RK UNIVERSITY

Faculty of Technology
TSEE (Oct. – 2023)
Semester – 5

Date: 18-10-2023 **Branch: BCA**
Subject Name: Windows Application Development Using C# **Subject code: BCA511**

Answer Sheet

Division: A
Exam Time: 10:20
SET: 3
Enrollment No: 21FOTCA11108
Name: Pandya Smit C
RollNo:21

Instructions to Candidates:

1. Please fill Division, Exam Time, Set of Paper, Enrollment No., Name & RollNo.
2. You will save this file & upload your saved file with the file name is {rollno_enrollmentNo_name_Answersheet}.
3. This assessment is intended to test the hands on skills related C# Programming.
4. You must take screenshot of output and write code of each task solution.
5. Both screenshot and code (each task solution) must contain your Enrollment and Name.

Task_1 Ans.

```
using System;
namespace smit
{


    class ArmstrongNumberChecker
    {
        // Function to calculate the power of a number
        static int Power(int baseNumber, int exponent)
        {
            int result = 1;
            for (int i = 0; i < exponent; i++)
            {
                result *= baseNumber;
            }
            return result;
        }

        // Function to check if a number is an Armstrong number
        static bool IsArmstrong(int number)
        {
            int originalNumber = number;
            int numDigits = (int)Math.Floor(Math.Log10(number) + 1);
            int sum = 0;

            while (number > 0)
            {
                int digit = number % 10;
                sum += Power(digit, numDigits);
                number /= 10;
```

```
            }

            return sum == originalNumber;
        }

        static void Main(string[] args)
        {
            Console.Write("Enter a number: ");
            if (int.TryParse(Console.ReadLine(), out int number))
            {
                if (IsArmstrong(number))
                {
                    Console.WriteLine($"{number} is an Armstrong number.");
                }
                else
                {
                    Console.WriteLine($"{number} is not an Armstrong
number.");
                }
            }
            else
            {
                Console.WriteLine("Invalid input. Please enter a valid
number.");
            }
        }
    }
}
```

Task_2 Ans.

```
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 static System.Windows.Forms.VisualStyles.VisualStyleElement;

namespace WindowsFormsApp1
{
  public partial class Arithmatic : Form
  {
    public Arithmatic()
    {
      InitializeComponent();
    }

    private void button2_Click(object sender, EventArgs e)
    {

    }

    private void btnAdd_Click(object sender, EventArgs e)
    {
      int num = int.Parse(txt1.Text);
      int num2 = int.Parse(txt2.Text);
      int sum = num + num2;
      //btnAdd.Text = sum.ToString();
      MessageBox.Show("Addition Is:"+sum);
    }
```

```
    private void label1_Click(object sender, EventArgs e)
    {

    }

    private void btnSub_Click(object sender, EventArgs e)
    {
       int num=int.Parse(txt1.Text);
       int num2=int.Parse(txt2.Text);
       int sub = num - num2;
       MessageBox.Show("Subtraction Is:" + sub);
    }

    private void btnMul_Click(object sender, EventArgs e)
    {
       int num= int.Parse(txt1.Text);
       int num2=int.Parse(txt2.Text);
       int mul = num * num2;
       MessageBox.Show("Multiplication Is:"+mul);
    }

    private void btnMod_Click(object sender, EventArgs e)
    {
       int num=int.Parse (txt1.Text);
       int num2=int.Parse(txt2.Text);
       int mod = num / num2;
       MessageBox.Show("Module Is:" + mod);
    }
  }
}
```

Task_3 Ans.

```
class Test
{
  public static int SumOfDigit(int number)
  {
    if (number == 0)
    {
```

```
        return 0;
      }
      else
      {
        int rem = number % 10;
        return rem + SumOfDigit(number / 10);
      }
    }

    public static void Main()
    {
      int num = 0;
      int sum = 0;
      Console.Write("Enter the number: ");
      num = int.Parse(Console.ReadLine());
      sum = SumOfDigit(num);
      Console.WriteLine("Sum of digits: " + sum);
    }
}
```

Task_4 Ans.

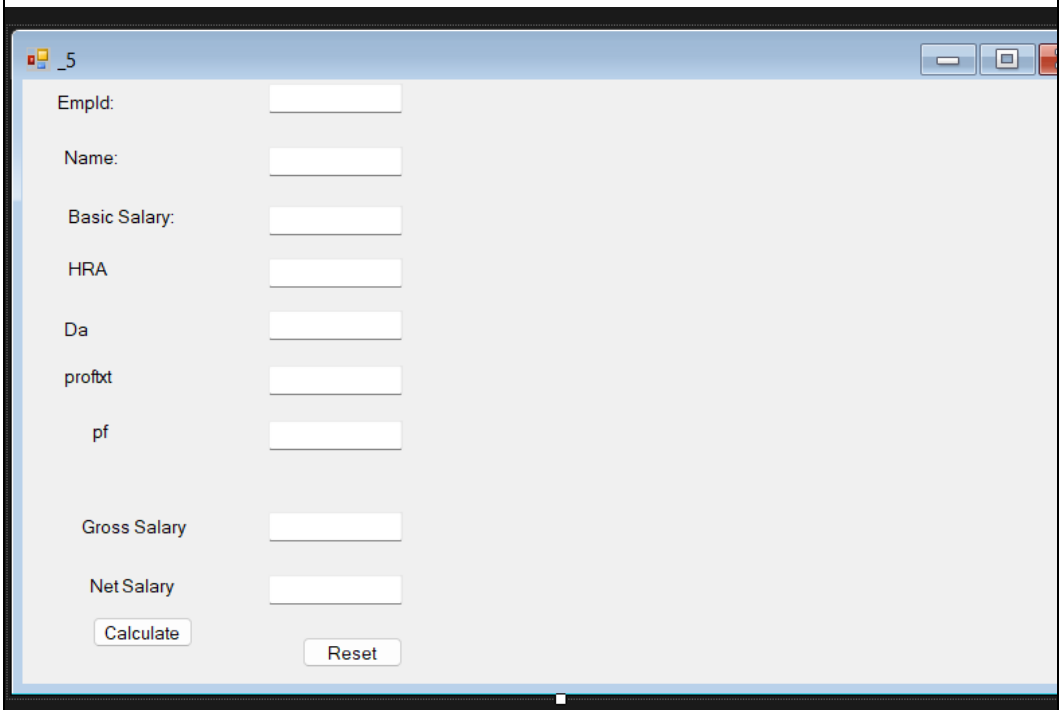
```
using System;

class Shape
{
    public virtual void DisplayInfo()
    {
        Console.WriteLine("This is a generic shape.");
    }
}

class Circle : Shape
{
    private double radius;

    public Circle(double r)
    {
        radius = r;
    }

    public override void DisplayInfo()
    {
        Console.WriteLine("This is a circle with radius " + radius);
    }
}

class Rectangle : Shape
{
    private double width;
    private double height;

    public Rectangle(double w, double h)
    {
        width = w;
```

```
        height = h;
    }

    public override void DisplayInfo()
    {
        Console.WriteLine("This is a rectangle with width " + width + " and height
" + height);
    }
}

class Program
{
    static void Main()
    {
        Shape[] shapes = new Shape[3];
        shapes[0] = new Circle(5.0);
        shapes[1] = new Rectangle(4.0, 6.0);
        shapes[2] = new Circle(3.0);

        foreach (Shape shape in shapes)
        {
            shape.DisplayInfo();
        }
    }
}
```

Task_5 Ans.

```
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 WindowsFormsApp1
{
    public partial class _5 : Form
    {
        public _5()
        {
            InitializeComponent();
        }

        private void btnCalculate_Click(object sender, EventArgs e)
        {

            // Parse input values
            double basicSalary = double.Parse(txtBasicSalary.Text);
            double hra = double.Parse(txtHRA.Text);
            double da = double.Parse(txtDA.Text);
            double profTax = double.Parse(txtProfTax.Text);
            double pf = double.Parse(txtPF.Text);
```

```
            // Calculate Gross Salary and Net Salary
            double grossSalary = basicSalary + hra + da;
            double netSalary = grossSalary - profTax - pf;

            // Display the results
            lblGrossSalary.Text = "Gross Salary: " + grossSalary.ToString("C");
            lblNetSalary.Text = "Net Salary: " + netSalary.ToString("C");

        }

        private void btnReset_Click(object sender, EventArgs e)
        {

            txtEmpID.Clear();
            txtName.Clear();
            txtBasicSalary.Clear();
            txtHRA.Clear();
            txtDA.Clear();
            txtProfTax.Clear();
            txtPF.Clear();
            lblGrossSalary.Text = "Gross Salary: ";
            lblNetSalary.Text = "Net Salary: ";


        }
    }
}
```



Task_6 Ans.

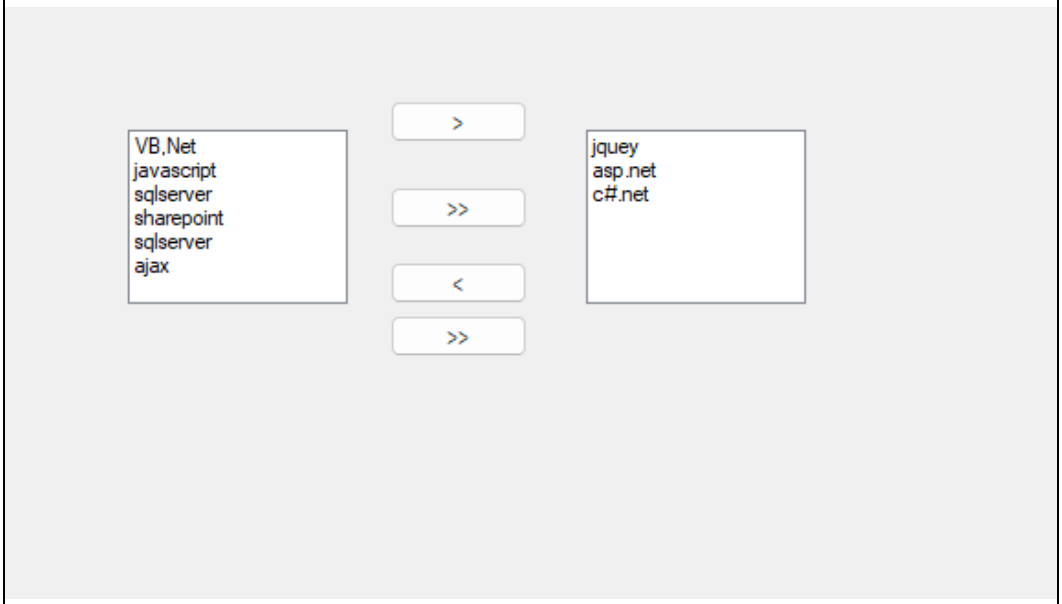
```
using System;

namespace InheritanceDemo
{
    class A
    {
        public int a;
        // You can add constructor and other members here.
```

```
  }

  // Define class B to inherit from class A
  class B : A
  {
    public int b;
    // You can add constructor and other members specific to class B here.

    public int getSub()
    {
      return a - b;
    }
  }

  class Test
  {
    static void Main(string[] args)
    {
      B obj = new B();
      obj.a = 10; // Set a to a specific value
      obj.b = 5;  // Set b to a specific value
      Console.WriteLine("Subtraction = {0}", obj.getSub());
    }
  }
}
```

Task_7 Ans.

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

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

    private void btnAdd_Click(object sender, EventArgs e)
    {
      if (sourceListBox.SelectedIndex >= 0)
      {
        string selectedItem = sourceListBox.SelectedItem.ToString();
        sourceListBox.Items.Remove(selectedItem);
        destinationListBox.Items.Add(selectedItem);
      }
    }

    private void btnRemove_Click(object sender, EventArgs e)
    {
      if (destinationListBox.SelectedIndex >= 0)
      {
        string selectedItem = destinationListBox.SelectedItem.ToString();
        destinationListBox.Items.Remove(selectedItem);
```

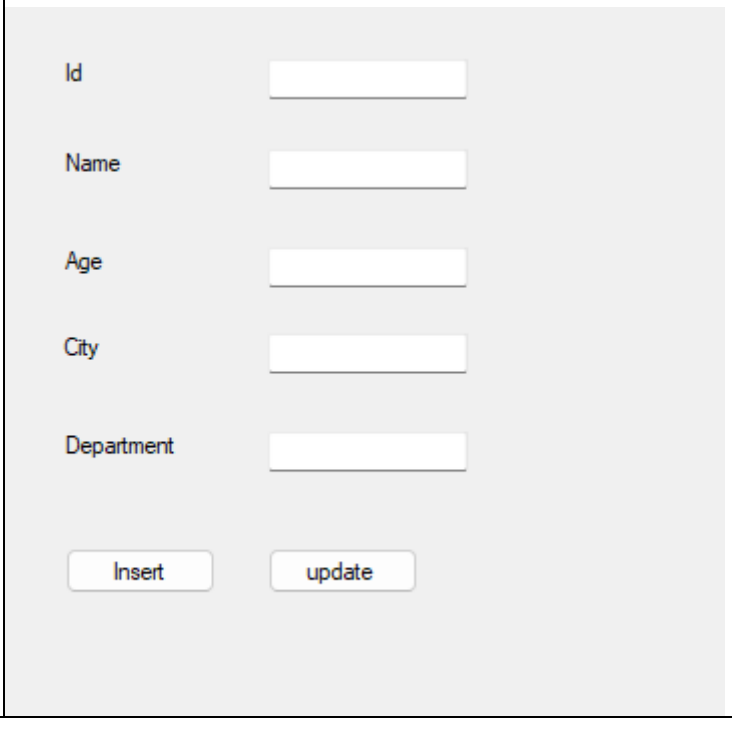
```
            sourceListBox.Items.Add(selectedItem);
        }
    }
  }
}
```

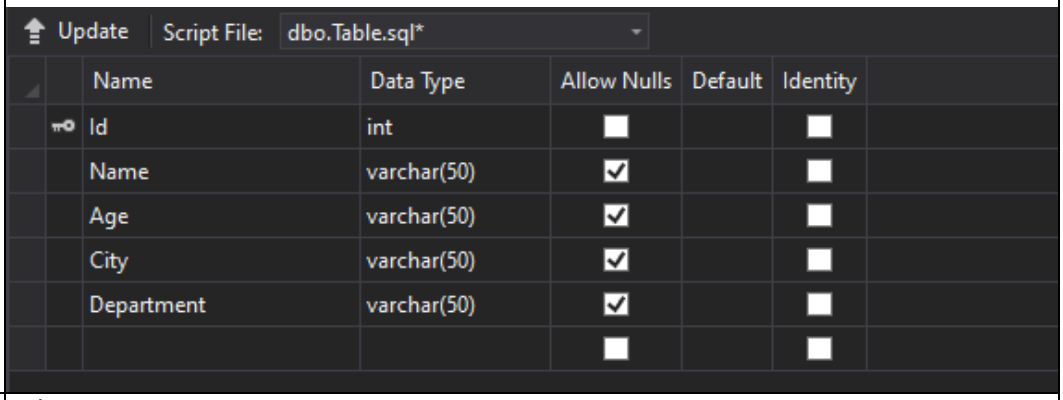


Task_8 Ans.

```
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 WindowsFormsControlLibrary1
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Insert_Click(object sender, EventArgs e)
        {
            this.Enabled = false;
```

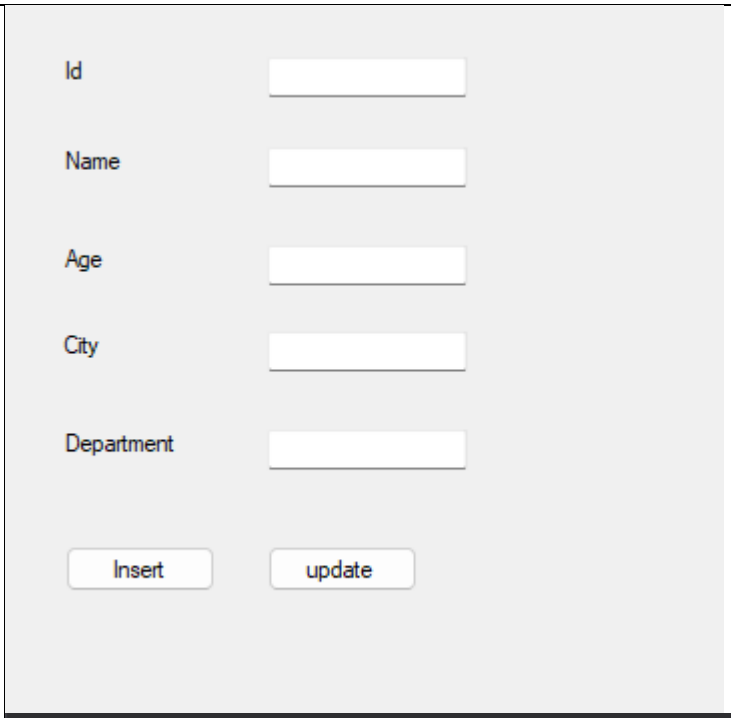
```
            string constr = @"Data
Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=E:\c#1\WindowsFormsControlLi
brary1\WindowsFormsControlLibrary1\login.mdf;Integrated Security=True";

            sqlConnection con = new sqlConnection(constr);

            con.open();

            string query = "insert into student
(Id,Name,Age,City,Department)+" +
                  "
values(@textBox1,@textBox2,@textBox3,@textBox4,@textBox5,)";


            sqlCommand cmd = new sqlCommand(query, con);

            cmd.parameter.AddWithValue("@textBox1", textBox1.Txt);
            cmd.parameter.AddWithValue("@textBox1", textBox2.Txt);
            cmd.parameter.AddWithValue("@textBox1", textBox3.Txt);
            cmd.parameter.AddWithValue("@textBox1", textBox4.Txt);
            cmd.parameter.AddWithValue("@textBox1", textBox5.Txt);

            cmd.ExecutenonQuery();
            con.close();
            reset();
            MessageBox.Show("Insert successfully");
            this.Enabled = true;

            public void reset()
            {
                textBox1 = "";
                textBox2 = "";
                textBox3 = "";
                textBox4 = "";
                textBox5 = "";
            }


        }


    }
}
```

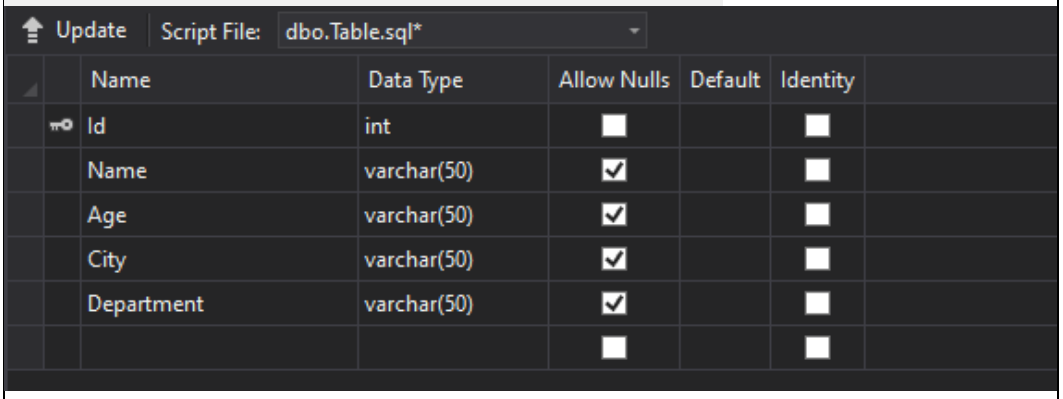




Task_9 Ans.

```
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 WindowsFormsControlLibrary1
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }




        private void Update_Click(object sender, EventArgs e)
        {
            this.Enabled = false;
            string constr = @"Data
Source=(LocalDB)\MSSQLLocalDB;AttachDbFilename=E:\c#1\WindowsFormsControlLi
brary1\WindowsFormsControlLibrary1\login.mdf;Integrated Security=True";

            sqlConnection con = new sqlConnection(constr);

            con.open();

            string query = "update student set
Name="@textBox2",Age="@textBox3",city="@textBox4",Department="@textBox5" +
                " where id="@textBox1"";


            sqlCommand cmd = new sqlCommand(query, con);

            cmd.parameter.AddWithValue("@textBox1", textBox1.Txt);
            cmd.parameter.AddWithValue("@textBox1", textBox2.Txt);
            cmd.parameter.AddWithValue("@textBox1", textBox3.Txt);
            cmd.parameter.AddWithValue("@textBox1", textBox4.Txt);
            cmd.parameter.AddWithValue("@textBox1", textBox5.Txt);

            cmd.ExecutenonQuery();
            con.close();
            reset();
            MessageBox.Show("update successfully");
            this.Enabled = true;
        }
    }
}
```



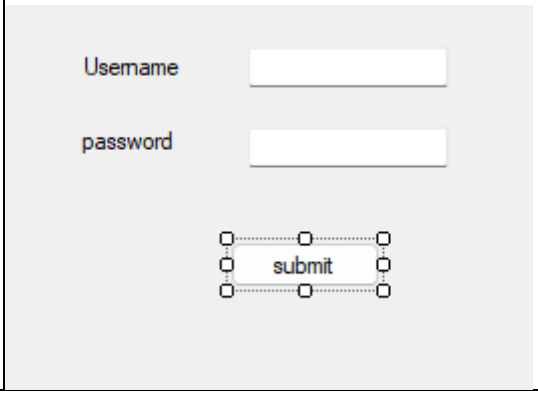


	Name	Data Type	Allow Nulls	Default	Identity
🔑	Id	int	☐		☐
	Name	varchar(50)	☑		☐
	Age	varchar(50)	☑		☐
	City	varchar(50)	☑		☐
	Department	varchar(50)	☑		☐
			☐		☐

Task_10 Ans.

```
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 WindowsFormsControlLibrary1
{
    public partial class login : Form
    {
        public login()
        {
            InitializeComponent();
        }

        private void Button1_Click(object sender, EventArgs e)
        {
            String username = textBox1;
            String password = textBox2;

            if (username = "admin" && password = "admin")
            {
                MessageBox.Show("Successfull login");
            }
            else
            {
                MessageBox.Show("Login failed");
```

```
                }
            }
        }
}
```



Note :- Console and Window Form program in some technical issue so program is not run
So I can able to upload a console program output screenshot.

I request you please notice this request.