VIDYAVAHINI GROUP OF INSTITUTIONS

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FIRST GRADE & P.G. COLLEGE

AFFILIATED TO TUMAKURU UNIVERSITY

DEPARTMENT OF BCA

SUBJECT: C# AND DOTNET FRAMEWORK LAB MANUAL

LAB PROGRAMS:

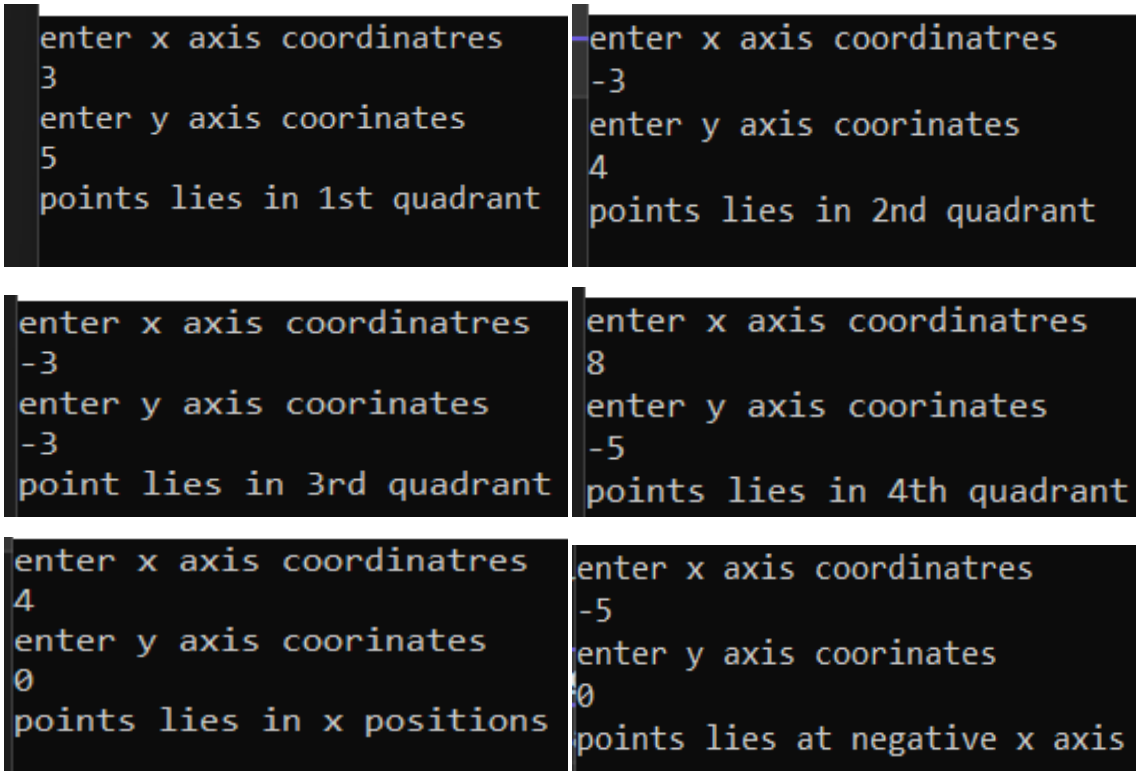
1. Calculate the quadrant for the coordinates using if..else…ladder
2. Check whether the alphabet is a vowel or not using switch..case…
3. To develop a C# application to print the students list using classes and objects
4. To develop a console application to implement Binary operator overloading concept in C#
5. DemonstrateMultithreadedProgramminginC#.NET
6. Using Try, Catch and Finally blocks write a program in C# to demonstrate error handling.
7. To develop a c# console application to implement the following concepts: Delegates.
8. Develop an Student Information System in C#.NET that demonstrates the various windows controls.
9. To design a notepad application to implement menus, custom dialog box and MDI concepts
10. Develop a Windows application with database for Student Information System [Insert, update and Delete]

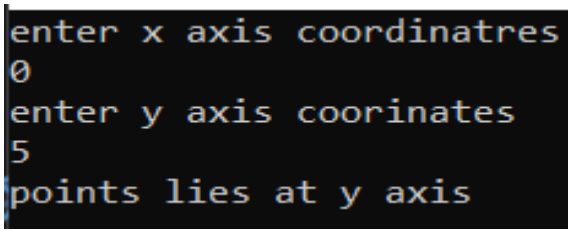
1. Calculate the quadrant for the coordinates using if..else…ladder

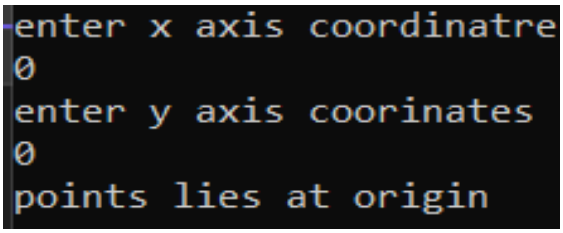
```
using System;
class lab1
{
   static void Main(string[] args)
   {
      int x, y;
      Console.WriteLine("enter x axis coordinatres");
      x=int.Parse(Console.ReadLine());
      Console.WriteLine("enter y axis coorinates");
      y=int.Parse(Console.ReadLine());
      {
         if (x > 0 && y > 0)
            Console.WriteLine("points lies in 1st quadrant");
         else if (x < 0 && y > 0)
            Console.WriteLine("points lies in 2nd quadrant");
         else if (x < 0 && y < 0)
            Console.WriteLine("point lies in 3rd quadrant");
         else if (x > 0 && y < 0)
            Console.WriteLine("ponts lies in 4th quadrant");
         else if (x > 0 && y == 0)
            Console.WriteLine("points lies in x positions");
         else if (x < 0 && y == 0)
            Console.WriteLine("points lies at negative x axis");
         else if (x == 0 && y > 0)
```

```
            Console.WriteLine("points lies at y axis");
        else if (x == 0 && y == 0)
            Console.WriteLine("points lies at origin");
        else
            Console.WriteLine("invalid input");
    }
    Console.ReadLine();

  }
}
```

OUTPUT:





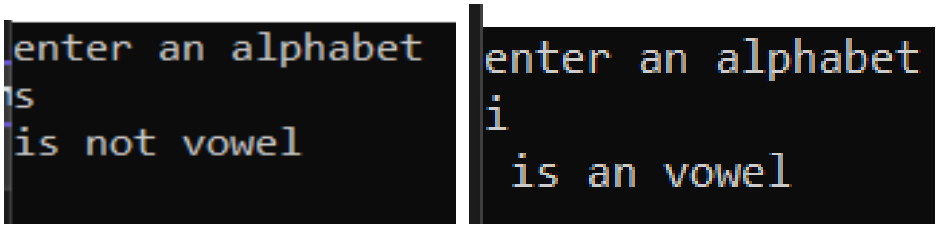


2. Check whether the alphabet is a vowel or not using switch..case…

```
using System;
class lab2
{
   static void Main(string[] args)
   {
      char ch;
      Console.WriteLine("enter an alphabet");
      ch=char.Parse(Console.ReadLine());
      switch(ch)
      {
         case 'a':
         case 'e':
         case 'i':
         case 'o':
         case 'u':
         case 'A':
         case 'E':
         case 'I':
         case 'O':
         case 'U':Console.WriteLine(" is an vowel" , ch);
```

```
            break;
            default:Console.WriteLine("is not vowel" , ch);
            break;

        }
        Console.ReadLine();
    }
}
```

OUTPUT:

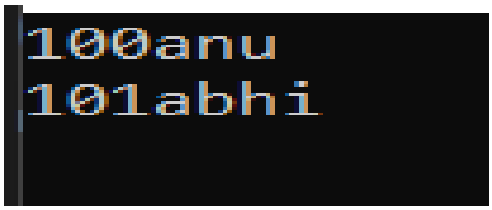


3. To develop a C# application to print the students list using classes and objects.

```
using System;
public class student
{
    public int id;
    public string name;
    public void insert(int i, string n)
    {
```

```
        id = i;
        name=n;
    }
    public void display()
    {
        Console.WriteLine(id + "" + name);
    }
}
public class demo
{
    public static void Main(string[] args)
    {
        student s= new student();
        s.insert(100, "anu");
        s.display();
        s.insert(101, "abhi");
        s.display();
        Console.ReadLine();

    }
}
```

OUTPUT:

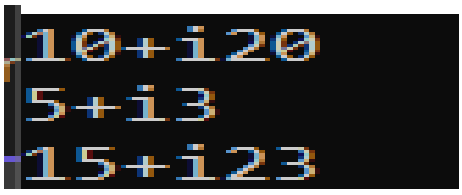


4. To develop a console application to implement Binary operator overloading concept in C#.

```
using System;
class complex
{
   int x, y;
   public complex()
   {

   }
   public complex(int a, int b)

   {
      x = a;
      y = b;
   }
   public void display()
   {
      Console.WriteLine("{0}+i{1}",x,y);

   }
   public static complex operator +(complex c1, complex c2)
   {
      complex temp = new complex();
      temp.x = c1.x + c2.x;
```

```
        temp.y = c1.y + c2.y;
        return temp;

    }
}
public class demo
{
    public static void Main(string[] args)
    {
        complex c1=new complex(10,20);
        c1.display();

        complex c2=new complex(5,3);
        c2.display();
        complex c3 = new complex();
        c3 = c1 + c2;
        c3.display();
        Console.ReadLine();
    }
}
```

OUTPUT:



5. DemonstrateMultithreadedProgramminginC#.NET

```
using System;
using System.Threading;
public class MT
{
   public static void Main(string[] args)
   {
      Thread t1 = new Thread(executed1);
      Thread t2 = new Thread(executed2);
      t1.Start();
      t2.Start();
      Console.ReadLine();
   }
   static void executed1()
   {
      Console.WriteLine("thread1 started");
      for(int i=1;i<=5;i++)
      {
         Console.WriteLine("thread1 is ececuting");
         Thread.Sleep(5000);
      }
   }
   static void executed2()
   {
      Console.WriteLine("thread2 started");
```

```
        for(int i=1;i<=5; i++)
        {
            Console.WriteLine("thread2 is executing");
            Thread.Sleep(5000);
        }
    }
}
```

OUTPUT:

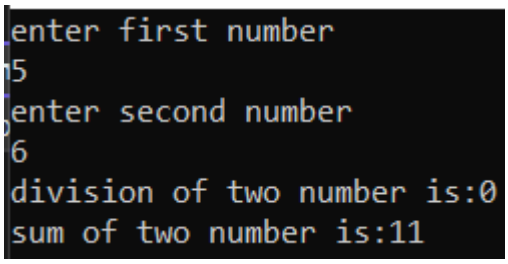
```
thread1 started
thread1 is ececuting
thread2 started
thread2 is executing
thread1 is ececuting
thread2 is executing
thread2 is executing
thread1 is ececuting
thread2 is executing
thread1 is ececuting
thread2 is executing
thread1 is ececuting
```

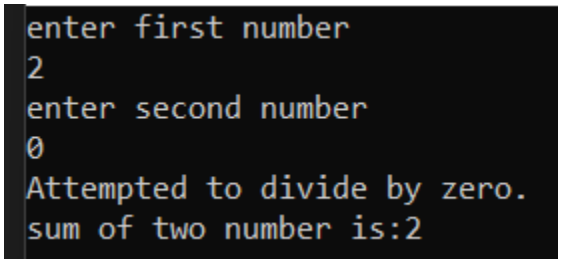
6. Using Try, Catch and Finally blocks write a program in C# to demonstrate error handling.

```
using System;
public class EH
{
    public static void Main(string[] args)
    {
```

```
        int n1, n2, result;
        Console.WriteLine("enter first number");
        n1=int.Parse(Console.ReadLine());
        Console.WriteLine("enter second number");
        n2=int.Parse(Console.ReadLine());
        try
        {
           result = n1 / n2;
           Console.WriteLine("division of two number is:" + result);

        }
        catch(Exception e)
        {
           Console.WriteLine(e.Message);
        }
        finally
        {
           Console.WriteLine("sum of two number is:"+(n1+n2));
        }
        Console.ReadLine();

    }
}
```

OUTPUT:



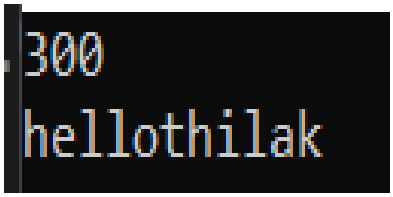


7. To develop a c# console application to implement the following concepts:Delegates

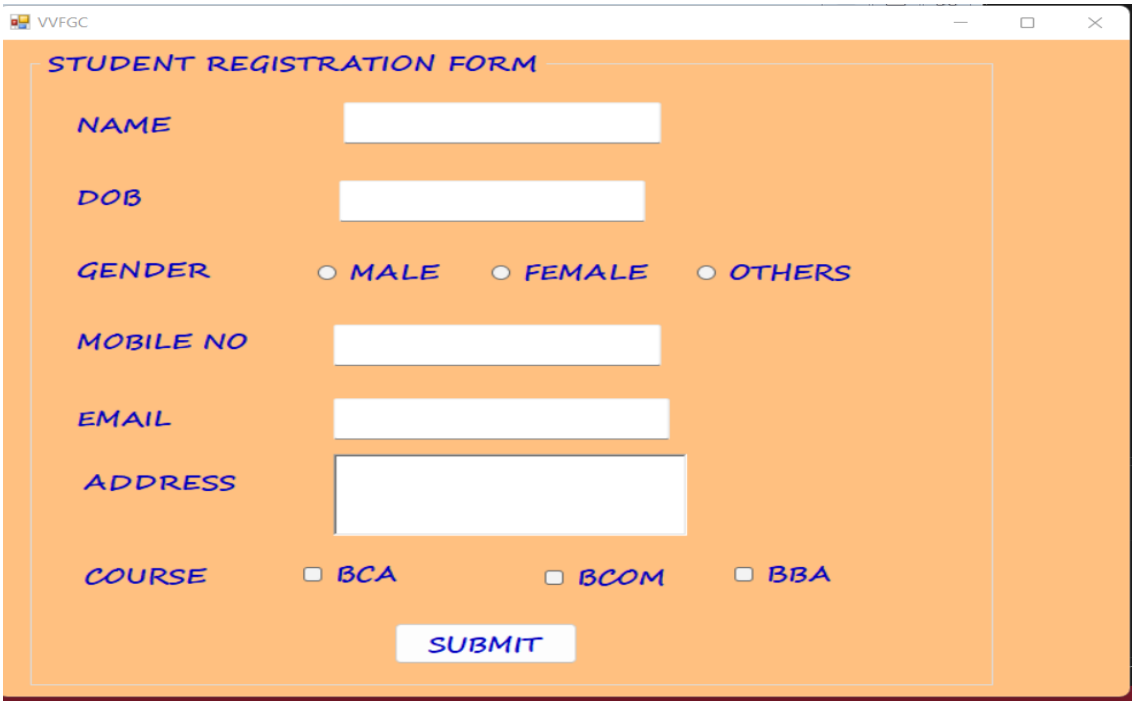
```
using System;
namespace delegatedemo
{
    public delegate void addDelegate(int x, int y);
    public delegate string sayDelegate(string name);
    class program
    {
        public void addnum(int a,int b)
        {
            Console.WriteLine(a + b);

        }
        public static string sayhello(string name)
        {
            return "hello" + name;
        }
```

```
        static void Main(string[] args)
        {
            program p=new program();
            addDelegate ad = new addDelegate(p.addnum);
            ad(100, 200);
            sayDelegate sd = new sayDelegate(program.sayhello);
            string str = sd("thilak");
            Console.WriteLine(str);
            Console.ReadLine();
        }
    }
}
```

OUTPUT:



8. Develop an Student Information System in C#.NET that demonstrates the various windows controls.



Step 1: Open new Project go to Visual Studio => New=> Project=> select C#.net => Windows Form Application => form window will be opened.

Step 2: We need Label, Textbox, Rich Textbox, Button, Check box, Radio button and Group box Controls to design the form.

Step 3: After Drag and Drop all these form looks like this.

Step 4: We need 7 labels controls and renamed as Name, DOB, Gender, Mobile Number, E-Mail, Address and Course.

Step 5: We need 4 Text boxes and 1 Rich Text box for Address.

Step 6: We need 3 Radio buttons like Named as Male, Female and Others.

Step 7: We need 3 Check boxes named as BC, BCom and BBA.

Step 8: We need 1 button Control named as Submit.

Step 9: Now We Enter all values of labels for that needs to be write coding part when

Double click on the Submit button control.

```
Private void button1_Click(object sender, EventArgs e)

{
 String name, dob, gender, email, address, courses=" " ;

long mobile;

name = textBox1.Text;

dob = textBox2.Text;

email = textBox4.Text;

address = richTextBox1.Text;

mobile = long.Parse(textBox3.Text);
```

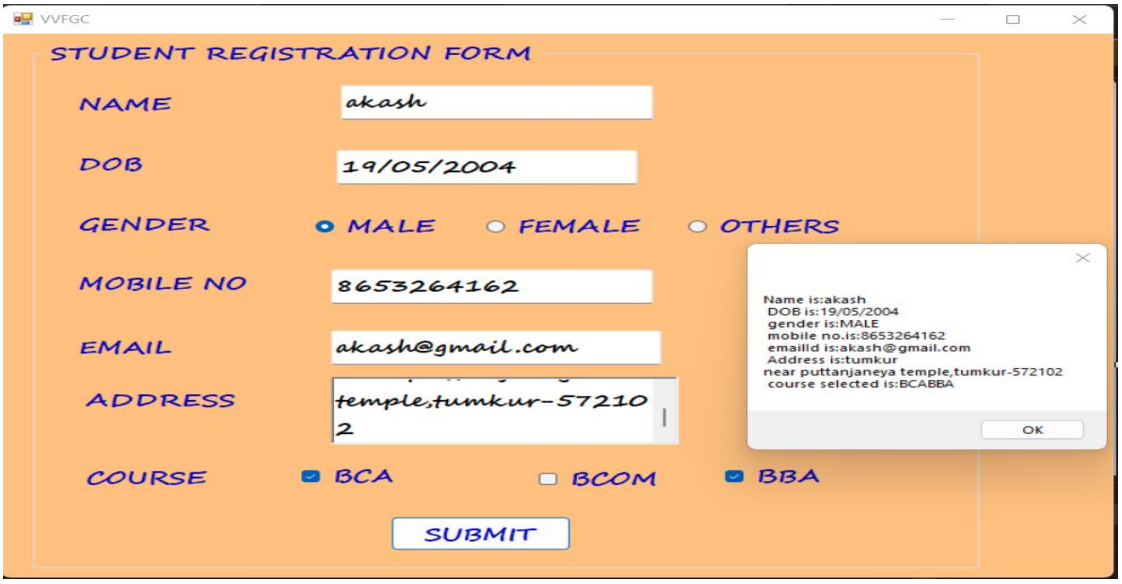
```
if(radioButton1.Checked==true)

gender radioButtonl.Text;

else if (radioButton2.Checked == true)
gender radioButton2.Text;

else

gender = radioButton3.Text;

if (checkBox1.Checked == true)

courses += checkBox1.Text;

if (checkBox2.Checked == true)

courses += checkBox2.Text;

if (checkBox3.Checked == true)

courses += checkBox3.Text;

MessageBox.Show("Name is:" + name + "\n DOB is:" + dob + "\n Gender is:"
+ gender + "\n Mobile No. is:" + mobile + "\n EmailId is:" + email + "\n
Address is:" + address + "\n Course selected is:" + courses);
```

}

Step 10: Run the Project by using Start Button.

Step 11: We can get output like this.

OUTPUT:



9. To design a notepad application to implement menus, custom dialog box and MDI concepts.

Step 1: First we need to create 2 or more forms in the same project.

Step 2: For that we need to go to the current project => right click on that => then we need to select ADD option => in that we select Add items => select windows forms=> click ok button.

Step 3: In this way we can create number of forms in the same project.

Step 4: Now we have many forms in that one Project and any one form must be parent form.

Step 5: For example we have 3 forms like Form1, Form2 and Form3.

Step 6: I would like to take Forml as parent form for this

First select Forml => then go to the properties windows => in that select "is MdiContainer", By default each form property is false but now it will becomes to "true".

Step 7: Then it (Forml) is a parent form in my project.

Step 8: Again we create a menu in Forml.

Step 9: For that we need to take "menu strip" tool from toolbox and drop it on Forml.

Step 10: Then we created a menu in Forml.

Step 11: Now select Form2 in menu and double click on Then it will open code

windowForm2 code will be:

```
Form2 F2=New Form2();
```

F2. MdiParent = this;

F2.Show()

Step 12: Now select Form3 in menu and double click on Then it will open code windowForm2 code will be:

Form3 F3=New Form3();

F3. MdiParent = this;

F3.Show()

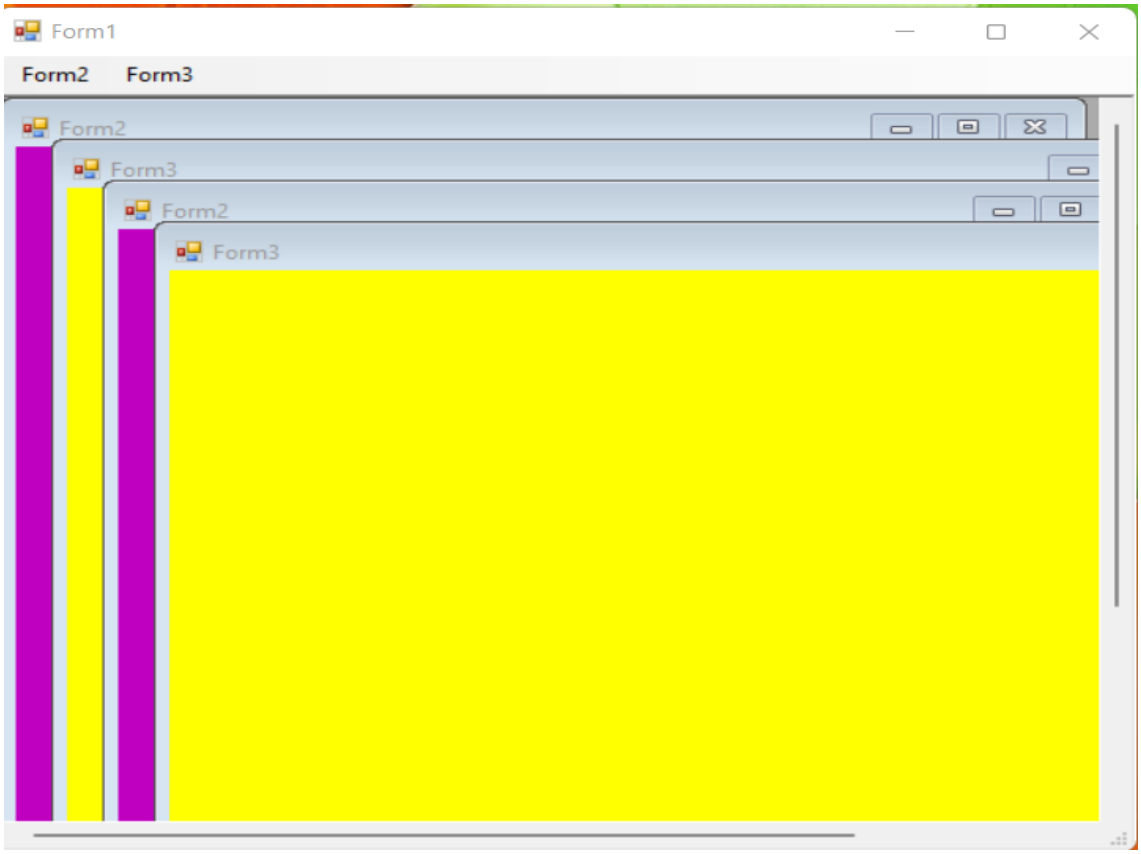
Step 13: Then code is ready.

Step 14: Run the code by using "start" button in the menu bar.

Step 15: It will open forml window in that one menu will be framed in that we display Form2 and Form3 in Form1.

Step 16: This is the way we can create multiple instances of single form.

OUTPUT:



10. Develop a Windows application with database for Student Information System [Insert, update and Delete]

Step 1: First User Should Create a data base for that

Go to **"Solution Explorer"** widow => right click on **the project name** => click on **"Add"** option =>Select **"add new item"** => select **"service Based database"** => click on **"Add".**

Now data base will be added to our project.

Step 2: If we wants to rename database => right click on the project => using rename option we canrename the database.

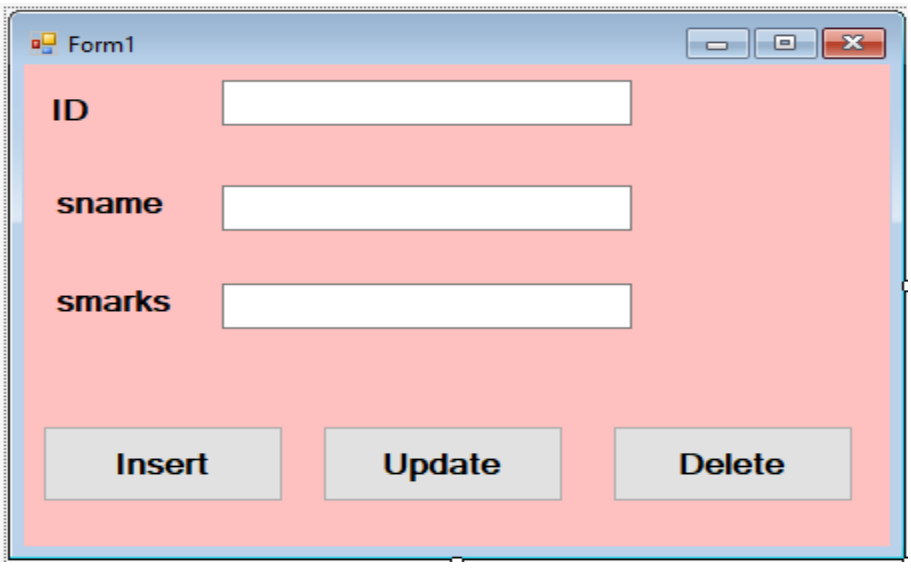
Step 3: now we need to create a table in the database. For this => double click on the data base => will open **"server explorer"** window => select **"table"** option => right click on this => **select "add new table"** => new table will be added to the database.

Step 4: If we want to change the table name then we can change as **"dbo.Student"** and will add somecolumns into that table like **"ID, SName and Smarks** etc."

Step 5: After entering these details in to table then we need to Update the table by using **"update"** => then click on **"update database".**

Step 6: We need to design the Front end application like C#.net or VB.net etc.

Step 7: we need to create one form with 3 labels, 3 textboxes and 3 button controls for entering data.



Step 8: We need to create / Establish Connection between Front end Form and Back end Database for that write the coding part.

Step 9: Double click on the form and write the coding

```
Imports  System.Data.SqlClient
Public Class Form1
Dim cn As SqlConnection
Dim cmd As SqlCommand
Private Sub Form1_Load(sender As Object, e As EventArgs)
HandleMyBase.Load cn = New SqlConnection("Connection String from
properties ")
cn.Open()
MsgBox("connected successfully")
cn.Close()
End Sub
```

Step 10: Run the Project then it display **"Connected successfully".**

Step 11: Now we insert tuples or rows in to the table.

Step 12: For inserting data in to the Table through VB.NET Coding

Double click on the **Insert button** and write the coding

```
Private Sub Button1_Click(sender As Object, e As EventArgs) Handles
Button1.Click
cn.Open()
cmd = cn.CreateCommand()
cmd.CommandType = CommandType.Text
cmd.CommandText = "insert into Student values(" & TextBox1.Text & " , ' " &
TextBox2.Text &" ' , " & TextBox3.Text & ")"
cmd.ExecuteNonQuery()
```

```
MsgBox("record inserted successfully")
cn.Close()
End Sub
```

Step 13: Run the Project then it display “Connected Successfully” and insert some rows in table.

Step 14: Run the query as **select * from Student;**

Step 14: Now we Update tuple or rows in table.

Step 15: For Updating Existing data in the Table through VB.NET Coding

Double click on the **Update button** and write the coding

```
Private Sub Button2_Click(sender As Object, e As EventArgs) Handles
Button2.Click
cn.Open()
cmd = cn.CreateCommand()
cmd.CommandType = CommandType.Text
cmd.CommandText = "update Student set sname=' " & TextBox2.Text & " ' ,
smarks=" &TextBox3.Text & " where id=" & TextBox1.Text & ""
cmd.ExecuteNonQuery()
MsgBox("record updated successfully")
cn.Close()
End Sub
```

Step 16: Run the Project then it display “Connected Successfully” and update rows.

Step 17: Now we delete data from table

Step 18: For deleting data from the Table through VB.NET Coding

Double click on the **Delete button** and write the coding

```
Private Sub Button3_Click(sender As Object, e As EventArgs) Handles
Button3.Click cn.Open()
cmd =cn.CreateCommand()
cmd.CommandType =CommandType.Text
cmd.CommandText = "delete from Student where id= "  & TextBox1.Text & " "
cmd.ExecuteNonQuery()
MsgBox("record deleted successfully")cn.Close()
End Sub
```