter the first number: ");
        string input1 = Console.ReadLine();

        // Input the operator
        Console.Write("Enter the operator (+, -, *, /): ");
        string operation = Console.ReadLine();

        // Input the second number
        Console.Write("Enter the second number: ");
        string input2 = Console.ReadLine();

        // Convert the input strings to double
        if (double.TryParse(input1, out double number1) && double.TryParse(input2, out double
number2))
        {
            // Perform the calculation based on the operator
            double result = 0.0;
            switch (operation)
            {
                case "+":
                    result = number1 + number2;
                    break;
                case "-":
                    result = number1 - number2;
                    break;
                case "*":
                    result = number1 * number2;
                    break;
                case "/":
                    if (number2 != 0)
                        result = number1 / number2;
                    else
                        Console.WriteLine("Error: Division by zero is not allowed.");
                    break;
                default:
                    Console.WriteLine("Error: Invalid operator!");
                    break;
            }

            // Display the result
            Console.WriteLine("Result: " + result);
```

```
        }
        else
        {
            Console.WriteLine("Error: Invalid number input.");
        }
    }
  }
}
```

Lab 03

CREATING WINDOWS APPLICATION

```
using System;
using System.Windows.Forms;

namespace SimpleCalculator
{
  public partial class Form1 : Form
  {
    public Form1()
    {
      InitializeComponent();
    }

    private void btnPlus_Click(object sender, EventArgs e)
    {
      if (double.TryParse(txtNumber1.Text, out double num1) && double.TryParse(txtNumber2.Text, out
double num2))
      {
        double result = num1 + num2;
        MessageBox.Show("Result: " + result, "Addition");
      }
      else
      {
        MessageBox.Show("Invalid input. Please enter valid numbers.", "Error");
      }
    }

    private void btnMinus_Click(object sender, EventArgs e)
    {
      if (double.TryParse(txtNumber1.Text, out double num1) && double.TryParse(txtNumber2.Text, out
double num2))
      {
```

```
            double result = num1 - num2;
            MessageBox.Show("Result: " + result, "Subtraction");
        }
        else
        {
            MessageBox.Show("Invalid input. Please enter valid numbers.", "Error");
        }
    }

    private void btnMultiplication_Click(object sender, EventArgs e)
    {
        if (double.TryParse(txtNumber1.Text, out double num1) && double.TryParse(txtNumber2.Text, out
double num2))
        {
            double result = num1 * num2;
            MessageBox.Show("Result: " + result, "Multiplication");
        }
        else
        {
            MessageBox.Show("Invalid input. Please enter valid numbers.", "Error");
        }
    }

    private void btnDivision_Click(object sender, EventArgs e)
    {
        if (double.TryParse(txtNumber1.Text, out double num1) && double.TryParse(txtNumber2.Text, out
double num2))
        {
            if (num2 != 0)
            {
                double result = num1 / num2;
                MessageBox.Show("Result: " + result, "Division");
            }
            else
            {
                MessageBox.Show("Error: Division by zero is not allowed.", "Error");
            }
        }
        else
        {
            MessageBox.Show("Invalid input. Please enter valid numbers.", "Error");
        }
```

```
    }
  }
}
```

CREATING A SIMPLE CUSTOMER SCREEN WHICH TAKES CUSTOMER NAME, COUNTRY, GENDER, HOBBY AND STATUS

```
private void btnPreview_Click(object sender, EventArgs e)
{
  string name = txtName.Text;
  string country = txtCountry.Text;
  string gender = radioMale.Checked ? "Male" : "Female";
  string hobbies = (chkReading.Checked ? "Reading, " : "") + (chkPainting.Checked ? "Painting" : "");
  string maritalStatus = radioMarried.Checked ? "Married" : "Unmarried";

  string message = $"Name: {name}\nCountry: {country}\nGender: {gender}\nHobbies: {hobbies}\nMarital Status: {maritalStatus}";

  MessageBox.Show(message, "Customer Data Preview");
}
```

CREATING A PREVIEW SCREEN THAT WILL DISPLAY DATA ENTERED IN TO THE CUSTOMER DATA ENTRY SCREEN

```
using System;
using System.Windows.Forms;

namespace CustomerDataEntry
{
  public partial class Form1 : Form
  {
    public Form1()
    {
      InitializeComponent();
    }

    private void btnPreview_Click(object sender, EventArgs e)
    {
      string name = txtName.Text;
      string country = txtCountry.Text;
      string gender = radioMale.Checked ? "Male" : "Female";
      string hobbies = (chkReading.Checked ? "Reading, " : "") + (chkPainting.Checked ? "Painting" : "");
      string maritalStatus = radioMarried.Checked ? "Married" : "Unmarried";

      string message = $"Name: {name}\nCountry: {country}\nGender: {gender}\nHobbies: {hobbies}\nMarital Status: {maritalStatus}";
```

```
            MessageBox.Show(message, "Customer Data Preview");
        }
    }
}
```