

Exceptions Handling I

Exercise 01

01.

The screenshot shows a Windows application window titled 'Form1'. Inside the window, the text 'Add Two Numbers' is centered at the top. Below this, there are two text input fields. The first field is preceded by the label 'Enter Number 1' and the second by 'Enter Number 2'. At the bottom center of the form is a button labeled 'Add'.

03.

```
namespace Lab_05
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            try
            {
                int num1 = int.Parse(txtnum1.Text);
                int num2 = int.Parse(txtnum2.Text);
                int num3 = num1 + num2;
                MessageBox.Show(num3.ToString());
            }
            catch (Exception e1)
            {
                MessageBox.Show(e1.ToString());
            }
        }
    }
}
```

Form1

Add Two Numbers

Enter Number 1 2

Enter Number 2 5

Add

7

OK

05.

Form1

Add Two Numbers

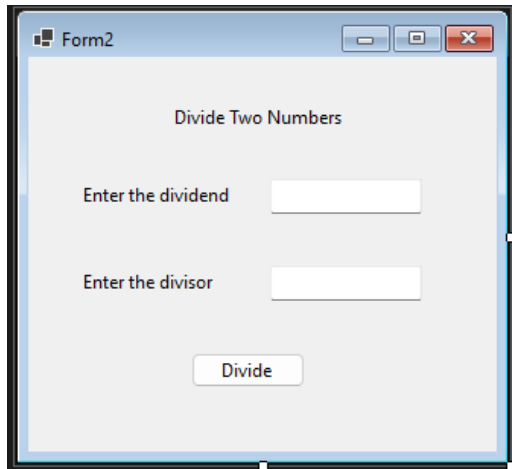
Enter Number 1

Enter Number 2

Add

System.FormatException: The input string '' was not in a correct format.
at System.Number.ThrowFormatException[TChar](ReadOnlySpan`1
value)
at System.Int32.Parse(String s)
at Lab_05.Form1.button1_Click(Object sender, EventArgs e) in
C:\Users\gamik\source\repos\Lab_05\Lab_05\Form1.cs:line 14

OK

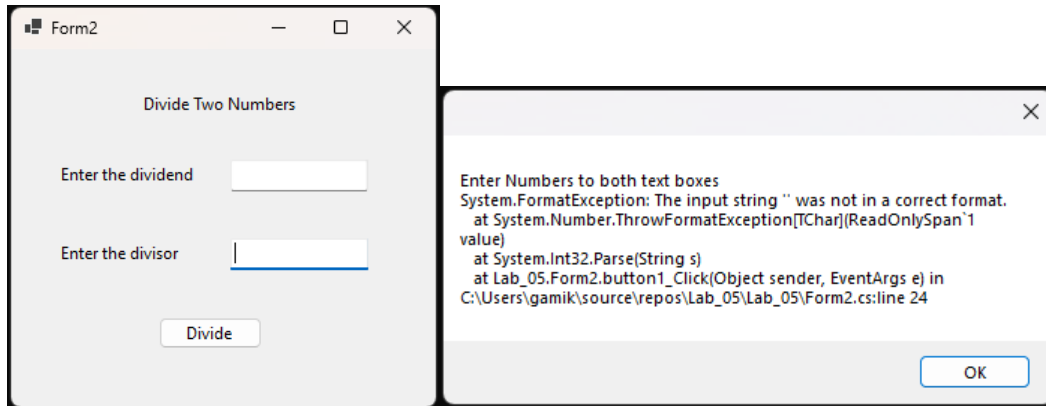
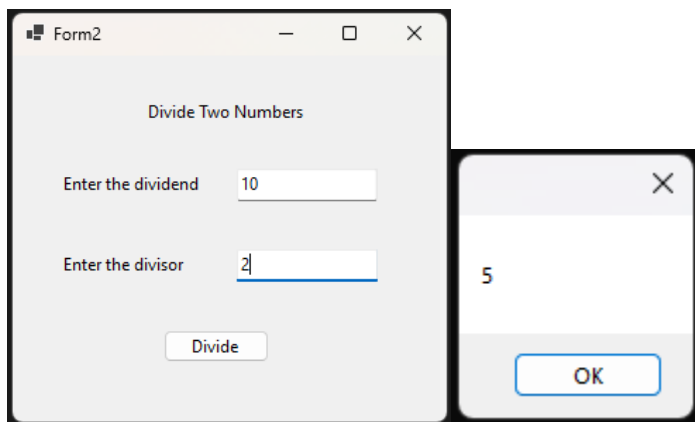
Exercise 02**01.****05.**

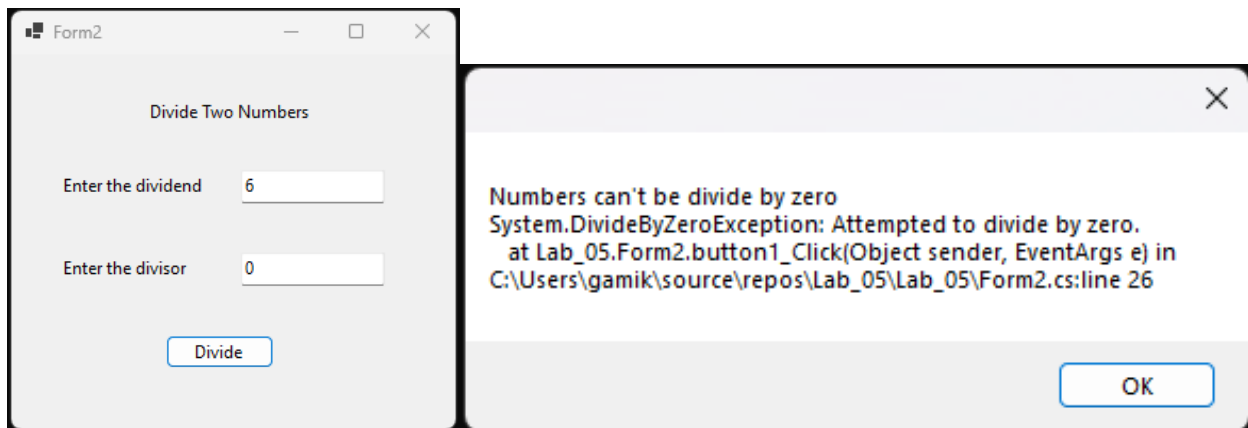
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Lab_05
{
    public partial class Form2 : Form
    {
        public Form2()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            try
            {
                int num1 = int.Parse(txtDividend.Text);
                int num2 = int.Parse(txtDivisor.Text);
                int num3 = num1 / num2;
                MessageBox.Show(num3.ToString());
            }
            catch (FormatException e1)
            {
                MessageBox.Show("Enter Numbers to both text boxes"+
Environment.NewLine+ e1.ToString());
            }
        }
    }
}
```

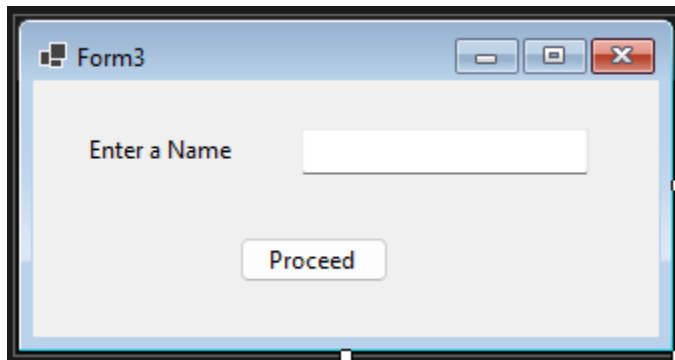
```
        catch (DivideByZeroException e2)
        {
            MessageBox.Show("Numbers can't be divide by zero" +
Environment.NewLine + e2.ToString());
        }
    }
}
```

06.a**06.b****06.c**



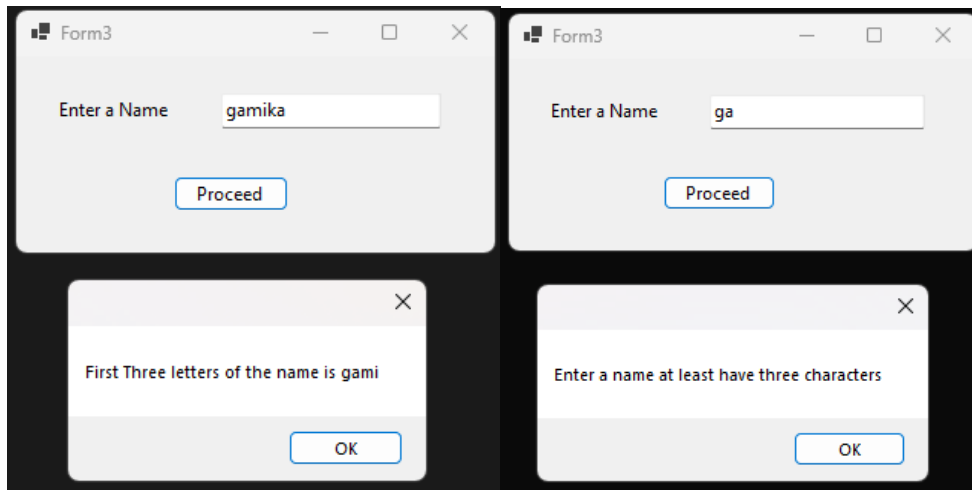
Exercise 03

01.



03.

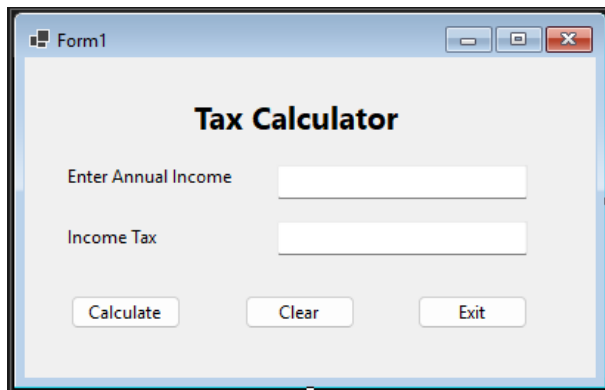
```
namespace Lab_05
{
    internal static class Program
    {
        /// <summary>
        /// The main entry point for the application.
        /// </summary>
        [STAThread]
        static void Main()
        {
            // To customize application configuration such as set high DPI settings
            // or default font,
            // see https://aka.ms/applicationconfiguration.
            ApplicationConfiguration.Initialize();
            Application.Run(new Form3());
        }
    }
}
```



Exceptions Handling II

Exercise 01

01.



07.

```
namespace Lab_05_02
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void button1_Click(object sender, EventArgs e)
        {
            try
            {
                int noTaxThreshold = 11000;
                int band1 = 11000;
                int band2 = 43000;
            }
        }
    }
}
```

```

        int band3 = 150000;
        decimal tax = 0;
        string msg = "Income need to be greater than 11000 to calculate a tax";
        int salary = int.Parse(txtIncome.Text);
        if (salary < noTaxThreshold) throw new
        InvalidIncomeException(msg);
        if (salary >= band3)
        {
            tax = (salary - noTaxThreshold) * (decimal)0.45;
        }
        if (salary > band2)
        {
            tax = (salary - noTaxThreshold) * (decimal)0.40;
        }
        if (salary > band1)
        {
            tax = (salary - noTaxThreshold) * (decimal)0.20;
        }

        txtTax.Text = tax.ToString();
    }
    catch (InvalidIncomeException e1)
    {
        MessageBox.Show(e1.ToString(), " Invalid Annual Income");
    }
    catch (FormatException e1)
    {
        MessageBox.Show(e1.ToString(), "Enter Numeric Value as Annual Income");
    }
    catch (System.OverflowException e1)
    {
        MessageBox.Show(e1.ToString(), "Too Large number to handle");
    }
}

private void btnClear_Click(object sender, EventArgs e)
{
    txtIncome.Clear();
    txtTax.Clear();
}

private void btnExit_Click(object sender, EventArgs e)
{
    this.Close();
}
}

public class InvalidIncomeException : Exception
{
    public InvalidIncomeException(String message)
    : base(message)
    {
    }
}
}

```

Form1

Tax Calculator

Enter Annual Income

Income Tax

08.

The image displays a C# WinForms application titled 'Form1' with a 'Tax Calculator' interface. The form contains two text boxes: 'Enter Annual Income' (containing '10000') and 'Income Tax'. Below these are three buttons: 'Calculate', 'Clear', and 'Exit'. Two error messages are shown below the form:

Invalid Annual Income (Light Blue Dialog Box):

```
Lab_05_02.InvalidIncomeException: Income need to be greater than 11000 to calculate a tax
   at Lab_05_02.Form1.button1_Click(Object sender, EventArgs e) in C:\Users\gamik\source\repos\Lab_05_02\Lab_05_02\Form1.cs:line 21
```

Enter Numeric Value as Annual Income (Light Orange Dialog Box):

```
System.FormatException: The input string "" was not in a correct format.
   at System.Number.ThrowFormatException[TChar](ReadOnlySpan`1 value)
   at System.Int32.Parse(String s)
   at Lab_05_02.Form1.button1_Click(Object sender, EventArgs e) in C:\Users\gamik\source\repos\Lab_05_02\Lab_05_02\Form1.cs:line 20
```

Form1

Tax Calculator

Enter Annual Income

Income Tax

Too Large number to handle

System.OverflowException: Value was either too large or too small for an Int32.
 at System.Int32.ThrowOverflowException[TInteger]()
 at System.Int32.Parse(String s)
 at Lab_05_02.Form1.button1_Click(Object sender, EventArgs e) in
 C:\Users\gamik\source\repos\Lab_05_02\Lab_05_02\Form1.cs:line 20

OK

Exercise 02**01.**

The screenshot shows a Windows application window titled 'Form2'. Inside the window, there is a header area with the 'UNSW SYDNEY' logo on the left and the text 'Australia's Global University' on the right. Below the header, the title 'New Student Registration Form' is centered. The form contains several input fields: 'Name', 'Age', and 'Country', each with a text box. There are also two radio buttons for 'Gender', labeled 'Female' and 'Male'. At the bottom center, there is a button labeled 'Register'.

02.

```

using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Diagnostics.Metrics;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Microsoft.VisualBasic.Devices;
using Microsoft.Win32;
using static System.Windows.Forms.VisualStyles.VisualStyleElement;

namespace Lab_05_02
{
    public partial class Form2 : Form
    {
        public Form2()
        {
            InitializeComponent();

            private void radioButton2_CheckedChanged(object sender, EventArgs e)
            {
            }

            private void label3_Click(object sender, EventArgs e)
            {
            }
        }
    }
}

```

```

private void button1_Click(object sender, EventArgs e)
{
    try
    {
        string name = txtName.Text;
        int age = int.Parse(txtAge.Text);
        string country = txtCountry.Text;
        string gender;

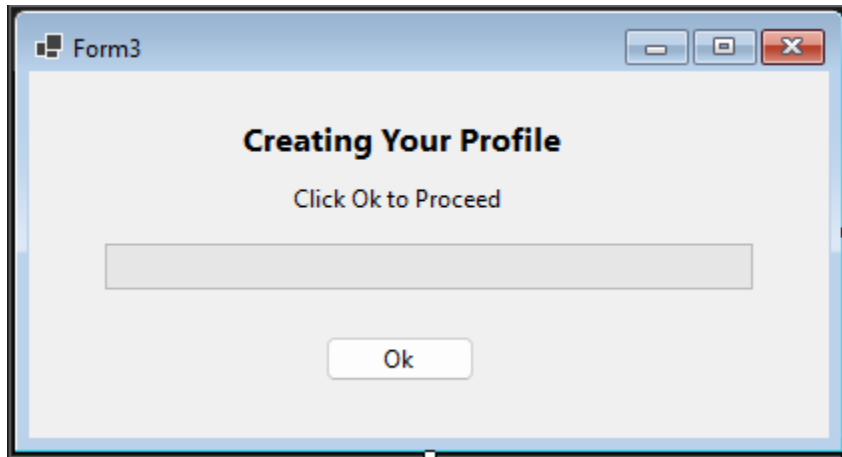
        if (age < 17 && age > 70)
        {
            throw new InvalidAgeRangeException("Sorry, You should be older than 15 and
younger than 70 to register our university");
        }
        if (Female.Checked == true)
        {
            gender = "Female";
        }
        else if (Male.Checked == true)
        {
            gender = "Male";
        }
        else
        {
            throw new GenderException("Should Select a gender from the radio buttons");
        }
        Form3 frm3 = new Form3();
        frm3.Show();
    }
    catch (InvalidAgeRangeException e1)
    {
        MessageBox.Show(e1.ToString(), "Can't Register!");
    }
    catch (GenderException e1)
    {
        MessageBox.Show(e1.ToString(), "Warning!");
    }
    catch (FormatException e1)
    {
        MessageBox.Show(e1.ToString(), "Enter a Numerical Value to the Age");
    }
}

public class InvalidAgeRangeException : Exception
{
    public InvalidAgeRangeException(string message)
    : base(message)
    {
    }
}

public class GenderException : Exception
{
    public GenderException(string message)
    : base(message)
    {
    }
}
}

```

05.



```

using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

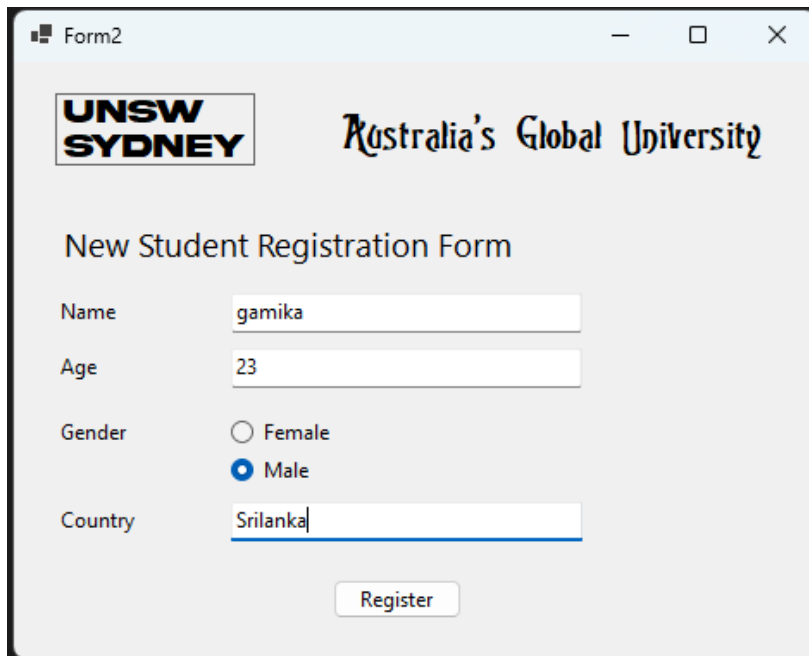
namespace Lab_05_02
{
    public partial class Form3 : Form
    {
        public Form3()
        {
            InitializeComponent();
        }

        private void Form3_Load(object sender, EventArgs e)
        {
            progressBar1.Visible = false;
        }

        private void btnOk_Click(object sender, EventArgs e)
        {
            label2.Visible = false;
            btnOk.Visible = false;
            int value = 0;
            progressBar1.Visible = true;
            do
            {
                progressBar1.Value = value;
                value = value + 1;
            }
            while (value < progressBar1.Maximum);
            MessageBox.Show("Registration Completed", "Congradulations!");
        }
    }
}

```

09.



Form2

UNSW SYDNEY Australia's Global University

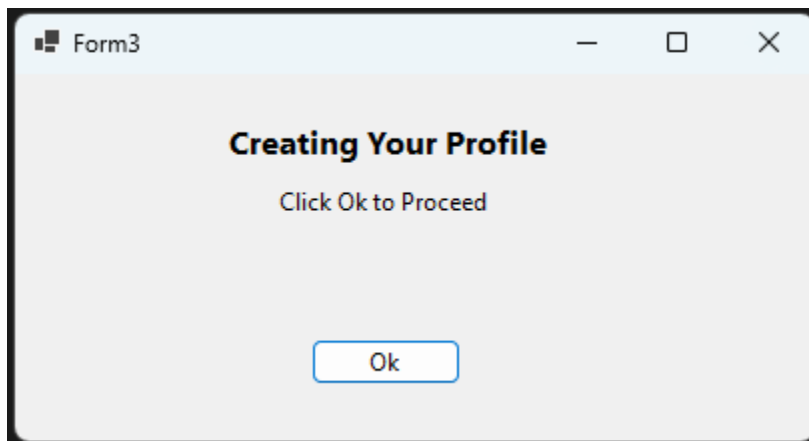
New Student Registration Form

Name:

Age:

Gender: ☐ Female ☒ Male

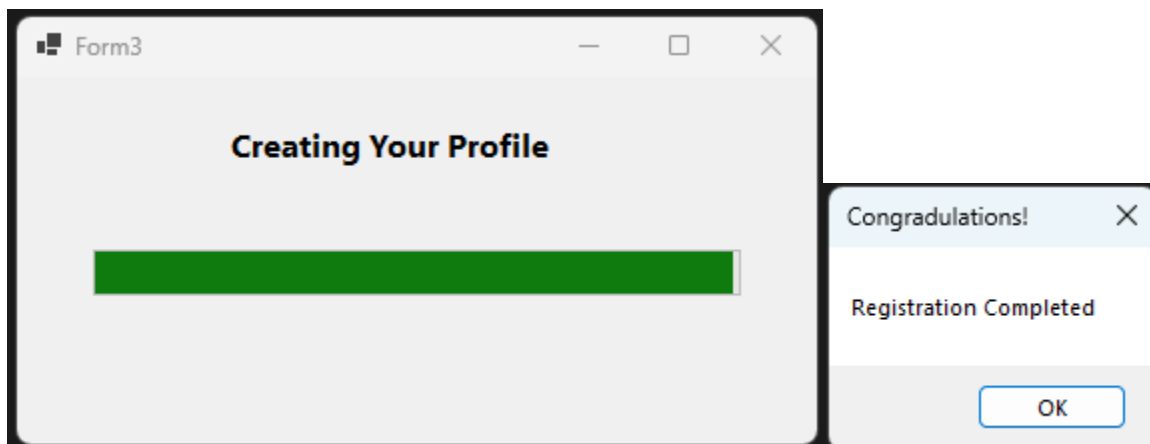
Country:



Form3

Creating Your Profile

Click Ok to Proceed

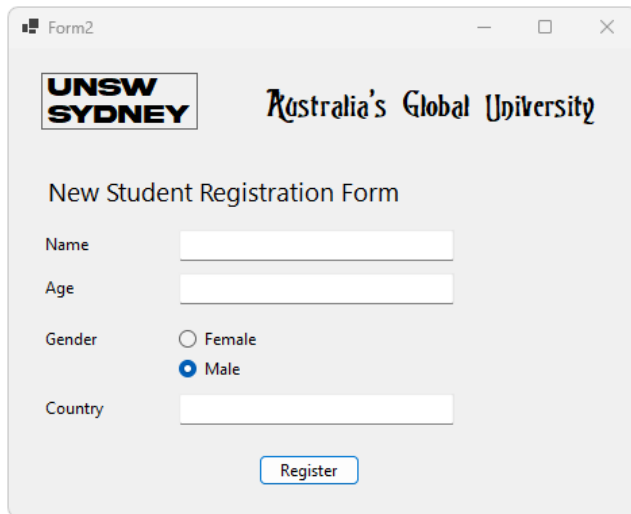


Form3

Creating Your Profile

Congradulations!

Registration Completed



Form2

UNSW SYDNEY Australia's Global University

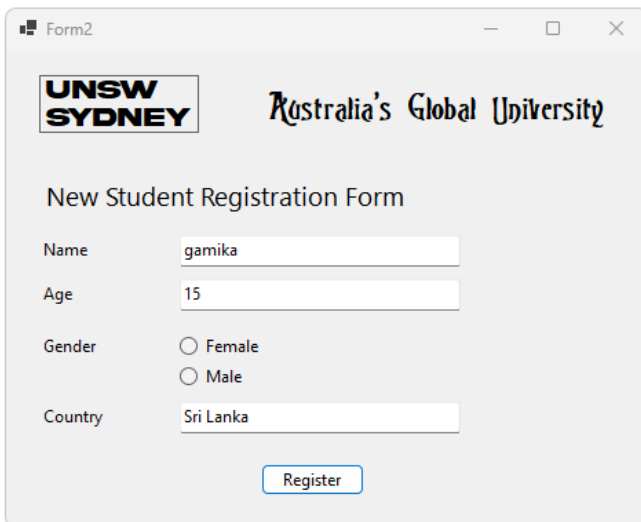
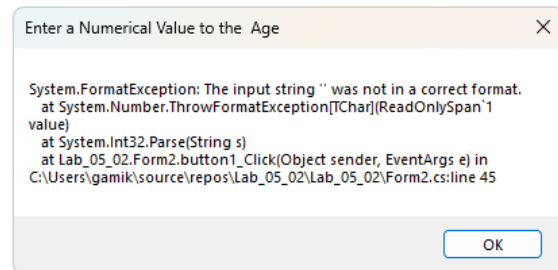
New Student Registration Form

Name

Age

Gender ☐ Female ☒ Male

Country



Form2

UNSW SYDNEY Australia's Global University

New Student Registration Form

Name

Age

Gender ☐ Female ☐ Male

Country

