3.C# Windows Application

(1) Develop a windows application for arithmetic calculator.

Code:Form1.cs

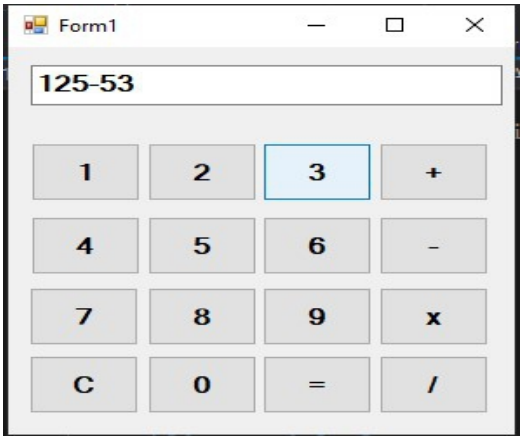
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace WinApp3_1
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void Form1_Load(object sender, EventArgs e)
      {

      }

      private void button1_Click(object sender, EventArgs e)
      {
         textBox1.Text += "1";
      }

      private void button2_Click(object sender, EventArgs e)
      {
         textBox1.Text += "2";
      }

      private void button3_Click(object sender, EventArgs e)
      {
         textBox1.Text += "3";
      }

      private void buttonAdd_Click(object sender, EventArgs e)
      {
         if (textBox1.Text.Length != 0)
         {
            char c = textBox1.Text[textBox1.Text.Length - 1];
            if (c != '+' && c != '-' && c != '*' && c != '/')
               textBox1.Text += "+";
         }
      }

      private void button4_Click(object sender, EventArgs e)
      {
         textBox1.Text += "4";
      }
```

```
private void button5_Click(object sender, EventArgs e)
{
   textBox1.Text += "5";
}

private void button6_Click(object sender, EventArgs e)
{
   textBox1.Text += "6";
}

private void buttonSub_Click(object sender, EventArgs e)
{
   if (textBox1.Text.Length != 0)
   {
      char c = textBox1.Text[textBox1.Text.Length - 1];
      if (c != '+' && c != '-' && c != '*' && c != '/')
         textBox1.Text += "-";
   }
}

private void button7_Click(object sender, EventArgs e)
{
   textBox1.Text += "7";
}

private void button8_Click(object sender, EventArgs e)
{
   textBox1.Text += "8";
}

private void button9_Click(object sender, EventArgs e)
{
   textBox1.Text += "9";
}

private void buttonMul_Click(object sender, EventArgs e)
{
   if (textBox1.Text.Length != 0)
   {
      char c = textBox1.Text[textBox1.Text.Length - 1];
      if (c != '+' && c != '-' && c != '*' && c != '/')
         textBox1.Text += "*";
   }
}

private void buttonC_Click(object sender, EventArgs e)
{
   textBox1.Text = "";
}

private void button0_Click(object sender, EventArgs e)
{
   textBox1.Text += "0";
}

private void buttonDiv_Click(object sender, EventArgs e)
{
```

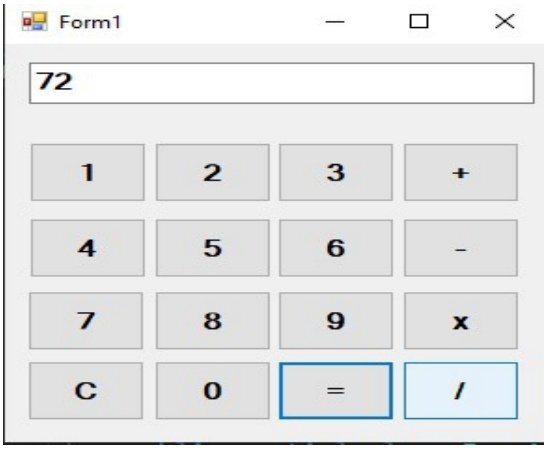
```
            if (textBox1.Text.Length != 0)
            {
                char c = textBox1.Text[textBox1.Text.Length - 1];
                if (c != '+' && c != '-' && c != '*' && c != '/')
                    textBox1.Text += "/";
            }
        }

        private void buttonEql_Click(object sender, EventArgs e)
        {
            try
            {
                DataTable dt = new DataTable();
                var v = dt.Compute(textBox1.Text, "");
                textBox1.Text = v.ToString();
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.ToString());
            }
        }
    }
}
```

Output:

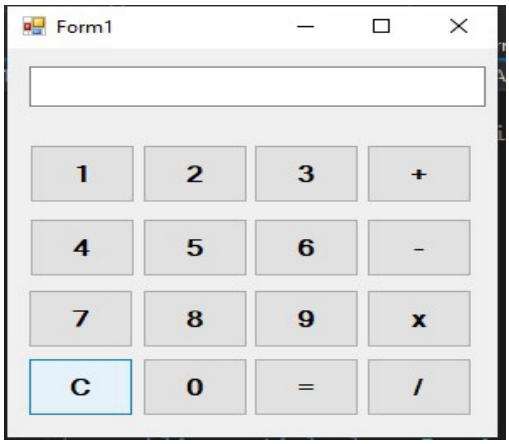
1.



2.



3.



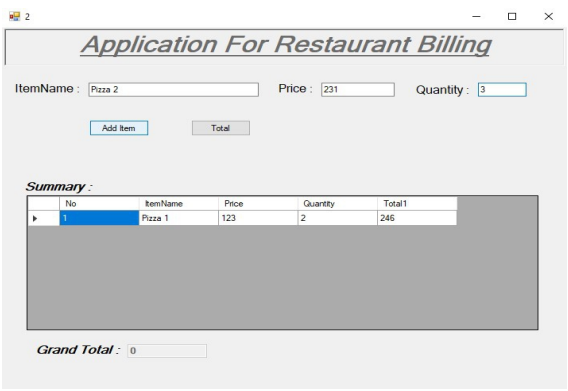
(2) Develop a windows application for restaurant billing.
Code:Form1.cs

```
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 WinApp3_2
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      public int count = 0;
      public double total = 0;

      private void Form1_Load(object sender, EventArgs e)
      {

      }

      private void btn_AddItem_Click(object sender, EventArgs e)
      {
         try
         {
            count++;
            double total2 = double.Parse(txt_Price.Text) * double.Parse(txt_Quantity.Text);
            DGV1.Rows.Add(count, txt_ItemName.Text, txt_Price.Text, txt_Quantity.Text, total2.ToString());

            txt_ItemName.Clear();
            txt_Price.Clear();
            txt_Quantity.Clear();
         }
         catch (Exception ex)
         {
            MessageBox.Show(ex.ToString());
         }

      }

      private void btn_Total_Click(object sender, EventArgs e)
      {
         for (int i = 0; i < DGV1.Rows.Count; i++)
         {


            total+=double.Parse(this.DGV1.Rows[i].Cells["Total1"].Value.ToString());
```

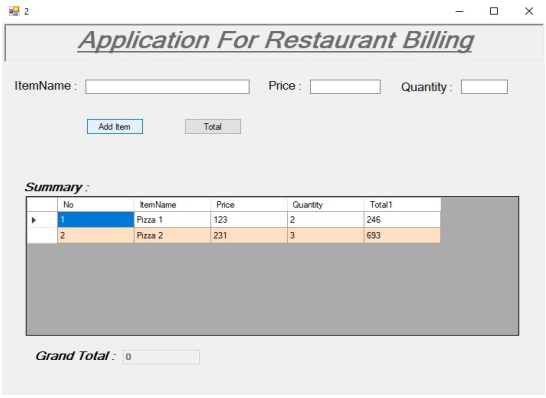
```
        }
        txt_Total.Text = total.ToString();
    }


    private void lbl_Qauntity_Click(object sender, EventArgs e)
    {

    }

    private void richTextBox1_TextChanged(object sender, EventArgs e)
    {

    }


  }
}
```

Output:

1.



2.



3.

(3) Develop a windows application for simple text editor. Use menus and dialog controls.
Code:Form1.cs

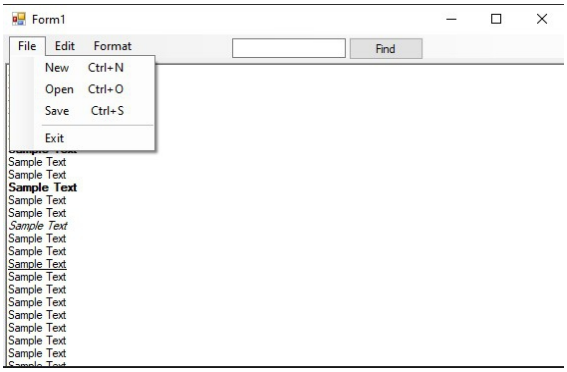
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.IO;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace WinApp3_3
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void richTextBox1_TextChanged(object sender, EventArgs e)
      {

      }

      private void newToolStripMenuItem_Click(object sender, EventArgs e)
      {
         richTextBox1.ResetText();
      }

      private void openToolStripMenuItem_Click(object sender, EventArgs e)
      {
         if (openFileDialog1.ShowDialog() == DialogResult.OK)
         {
            richTextBox1.Text = File.ReadAllText(openFileDialog1.FileName);
         }
      }

      private void saveToolStripMenuItem_Click(object sender, EventArgs e)
      {
         if (saveFileDialog1.ShowDialog() == DialogResult.OK)
         {
            File.WriteAllText(saveFileDialog1.FileName, richTextBox1.Text);
         }
      }

      private void exitToolStripMenuItem_Click(object sender, EventArgs e)
      {
         Application.Exit();
      }

      private void undoToolStripMenuItem_Click(object sender, EventArgs e)
```

```
{
   richTextBox1.Undo();
}

private void cutToolStripMenuItem_Click(object sender, EventArgs e)
{
   richTextBox1.Cut();
}

private void redoStripMenuItem_Click(object sender, EventArgs e)
{
   richTextBox1.Redo();
}

private void copyToolStripMenuItem_Click(object sender, EventArgs e)
{
   richTextBox1.Copy();
}

private void pasteToolStripMenuItem_Click(object sender, EventArgs e)
{
   richTextBox1.Paste();
}

private void selectAllStripMenuItem_Click(object sender, EventArgs e)
{
   richTextBox1.SelectAll();
}

private void boldStripMenuItem_Click(object sender, EventArgs e)
{
   if (richTextBox1.SelectionFont.Style == FontStyle.Bold)
      richTextBox1.SelectionFont = new Font(richTextBox1.SelectionFont, FontStyle.Regular);
   else
     richTextBox1.SelectionFont = new Font(richTextBox1.SelectionFont, FontStyle.Bold);
}

private void italicStripMenuItem_Click(object sender, EventArgs e)
{
   if (richTextBox1.SelectionFont.Style == FontStyle.Italic)
      richTextBox1.SelectionFont = new Font(richTextBox1.SelectionFont, FontStyle.Regular);
   else
      richTextBox1.SelectionFont = new Font(richTextBox1.SelectionFont, FontStyle.Italic);
}

private void underlineStripMenuItem_Click(object sender, EventArgs e)
{
   if (richTextBox1.SelectionFont.Style == FontStyle.Underline)
      richTextBox1.SelectionFont = new Font(richTextBox1.SelectionFont, FontStyle.Regular);
   else
      richTextBox1.SelectionFont = new Font(richTextBox1.SelectionFont, FontStyle.Underline);
}

private void wrapWordToolStripMenuItem_Click(object sender, EventArgs e)
{
   //richTextBox1.SelectAll();
   //richTextBox1.SelectionFont = new Font();
   richTextBox1.WordWrap = true;
```

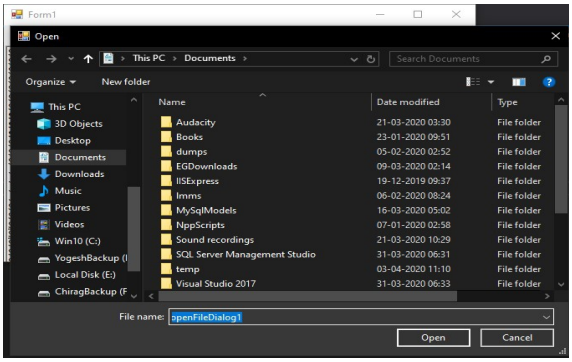
```
    }

    private void fontToolStripMenuItem1_Click(object sender, EventArgs e)
    {
        fontDialog1.ShowDialog();

    }

    private void btn_Find_Click(object sender, EventArgs e)
    {
        int index = richTextBox1.Find(txt_Find.Text);
        int len = txt_Find.Text.Length;
        richTextBox1.SelectionStart = index;
        richTextBox1.SelectionLength = len;

    }
  }
}
```

Output:

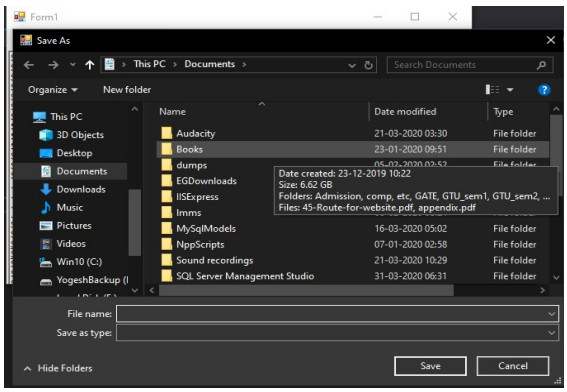
1.



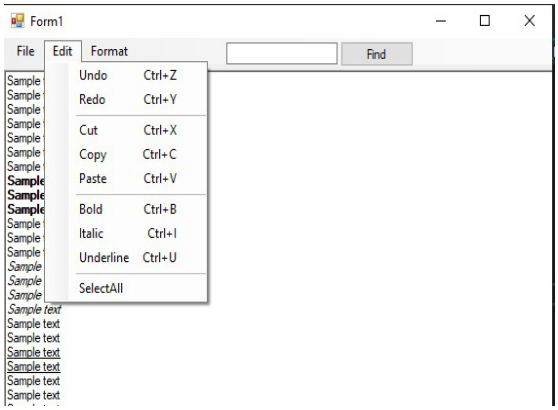
2.



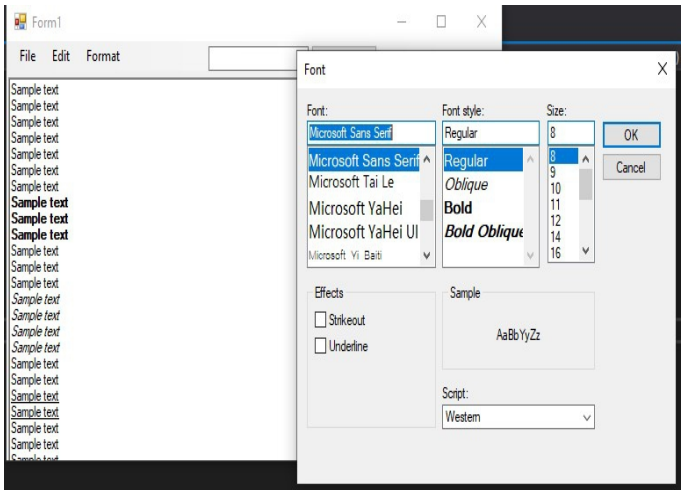
3.



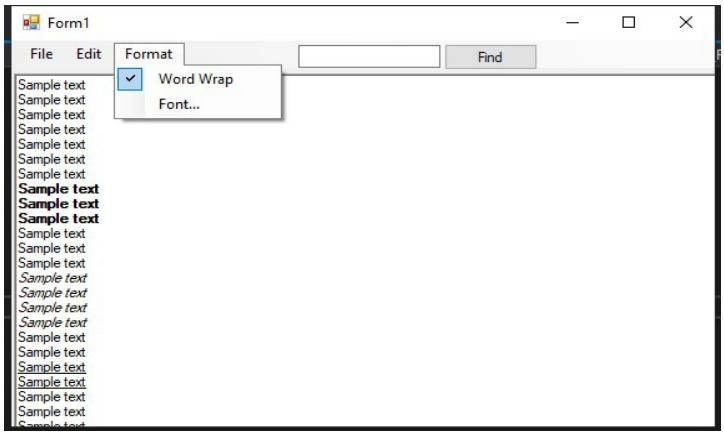
4.



5.


Form1
File Edit Format
Font
Font:
Font style:
Size:
Microsoft Sans Serif
Regular
8
OK
Cancel
Microsoft Tai Le
Microsoft YaHei
Microsoft YaHei UI
Oblique
Bold
Bold Oblique
Effects
Strikeout
Underline
Sample
AaBbYyZz
Script:
Western
Sample text

6.

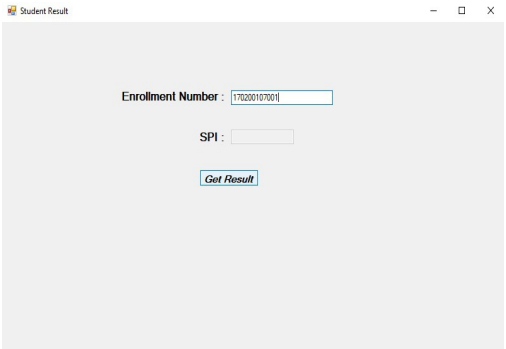

Form1
File Edit Format
Find
Word Wrap
Font...
Sample text

(4) Develop a windows application to display result of a student given his enrollment number.
Code:Form1.cs

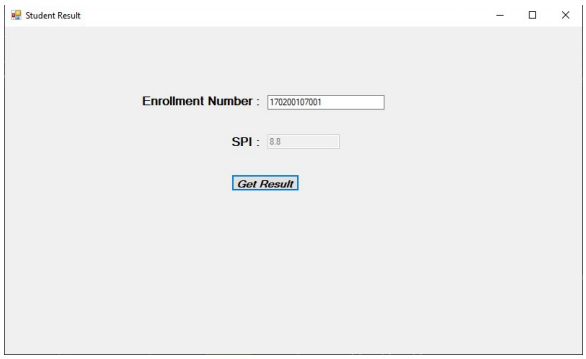
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace WinApp3_4
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void btn_Result_Click(object sender, EventArgs e)
      {
         string cs = @"Data Source=.\SQLEXPRESS; Initial Catalog=student; Integrated Security= True";
         SqlConnection cn = new SqlConnection(cs);
         cn.Open();
         Int64 enroll = Int64.Parse(txt_Enrollment.Text);
         string query = "select SPI from dbo.result where Enrollment=" + enroll;
         SqlCommand command= new SqlCommand(query, cn);

         SqlDataReader reader = command.ExecuteReader();
         reader.Read();
         txt_Result.Text = reader["SPI"].ToString();

         cn.Close();
      }
   }
}
```

Output:

1.



2.



(5) Develop a windows application to demonstrate visual inheritance.

Code:Form1.cs

```
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 WinApp3_5
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void timer1_Tick(object sender, EventArgs e)
      {
         lbl_Time.Text = DateTime.Now.ToString();
      }

      private void btn_Search_Click(object sender, EventArgs e)
      {
         MessageBox.Show("Searching " + txt_Search.Text + "... ");
      }

      private void Form1_Load(object sender, EventArgs e)
      {

      }
   }
}
```

Code:Form2.cs

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

namespace WinApp3_5
{
   public partial class Form2 : WinApp3_5.Form1
   {
      public Form2()
      {
         InitializeComponent();
      }
```

```
        private void btn_AddStudent_Click(object sender, EventArgs e)
        {
            Form3 f = new Form3();
            f.Show();
        }

        private void btn_Remove_Click(object sender, EventArgs e)
        {
            Form4 f = new Form4();
            f.Show();
        }
    }
}
```

Code:Form3.cs

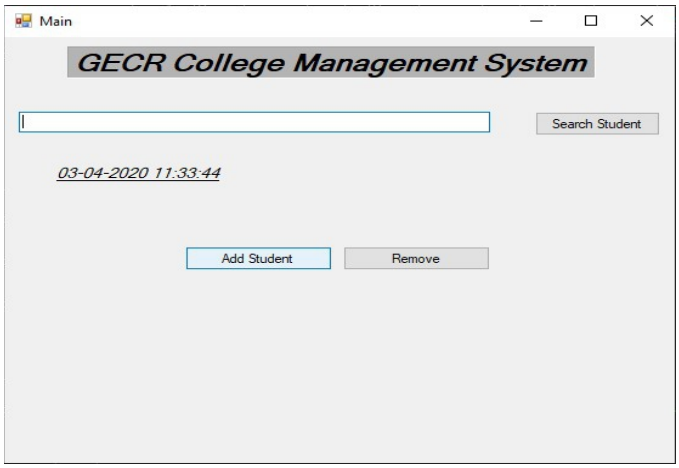
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Text;
using System.Windows.Forms;

namespace WinApp3_5
{
    public partial class Form3 : WinApp3_5.Form1
    {
        public Form3()
        {
            InitializeComponent();
        }
    }
}
```

Code:Form4.cs

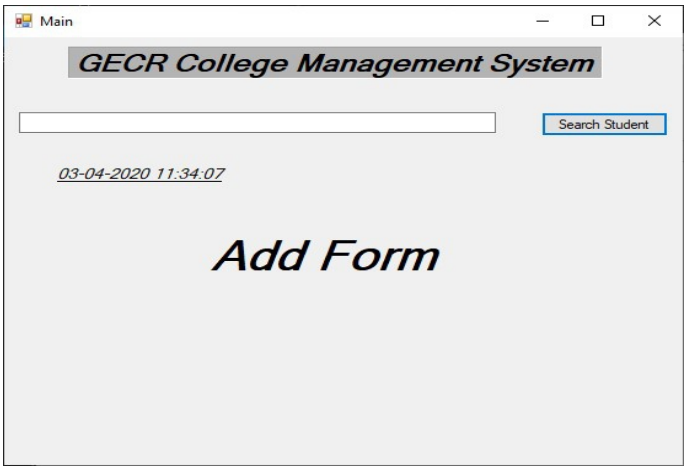
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Text;
using System.Windows.Forms;

namespace WinApp3_5
{
    public partial class Form4 : WinApp3_5.Form1
    {
        public Form4()
        {
            InitializeComponent();
        }
    }
}
```

Output:

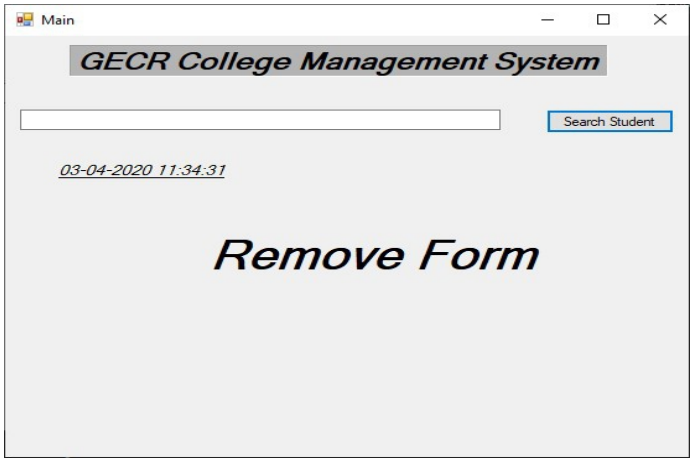
1.


Main
GECR College Management System
Search Student
03-04-2020 11:33:44
Add Student
Remove

2.


Main
GECR College Management System
Search Student
03-04-2020 11:34:07
Add Form

3.


Main
GECR College Management System
Search Student
03-04-2020 11:34:31
Remove Form

(6) Develop a WPF application for income tax calculation.

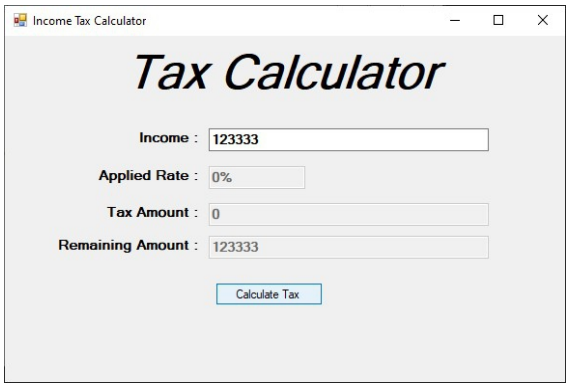
Code:Form1.cs

```
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 WinApp3_6
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void btn_CalculateTax_Click(object sender, EventArgs e)
      {
         //temp variables
         double income = double.Parse(txt_Income.Text);
         float rate = 0;
         double tax = 0;
         double remaining = double.Parse(txt_Income.Text);

         //calculate
         if (income <= 250000)
         {
            remaining = income - tax;
         }
         else if (income > 250000 && income <= 500000)
         {
            rate = 0.05F;
            tax = income * rate;
            remaining = income - tax;
         }
         else if (income > 500000 && income <= 750000)
         {
            rate = 0.1F;
            tax = income * rate;
            remaining = income - tax;
         }
         else if (income > 750000 && income <= 1000000)
         {
            rate = 0.15F;
            tax = income * rate;
            remaining = income - tax;
         }
         else if (income > 1000000 && income <= 1250000)
         {
            rate = 0.2F;
            tax = income * rate;
            remaining = income - tax;
```

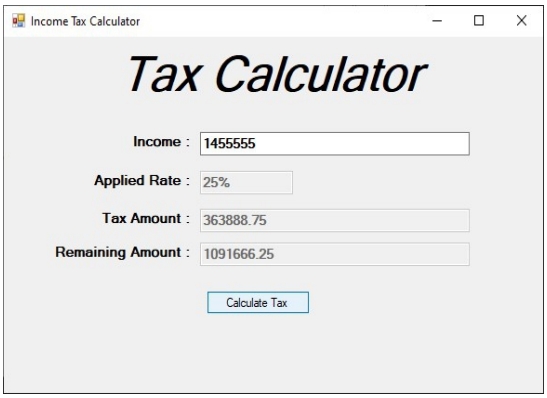
```
        }
        else if (income > 1250000 && income <= 1500000)
        {
            rate = 0.25F;
            tax = income * rate;
            remaining = income - tax;
        }
        else if (income > 1500000)
        {
            rate = 0.3F;
            tax = income * rate;
            remaining = income - tax;
        }
        else { MessageBox.Show("Case not matched"); }




        //set output
        txt_Rate.Text = ((rate * 100).ToString()) + "%";
        txt_Tax.Text = tax.ToString();
        txt_Remaining.Text = remaining.ToString();


    }
  }
}
```

Output:

1.



2.



3.