//1) write a program to demonstrate command line arguments processing for the following
//a) to find the square root of given number
//b)to find sum and avg of 3 numbers

(Add the number to the command line argument properties>Debug>Command line arguments any number 3)

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace prg1
{
   class Program
   {

       static void Main(string[] args)
      {
         double n1 = double.Parse(args[0]);
         double n2 = double.Parse(args[1]);
         double n3 = double.Parse(args[2]);
         Console.WriteLine("The numbers are {0},{1},{2}", n1, n2, n3);
         Console.WriteLine("The square root of {0} is {1:0.00}", n1, Math.Sqrt(n1));
         double sum = n1 + n2 + n3;
         double avg = sum / 3.0;
         Console.WriteLine("The sum of {0},{1},{2} is {3:0.00}",n1,n2,n3,sum);
         Console.WriteLine("The Average of {0},{1},{2} is {3:0.00}", n1, n2, n3, avg);
      }
   }
}
```

Output:-

```
The numbers are 20,30,40
The square root of 20 is 4.47
The sum of 20,30,40 is 90.00
The Average of 20,30,40 is 30.00
Press any key to continue . . .
```

//2) Write a program in c sharp to demonstrate the following
//a) Boxing and unBoxing
//b)Invalid unboxing

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace program2
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter a Number:");
         int x = int.Parse(Console.ReadLine());
         object o = x;
         Console.WriteLine("Integer value is boxed!:" +o);
         int y = (int)o;
         Console.WriteLine("Integer value is unboxed:" +y);
         try
         {
            float z = (float)o;
         }
         catch (InvalidCastException e)
         {
            Console.WriteLine(e.Message);
         }
      }

   }
}
```

Output:-

```
Enter a Number:25
Integer value is boxed!:25
Integer value is unboxed:25
Specified cast is not valid.
Press any key to continue . . .
```

3-//write a program in c sharp to add complex numbers using operator overloading

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace prg3
{
   class complex
   {


      float real, img;
      public complex(float real, float img)
      {
         this.real = real;
         this.img = img;
      }
      public complex()
      {
         real = 0.0f;
         img = 0.0f;
      }

      public static complex operator +(complex c1, complex c2)
      {
         complex c3 = new complex();
         c3.real = c1.real + c2.real;
         c3.img = c1.img + c2.img;
         return c3;
      }
      public void display()
      {
         if (img > 0)
         {
            Console.WriteLine("{0}+{1}i", real, img);
         }
         else
         {
            Console.WriteLine("{0}{1}i", real, img);
         }
      }
```

```
    }

    class program
    {
        static void Main(string[] args)
        {
            complex c1 = new complex(2, -3);
            complex c2 = new complex(5, 7);
            complex c3 = new complex();
            c3 = c1 + c2;
            Console.WriteLine("Complex number 1: ");
            c1.display();
            Console.WriteLine("Complex number 2: ");
            c2.display();
            Console.WriteLine("Sum is: ");
            c3.display();
        }
    }
}
```

Output:-

```
Complex number 1:
2-3i
Complex number 2:
5+7i
Sum is:
7+4i
```

```
//By user input

using System;

namespace prg3
{
   class Complex
   {
      float real, img;

      public Complex(float real, float img)
      {
         this.real = real;
         this.img = img;
      }

      public Complex()
      {
         real = 0.0f;
         img = 0.0f;
      }

      public static Complex operator +(Complex c1, Complex c2)
      {
         Complex c3 = new Complex();
         c3.real = c1.real + c2.real;
         c3.img = c1.img + c2.img;
         return c3;
      }

      public void Display()
      {
         if (img >= 0)
         {
            Console.WriteLine("{0}+{1}i", real, img);
         }
         else
         {
            Console.WriteLine("{0}{1}i", real, img);
         }
      }
   }

   class Program
```

```
  {
    static void Main(string[] args)
    {
      Console.WriteLine("Enter the real part of the first complex number:");
      float real1 = float.Parse(Console.ReadLine());
      Console.WriteLine("Enter the imaginary part of the first complex number:");
      float img1 = float.Parse(Console.ReadLine());

      Console.WriteLine("Enter the real part of the second complex number:");
      float real2 = float.Parse(Console.ReadLine());
      Console.WriteLine("Enter the imaginary part of the second complex number:");
      float img2 = float.Parse(Console.ReadLine());

      Complex c1 = new Complex(real1, img1);
      Complex c2 = new Complex(real2, img2);
      Complex c3 = new Complex();

      c3 = c1 + c2;

      Console.WriteLine("\nComplex number 1: ");
      c1.Display();
      Console.WriteLine("Complex number 2: ");
      c2.Display();
      Console.WriteLine("Sum is: ");
      c3.Display();
    }
  }
}
```

Output:-

```
Enter the real part of the first complex number:
-3
Enter the imaginary part of the first complex number:
-2
Enter the real part of the second complex number:
-1
Enter the imaginary part of the second complex number:
1

Complex number 1:
-3-2i
Complex number 2:
-1+1i
Sum is:
-4-1i
Press any key to continue . . .
```

4-//Write a program in c# sum of each row of given jagged array of three inner arrays

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
namespace prg4
{
   class Program
   {
      static void Main(string[] args)
      {
         int[][] a = new int[3][];
         a[0] = new int[2];
         a[1] = new int[2];
         a[2] = new int[3];
         Console.WriteLine("Enter the array elements:");
         Console.WriteLine();
         for (int i = 0; i < 3; i++)
            for (int j = 0; j < a[i].Length; j++)
               a[i][j] = int.Parse(Console.ReadLine());
         Console.WriteLine();
         Console.WriteLine("The jagged array is:");
         Console.WriteLine();
         for (int i = 0; i < 3; i++)
         {
            for (int j = 0; j < a[i].Length; j++)
            {
               Console.WriteLine(a[i][j] + "");
            }
            Console.WriteLine();
         }
         Console.WriteLine();
         for (int i = 0; i < 3; i++)
         {
            int sum = 0;
            for (int j = 0; j < a[i].Length; j++)
            {
               sum = sum + a[i][j];
            }
            Console.WriteLine("The sum of {0} row elements is {1}", i, sum);
         }
      }
   }
```

}

Output:-

```
Enter the array elements:

2
3
4
5
6
7
87

The jagged array is:

2
3

4
5

6
7
87


The sum of 0 row elements is 5
The sum of 1 row elements is 9
The sum of 2 row elements is 100
Press any key to continue . . .
```

5-//Write a program in c# to demonstrate array out of bound Exception using try catch finally block

```
using System;
class Program
{
   static void Main(string[] args)
   {
      if (args.Length < 2)
      {
         Console.WriteLine("Please provide the number of rows and columns as
arguments.");
         return;
      }
      int rows = int.Parse(args[0]);
      int columns = int.Parse(args[1]);

      if (args.Length < 2 + rows * columns)
      {
         Console.WriteLine("Please provide all the elements for the 2D array.");
         return;
      }
      int[,] numbers = new int[rows, columns];
      int index = 2;

      for (int i = 0; i < rows; i++)
      {
         for (int j = 0; j < columns; j++)
         {
            numbers[i, j] = int.Parse(args[index]);
            index++;
         }
      }
      Console.WriteLine("\nCommand-Line Arguments:");
      for (int i = 0; i < args.Length; i++)
      {
         Console.Write(args[i] + " ");
      }
      Console.WriteLine();

      Console.WriteLine("\nThe 2D Array:");
      for (int i = 0; i < rows; i++)
      {
```

```
        for (int j = 0; j < columns; j++)
        {
            Console.Write(numbers[i, j] + " ");
        }
        Console.WriteLine();
    }
    Console.WriteLine("\nEnter the row index to access (0 to " + (rows - 1) + "):");
    int rowIndex = int.Parse(Console.ReadLine());
    Console.WriteLine("Enter the column index to access (0 to " + (columns - 1) + "):");
    int colIndex = int.Parse(Console.ReadLine());
    try
    {
        Console.WriteLine("Element at [" + rowIndex + ", " + colIndex + "]: " +
numbers[rowIndex, colIndex]);
    }
    catch (IndexOutOfRangeException ex)
    {
        Console.WriteLine("Exception caught: " + ex.Message);
    }
    finally
    {
        Console.WriteLine("Finally block executed.");
    }
  }
}
```

Output:-

```
Command-Line Arguments:
2 3 1 5 6 7 8 5

The 2D Array:
1 5 6
7 8 5

Enter the row index to access (0 to 1):
1
Enter the column index to access (0 to 2):
2
Element at [1, 2]: 5
Finally block executed.
Press any key to continue . . .
```

```
Command-Line Arguments:
2 3 1 5 6 7 8 5

The 2D Array:
1 5 6
7 8 5

Enter the row index to access (0 to 1):
2
Enter the column index to access (0 to 2):
3
Exception caught: Index was outside the bounds of the array.
Finally block executed.
Press any key to continue . . .
```

9-//Write a program to Set & Get the Name & Age of a person using Properties of C# to illustrate

```
using System;

public class Person
{
   private string name;
   private int age;

   public string Name
   {
      get { return name; }
      set { name = value; }
   }

   public int Age
   {
      get { return age; }
      set { age = value; }
   }

   public static void Display(Person[] persons)
   {
      bool recordFound = false;

      Console.WriteLine("{0,-20} {1,-5}", "Name", "Age");  // Table header
      Console.WriteLine(new string('-', 25));

      foreach (var person in persons)
      {
         if (person.Age >= 16 && person.Age <= 60)
         {
            Console.WriteLine("{0,-20} {1,-5}", person.Name, person.Age);
            recordFound = true;
         }
      }


      if (!recordFound)
      {
         Console.WriteLine("No records found with age between 16 and 60.");
      }
   }
```

```
    public static Person[] InputDetails(int count)
    {
        Person[] persons = new Person[count];

        for (int i = 0; i < count; i++)
        {
            persons[i] = new Person();

            Console.WriteLine(string.Format("Enter details for person {0}:", i + 1));

            Console.Write("Enter Name: ");
            persons[i].Name = Console.ReadLine();

            Console.Write("Enter Age: ");
            persons[i].Age = int.Parse(Console.ReadLine());
        }

        return persons;
    }
}

class Program
{
    static void Main(string[] args)
    {
        Console.Write("How many persons do you want to enter? ");
        int count = int.Parse(Console.ReadLine());

        Person[] persons = Person.InputDetails(count);

        Console.WriteLine("People with Age between 16 and 60:");
        Person.Display(persons);
    }
}
```

Output:-

```
How many persons do you want to enter? 5
Enter details for person 1:
Enter Name: canvil
Enter Age: 2
Enter details for person 2:
Enter Name: joy
Enter Age: 34
Enter details for person 3:
Enter Name: lobo
Enter Age: 78
Enter details for person 4:
Enter Name: anish
Enter Age: 32
Enter details for person 5:
Enter Name: isthi
Enter Age: 23
People with Age between 16 and 60:
Name                Age
-------------------------
joy                 34
anish               32
isthi               23
```

```
How many persons do you want to enter? 2
Enter details for person 1:
Enter Name: canvil
Enter Age: 2
Enter details for person 2:
Enter Name: joy
Enter Age: 78
People with Age between 16 and 60:
Name                  Age
-------------------------
No records found with age between 16 and 60.
```

```
//6.Write a Program to Demonstrate Use of Virtual and override key words in C# with a simple program.
using System;

class Program
{
   static void Main(string[] args)
   {
      Console.WriteLine("Enter Employee Details");

      Console.Write("Enter Employee No: ");
      string empno = Console.ReadLine();

      Console.Write("Enter Employee Name: ");
      string empname = Console.ReadLine();

      Console.Write("Enter Employee Address: ");
      string empaddress = Console.ReadLine();

      Salary salaryEmployee = new Salary(empno, empname, empaddress);

      Console.Write("Enter Basic Salary: ");
      double basicSalary = Convert.ToDouble(Console.ReadLine());

      salaryEmployee.Salary_Calculate(basicSalary);  // Calculate DA, HRA, and Gross Salary

      Console.WriteLine("\nEmployee and Salary Details:");
      salaryEmployee.Display();
   }
}

//  class:Employee.cs

using System;

public class Employee
{
   protected string empno, empname, empaddress;

   public Employee() { }

   public Employee(string empno, string empname, string empaddress)
   {
```

```
        this.empno = empno;
        this.empname = empname;
        this.empaddress = empaddress;
    }

    public virtual void Display()
    {
        Console.WriteLine("Employee No: " + empno);
        Console.WriteLine("Employee Name: " + empname);
        Console.WriteLine("Employee Address: " + empaddress);
    }
}


// class:Salary.cs

using System;

public class Salary : Employee
{
    private double basicSalary;
    private double da;
    private double hra;
    private double grossSalary;

    public Salary(string empno, string empname, string empaddress)
        : base(empno, empname, empaddress)
    {
    }

    public void Salary_Calculate(double basicSalary)
    {
        this.basicSalary = basicSalary;


        if (basicSalary < 20000)
        {
            da = 0.50 * basicSalary;
            hra = 0.25 * basicSalary;
        }
        else if (basicSalary >= 20000 && basicSalary < 30000)
        {
            da = 0.40 * basicSalary;
            hra = 0.20 * basicSalary;
```

```
        }
        else
        {
            da = 0.50 * basicSalary;
            hra = 0.20 * basicSalary;
        }

        grossSalary = basicSalary + da + hra;
    }

    public override void Display()
    {
        base.Display();
        Console.WriteLine("Basic Salary: " + basicSalary);
        Console.WriteLine("Dearness Allowance (DA): " + da);
        Console.WriteLine("House Rent Allowance (HRA): " + hra);
        Console.WriteLine("Gross Salary: " + grossSalary);
    }
}
```

Output:-

```
Enter Employee Details
Enter Employee No: 16032
Enter Employee Name: canvil
Enter Employee Address: mangalore
Enter Basic Salary: 25000

Employee and Salary Details:
Employee No: 16032
Employee Name: canvil
Employee Address: mangalore
Basic Salary: 25000
Dearness Allowance (DA): 10000
House Rent Allowance (HRA): 5000
Gross Salary: 40000
```

7. Write a Program in C# to create and implement a Delegate for any two arithmetic operations

```
using System;

namespace DelegateExample
{
   public delegate void CalculatorDelegate(float a, float b);
   class Calculator
   {
      public void Add(float a, float b)
      {
         Console.WriteLine("Addition: " + (a + b));
      }


      public void Sub(float a, float b)
      {
         Console.WriteLine("Subtraction: " + (a - b));
      }


      public void Mul(float a, float b)
      {
         Console.WriteLine("Multiplication: " + (a * b));
      }


      public void Quo(float a, float b)
      {
         if (b != 0)
            Console.WriteLine("Division: " + (a / b));
         else
            Console.WriteLine("Division by zero is not allowed.");
      }

      public void Mod(float a, float b)
      {
         if (b != 0)
            Console.WriteLine("Modulo: " + (a % b));
         else
            Console.WriteLine("Modulo by zero is not allowed.");
```

```
    }
  }

  class Program
  {
    static void Main(string[] args)
    {
      Calculator c = new Calculator();
      CalculatorDelegate cd = new CalculatorDelegate(c.Add);
      cd(10, 20);
      Console.Write("Enter first number: ");
      float a = float.Parse(Console.ReadLine());
      Console.Write("Enter second number: ");
      float b = float.Parse(Console.ReadLine());
      cd += c.Sub;
      cd += c.Mul;
      cd += c.Quo;
      cd += c.Mod;
      cd(a, b);
    }
  }
}
```

OUTPUT:-

```
Addition: 30
Enter first number: 10
Enter second number: 20
Addition: 30
Subtraction: -10
Multiplication: 200
Division: 0.5
Modulo: 10
```

8. Write a Program in C# to demonstrate abstract class and abstract methods in C#.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace Lab8
{
   abstract class Calculate
   {
      public abstract float add(float a, float b);
      public abstract float sub(float a, float b);
      public abstract float mul(float a, float b);
      public abstract float div(float a, float b);
      public abstract float mod(float a, float b);
   }
   class Calculator : Calculate
   {
      public override float add(float a, float b)
      {
         return a + b;
      }
      public override float sub(float a, float b)
      {
         return a - b;
      }
      public override float mul(float a, float b)
      {
         return a * b;
      }
      public override float div(float a, float b)
      {
         return a / b;
      }
      public override float mod(float a, float b)
      {
         return a % b;
      }
   }

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

```
        Calculator c = new Calculator();
        Console.Write("Enter the first number:");
        float a = float.Parse(Console.ReadLine());
        Console.Write("Enter the Second number:");
        float b = float.Parse(Console.ReadLine());
        Console.WriteLine("The sum of two numbers {0} and {1} is :{2}", a, b, c.add(a, b));
        Console.WriteLine("The difference of two numbers {0} and {1} is :{2}", a, b,
c.sub(a, b));
        Console.WriteLine("The product of two numbers {0} and {1} is :{2}", a, b, c.mul(a,
b));
        Console.WriteLine("The quotient of two numbers {0} and {1} is :{2}", a, b, c.div(a,
b));
        Console.WriteLine("The remainder of two numbers {0} and {1} is :{2}", a, b,
c.mod(a, b));
    }
  }
}
```

OUTPUT:-

```
Enter the first number:10
Enter the Second number:20
The sum of two numbers 10 and 20 is :30
The difference of two numbers 10 and 20 is :-10
The product of two numbers 10 and 20 is :200
The quotient of two numbers 10 and 20 is :0.5
The remainder of two numbers 10 and 20 is :10
```

10. Write a Program in C# Demonstrate arrays of interface types (for runtime polymorphism).

```
using System;
namespace Lab10
{
   interface shape
   {
      double cal_area();
   }
   class circle:shape
   {
      public double cal_area()
      {
         Console.WriteLine("Enter the radius of a circle");
         double radius = double.Parse(Console.ReadLine());
         double area= 3.14 * radius * radius;
         return area;
      }
   }
   class square:shape
   {
      public double cal_area()
      {
         Console.WriteLine("Enter the side of a square");
         double side = double.Parse(Console.ReadLine());
         double area = side * side;
         return area;

      }
   }
   class rectangle:shape
   {
      public double cal_area()
      {
         Console.WriteLine("Enter the length and breadth of a rectangle");
         double length = double.Parse(Console.ReadLine());
         double breadth = double.Parse(Console.ReadLine());
         double area = length * breadth;
         return area;

      }
   }
   class triangle:shape
   {
```

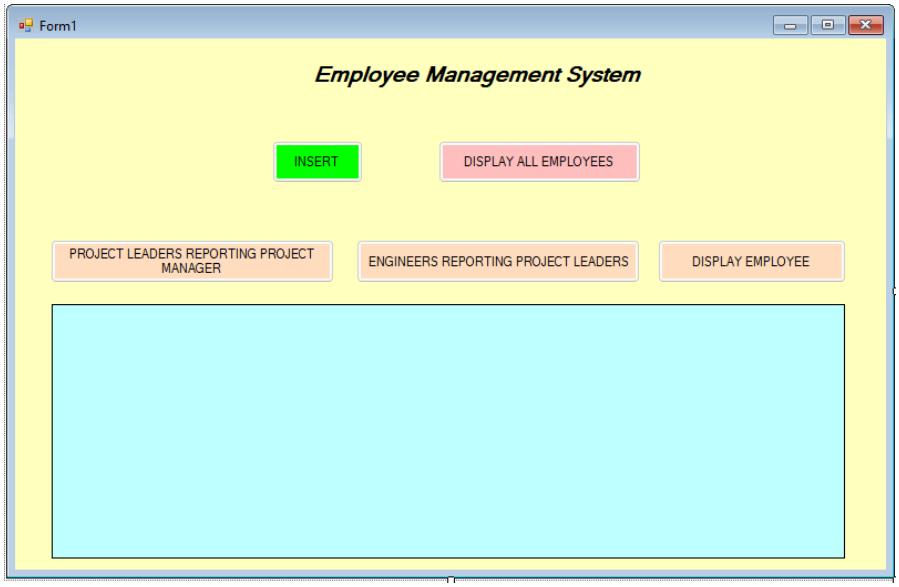
```
    public double cal_area()
    {
        Console.WriteLine("Enter three sides of a triangle");
        double a = double.Parse(Console.ReadLine());
        double b = double.Parse(Console.ReadLine());
        double c = double.Parse(Console.ReadLine());
        double s = (a + b + c) / 2.0 ;
        double s1 = (s * (s - a) * (s - b) * (s - c));
        double area = Math.Sqrt(s1);
        return area;

    }
  }

  class Program
  {
    static void Main(string[] args)
    {
        shape[] s = new shape[4];
        s[0] = new circle();
        s[1] = new triangle();
        s[2] = new square();
        s[3] = new rectangle();
        for (int i = 0; i < s.Length; i++)
        {
            Console.WriteLine("The area is {0:0.00}", s[i].cal_area());
        }
    }
  }
}
```

OUTPUT:-

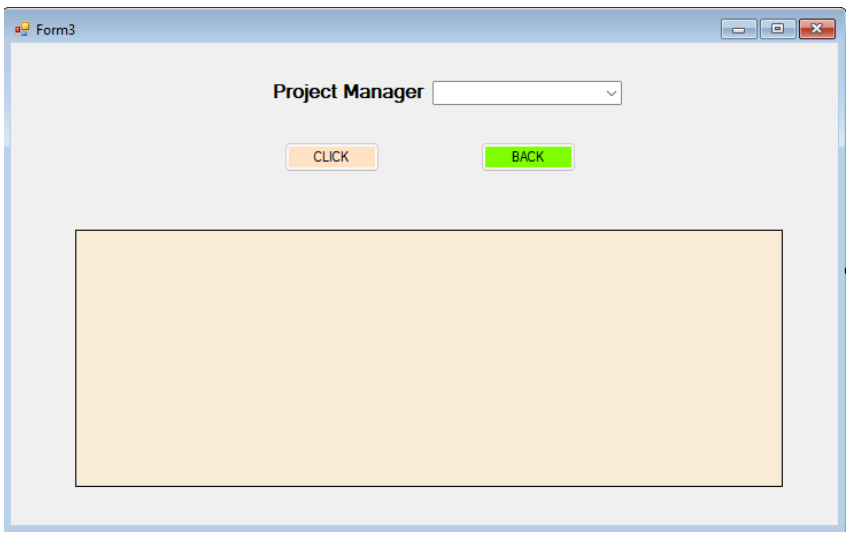
```
Enter the radius of a circle
5
The area is 78.50
Enter three sides of a triangle
3
4
5
The area is 6.00
Enter the side of a square
4
The area is 16.00
Enter the length and breadth of a rectangle
5
6
The area is 30.00
```

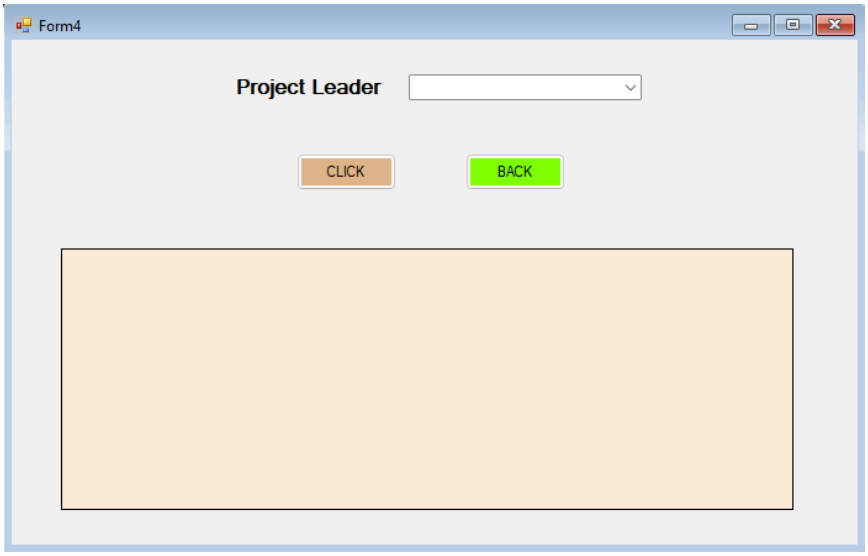
PART-B

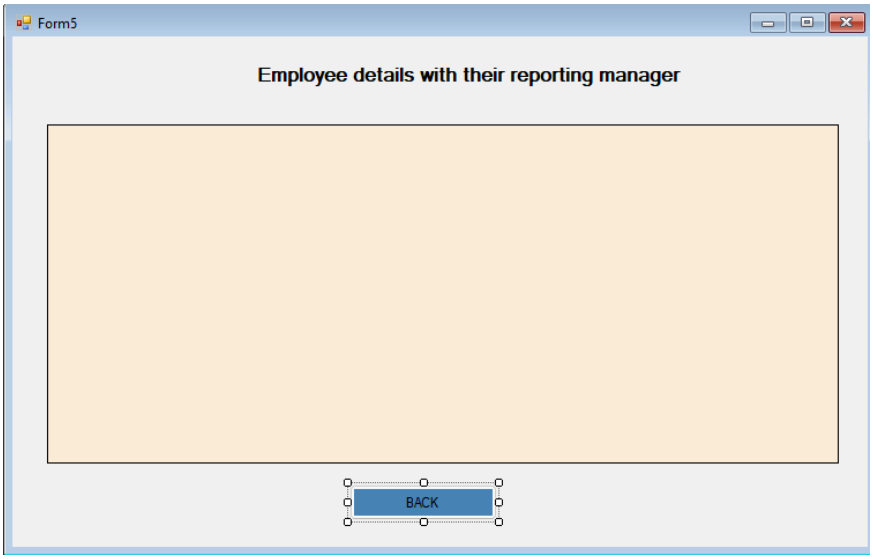
Consider the Database db_EMS (Employee Management System)
consisting of the following tables :
tbl_Designations (IdDesignation: int, Designation: string)
tbl_EmployeeDetails(IdEmployee: int, EmployeeName: string, ContactNumber: string, IdDesignation: int, IdReportingTo: int)
Develop a suitable window application using C#.NET having following options.
1. Enter new Employee details with designation & Reporting Manager.
2. Display all the Project Leaders (In a Grid) reporting to selected Project Managers (In a Combo box).
3. Display all the Engineers (In a Grid) reporting to selected Project Leader (In a Combo box).
4. Display all the Employees (In a Grid) with their reporting Manager (No Value for PM).
NOTE: tbl_Designation is a static table containing the following Rows in it.
1 Project Manager
2 Project Leader
3 Engineer


Form1
Employee Management System
INSERT
DISPLAY ALL EMPLOYEES
PROJECT LEADERS REPORTING PROJECT MANAGER
ENGINEERS REPORTING PROJECT LEADERS
DISPLAY EMPLOYEE


Form2
Enter Employee Details
Employee ID
Employee Name
Contact Number
Designation ID
Reporting ID
SAVE
BACK


Form3
Project Manager
CLICK
BACK


Form4
Project Leader
CLICK
BACK


Form5
Employee details with their reporting manager
BACK

```
//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.Windows.Forms;
using System.Data.SqlClient;

namespace WindowsFormsApplication1
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void button1_Click(object sender, EventArgs e)
      {
         Form2 insertForm = new Form2();
         insertForm.Show();
         this.Hide();
      }

      private void button2_Click(object sender, EventArgs e)
      {
         SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=dbemployee;Integrated
Security=True;Pooling=False");
         con.Open();

         string query = "SELECT * FROM tbl_EmployeeDetails";

         SqlDataAdapter da = new SqlDataAdapter(query, con);
         DataTable dt = new DataTable();
         da.Fill(dt);

         dataGridView1.DataSource = dt;

         con.Close();
      }
```

```
        private void button3_Click(object sender, EventArgs e)
        {
            Form3 pmgrForm = new Form3();
            pmgrForm.Show();
            this.Hide();
        }

        private void button4_Click(object sender, EventArgs e)
        {
            Form4 pldrForm = new Form4();
            pldrForm.Show();
            this.Hide();
        }

        private void button5_Click(object sender, EventArgs e)
        {
            Form5 empForm = new Form5();
            empForm.Show();
            this.Hide();
        }

        private void dataGridView1_CellContentClick(object sender,
DataGridViewCellEventArgs e)
        {

        }
    }
}

//Form2.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace WindowsFormsApplication1
{
    public partial class Form2 : Form
```

```
  {
    public Form2()
    {
      InitializeComponent();
    }

    private void label2_Click(object sender, EventArgs e)
    {

    }

    private void button2_Click(object sender, EventArgs e)
    {
      Form1 dispForm = new Form1();
      dispForm.Show();
      this.Hide();
    }

    private void button1_Click(object sender, EventArgs e)
    {
      SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=dbemployee;Integrated
Security=True;Pooling=False");
      con.Open();
      SqlCommand cmd = new SqlCommand("insert into tbl_EmployeeDetails values("
+ textBox1.Text + ",'" + textBox2.Text + "'," + textBox3.Text + "," + textBox4.Text + "," +
textBox5.Text + ")", con);
      cmd.ExecuteNonQuery();
      MessageBox.Show("Record inserted successfully");
      textBox1.Text = "";
      textBox2.Text = "";
      textBox3.Text = "";
      textBox4.Text = "";
      textBox5.Text = "";

      textBox1.Focus();

      con.Close();
    }

    private void Form2_Load(object sender, EventArgs e)
    {

    }
```

```
        private void textBox1_TextChanged(object sender, EventArgs e)
        {

        }

        private void textBox2_TextChanged(object sender, EventArgs e)
        {

        }

        private void textBox3_TextChanged(object sender, EventArgs e)
        {

        }

        private void textBox4_TextChanged(object sender, EventArgs e)
        {

        }

        private void textBox5_TextChanged(object sender, EventArgs e)
        {

        }

        private void label5_Click(object sender, EventArgs e)
        {

        }

        private void label1_Click(object sender, EventArgs e)
        {

        }
    }
}

//Form3.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
```

```
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;


namespace WindowsFormsApplication1
{
   public partial class Form3 : Form
   {
      public Form3()
      {
         InitializeComponent();
      }

      private void comboBox1_SelectedIndexChanged(object sender, EventArgs e)
      {

      }

      private void button2_Click(object sender, EventArgs e)
      {
         Form1 dispForm = new Form1();
         dispForm.Show();
         this.Hide();
      }

      private void Form3_Load(object sender, EventArgs e)
      {
         SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=dbemployee;Integrated
Security=True;Pooling=False");
         con.Open();

         SqlDataAdapter da = new SqlDataAdapter("SELECT EmployeeName FROM
tbl_EmployeeDetails WHERE IdDesignation = 1", con);
         DataTable dt = new DataTable();
         da.Fill(dt);

         comboBox1.DataSource = dt;
         comboBox1.DisplayMember = "EmployeeName";
         comboBox1.ValueMember = "EmployeeName";

         con.Close();
```

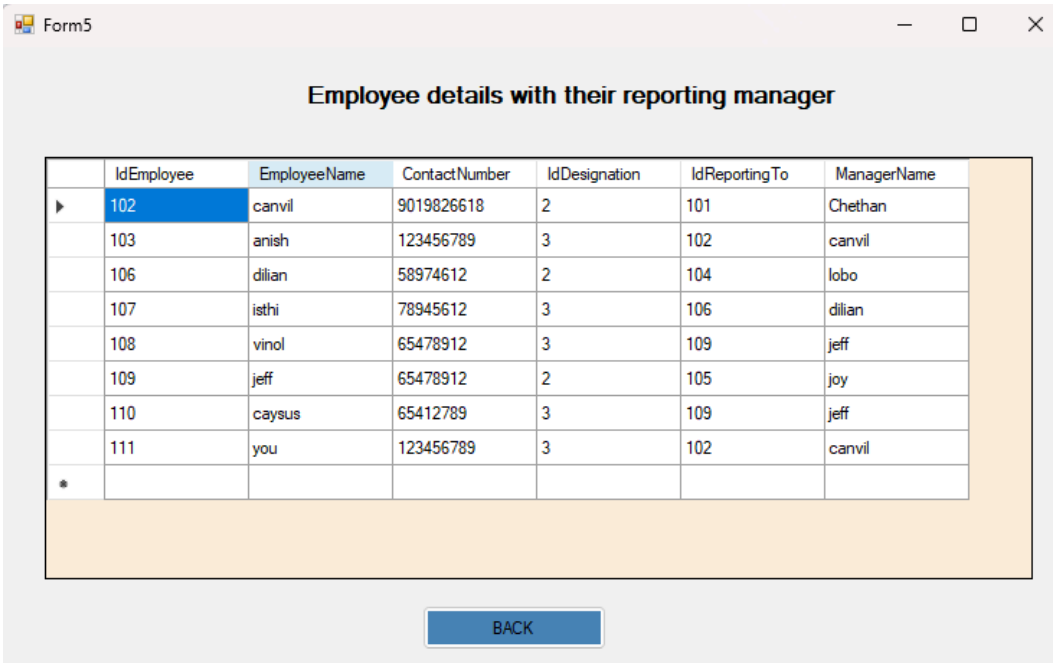
```
        }

        private void button1_Click(object sender, EventArgs e)
        {

            SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=dbemployee;Integrated
Security=True;Pooling=False");
            con.Open();

            SqlDataAdapter da = new SqlDataAdapter("SELECT * FROM tbl_EmployeeDetails
WHERE IdReportingTo = (SELECT IdEmployee FROM tbl_EmployeeDetails WHERE
EmployeeName = '" + comboBox1.SelectedValue.ToString() + "')",con);

            DataTable dt = new DataTable();
            da.Fill(dt);

            dataGridView1.DataSource = dt;

            con.Close();
        }
    }
}

//Form4.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace WindowsFormsApplication1
{
    public partial class Form4 : Form
    {
        public Form4()
        {
            InitializeComponent();
        }
```

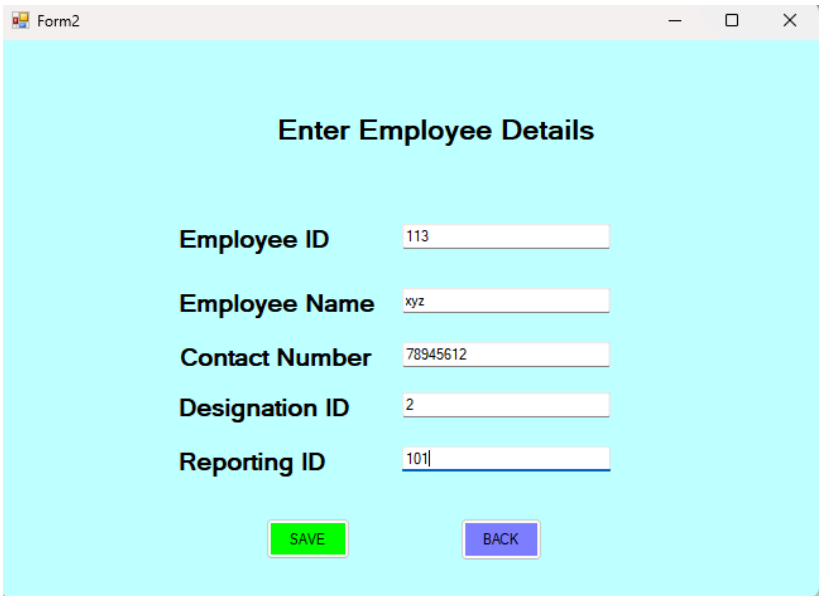
```
    private void button2_Click(object sender, EventArgs e)
    {
        Form1 dispForm = new Form1();
        dispForm.Show();
        this.Hide();
    }

    private void Form4_Load(object sender, EventArgs e)
    {
        SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=dbemployee;Integrated
Security=True;Pooling=False");
        con.Open();

        SqlDataAdapter da = new SqlDataAdapter("SELECT EmployeeName FROM
tbl_EmployeeDetails WHERE IdDesignation = 2", con);
        DataTable dt = new DataTable();
        da.Fill(dt);

        comboBox1.DataSource = dt;
        comboBox1.DisplayMember = "EmployeeName";
        comboBox1.ValueMember = "EmployeeName";

        con.Close();
    }

    private void button1_Click(object sender, EventArgs e)
    {
        SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=dbemployee;Integrated
Security=True;Pooling=False");
        con.Open();

        SqlDataAdapter da = new SqlDataAdapter("SELECT * FROM tbl_EmployeeDetails
WHERE IdReportingTo = (SELECT IdEmployee FROM tbl_EmployeeDetails WHERE
EmployeeName = '" + comboBox1.SelectedValue.ToString() + "')", con);

        DataTable dt = new DataTable();
        da.Fill(dt);

        dataGridView1.DataSource = dt;

        con.Close();
    }
```

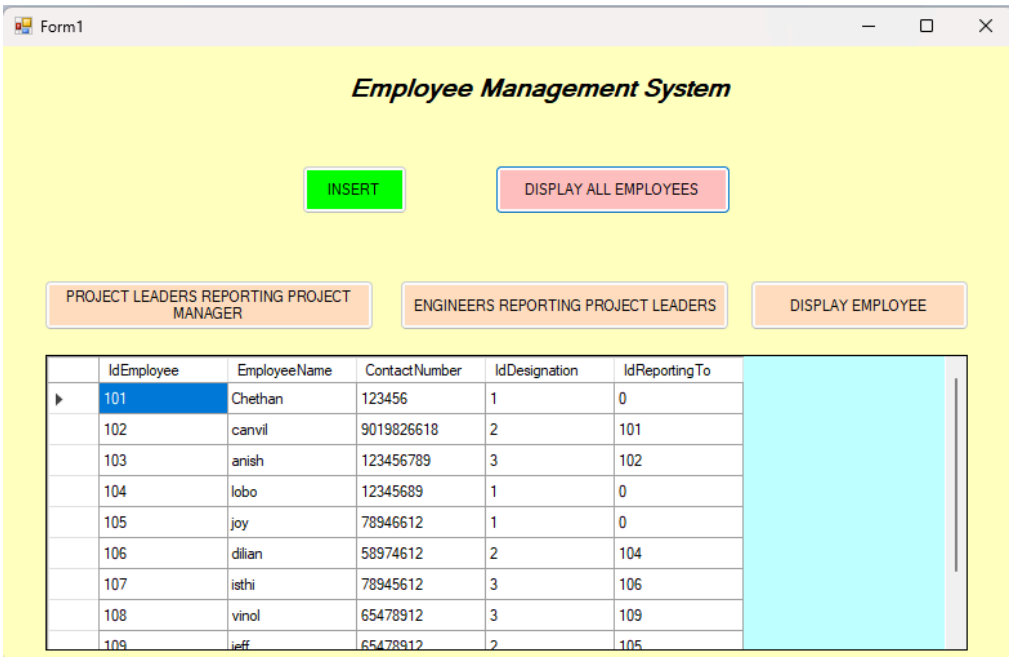
```
    }
}

//Form5.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace WindowsFormsApplication1
{
    public partial class Form5 : Form
    {
        public Form5()
        {
            InitializeComponent();
        }

        private void Form5_Load(object sender, EventArgs e)
        {
            SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=dbemployee;Integrated
Security=True;Pooling=False");
            con.Open();

            string query = "SELECT a.IdEmployee, a.EmployeeName, a.ContactNumber,
a.IdDesignation, a.IdReportingTo, b.EmployeeName AS ManagerName FROM
tbl_EmployeeDetails a, tbl_EmployeeDetails b WHERE a.IdReportingTo = b.IdEmployee;";

            SqlDataAdapter da = new SqlDataAdapter(query, con);
            DataTable dt = new DataTable();
            da.Fill(dt);

            dataGridView1.DataSource = dt;

            con.Close();
        }

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

```
        {
            Form1 dispForm = new Form1();
            dispForm.Show();
            this.Hide();
        }
    }
}
```

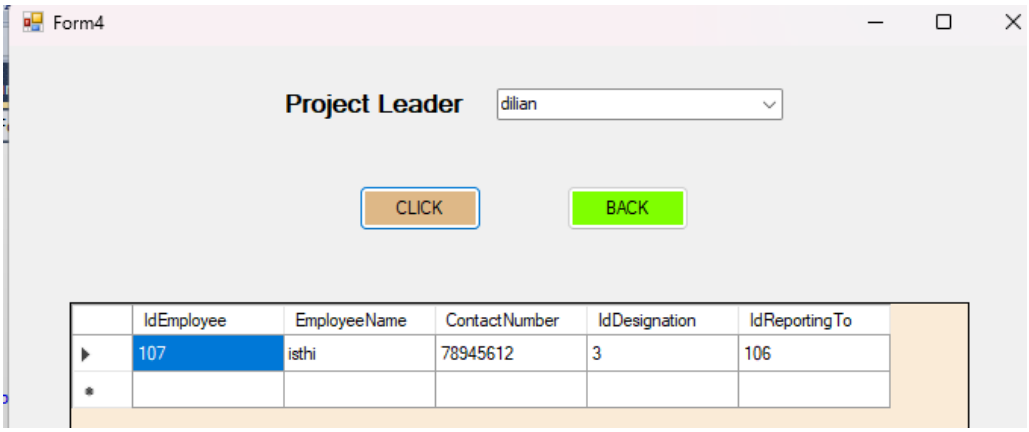
OUTPUT:-



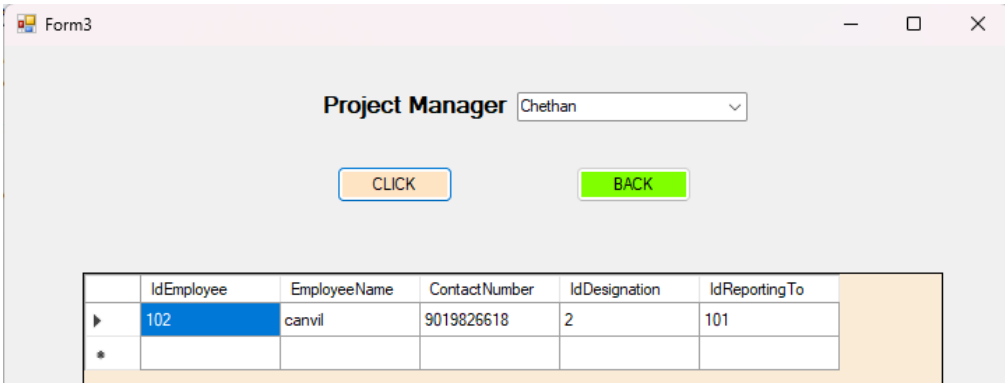




IdEmployee	EmployeeName	ContactNumber	IdDesignation	IdReportingTo
101	Chethan	123456	1	0
102	canvil	9019826618	2	101
103	anish	123456789	3	102
104	lobo	12345689	1	0
105	joy	78946612	1	0
106	dilian	58974612	2	104
107	isthi	78945612	3	106
108	vinol	65478912	3	109
109	jeff	65478912	2	105



IdEmployee	EmployeeName	ContactNumber	IdDesignation	IdReportingTo
107	isthi	78945612	3	106



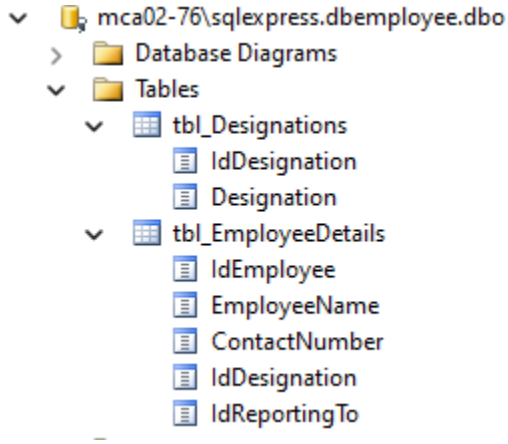
IdEmployee	EmployeeName	ContactNumber	IdDesignation	IdReportingTo
102	canvil	9019826618	2	101

tbl_Designations:...express.dbemployee)

	IdDesignation	Designation
▶	1	Project Manager
	2	Project Leader
	3	Engineer
*	*NULL*	*NULL*

tbl_EmployeeDetai...xpress.dbemployee) | Solution Explorer | Server Explorer | Form1.cs [D

	IdEmployee	EmployeeName	ContactNumber	IdDesignation	IdReportingTo
▶	101	Chethan	123456	1	0
	102	canvil	9019826618	2	101
	103	anish	123456789	3	102
	104	lobo	12345689	1	0
	105	joy	78946612	1	0
	106	dilian	58974612	2	104
	107	isthi	78945612	3	106
	108	vinol	65478912	3	109
	109	jeff	65478912	2	105
	110	caysus	65412789	3	109
	111	you	123456789	3	102
*	*NULL*	*NULL*	*NULL*	*NULL*	*NULL*



II. Consider the Database db_LSA (Lecturer Subject Allocation) consisting of the following tables:
tbl_Subjects(IdSubject: int, SubjectCode: string, SubjectName: string)
tbl_Lecturers(IdLecturer: int, LecturerName: string, ContactNumber: string)
tbl_LecturerSubjects(IdSubject: int, SubjectCode: string, IdLecturer: int)
Develop a suitable window application using C#.NET having following options.
1. Enter new Subject Details.
2. Enter New Lecturer Details.
3. Subject Allocation with Lecturer Name in a Combo box and subjects to be allocated in Grid with checkbox Column.
4. Display all the subjects allocated (In a Grid) to the selected Lecturer (In a Combo Box).

```
//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.Windows.Forms;

namespace Bprog2
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void button4_Click(object sender, EventArgs e)
      {
         Form5 insertSubAllocForm = new Form5();
         insertSubAllocForm.Show();
         this.Hide();
      }

      private void button1_Click(object sender, EventArgs e)
      {
         Form2 insertSubForm = new Form2();
```

```
            insertSubForm.Show();
            this.Hide();
        }

        private void button2_Click(object sender, EventArgs e)
        {
            Form3 insertLectForm = new Form3();
            insertLectForm.Show();
            this.Hide();
        }

        private void button3_Click(object sender, EventArgs e)
        {
            Form4 subAllocForm = new Form4();
            subAllocForm.Show();
            this.Hide();
        }

        private void button5_Click(object sender, EventArgs e)
        {

        }









        }
    }

//Form2.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace Bprog2
{
    public partial class Form2 : Form
```

```
  {
    public Form2()
    {
      InitializeComponent();
    }

    private void textBox1_TextChanged(object sender, EventArgs e)
    {

    }

    private void button4_Click(object sender, EventArgs e)
    {
      SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=prog2;Integrated Security=True");
      con.Open();
      SqlCommand cmd = new SqlCommand("INSERT INTO tbl_Subjects VALUES(" +
textBox1.Text + ", '" + textBox2.Text + "', '" + textBox3.Text + "')", con);
      cmd.ExecuteNonQuery();
      MessageBox.Show("Subject Added Successfully!");
      textBox1.Text = "";
      textBox2.Text = "";
      textBox3.Text = "";
      textBox1.Focus();
      con.Close();
    }

    private void button5_Click(object sender, EventArgs e)
    {


      Form1 dispForm = new Form1();
      dispForm.Show();
      this.Hide();
    }
  }
}

//Form3.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
```

```
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;
namespace Bprog2
{
   public partial class Form3 : Form
   {
      public Form3()
      {
         InitializeComponent();
      }

      private void button1_Click(object sender, EventArgs e)
      {
         SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=prog2;Integrated Security=True");
         con.Open();
         SqlCommand cmd = new SqlCommand("INSERT INTO tbl_Lecturers VALUES(" +
textBox1.Text + ", '" + textBox2.Text + "', '" + textBox3.Text + "')", con);
         cmd.ExecuteNonQuery();
         MessageBox.Show("Lecturer Added Successfully!");
         textBox1.Text = "";
         textBox2.Text = "";
         textBox3.Text = "";
         textBox1.Focus();
         con.Close();
      }

      private void button2_Click(object sender, EventArgs e)
      {
         Form1 dispForm = new Form1();
         dispForm.Show();
         this.Hide();
      }
   }

}

//Form4.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
```

```
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace Bprog2
{
   public partial class Form4 : Form
   {
      public Form4()
      {
         InitializeComponent();
      }

      private void label3_Click(object sender, EventArgs e)
      {
         // Empty method - you can remove if not needed
      }

      private void button1_Click(object sender, EventArgs e)
      {
         SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=prog2;Integrated Security=True");
         con.Open();

         string lecturerId = comboBox1.SelectedValue.ToString();

         foreach (DataGridViewRow row in dataGridView1.Rows)
         {
            if (Convert.ToBoolean(row.Cells["Check"].Value))
            {
               string subjectId = row.Cells["IdSubject"].Value.ToString();
               string subjectCode = row.Cells["SubjectCode"].Value.ToString();
               SqlCommand cmd = new SqlCommand("INSERT INTO tbl_LecturerSubjects
(IdSubject, SubjectCode, IdLecturer) VALUES ('" + subjectId + "', '" + subjectCode + "', '"
+ lecturerId + "')", con);
               cmd.ExecuteNonQuery();
            }
         }

         MessageBox.Show("Subjects allocated successfully!");
         con.Close();
      }
```

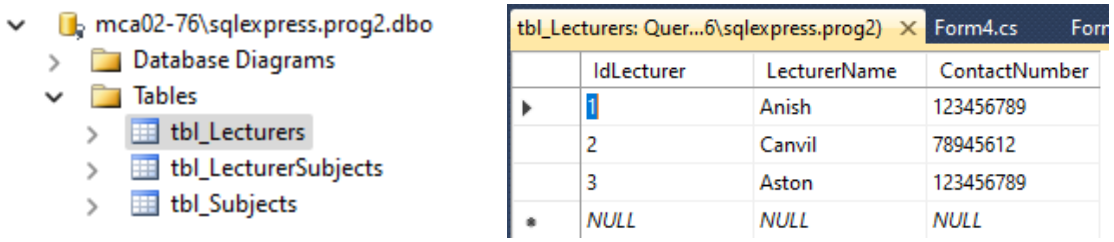
```
    private void button2_Click(object sender, EventArgs e)
    {
        // Navigate to another form (Form1)
        Form1 dispForm = new Form1();
        dispForm.Show();
        this.Hide();
    }

    private void Form4_Load(object sender, EventArgs e)
    {
        // Load data for ComboBox (Lecturers) and DataGridView (Subjects)
        using (SqlConnection con = new SqlConnection("Data
Source=mca02-76\\sqlexpress;Initial Catalog=prog2;Integrated Security=True"))
        {
            con.Open();

            // Load lecturers into ComboBox
            string query = "SELECT IdLecturer, LecturerName FROM tbl_Lecturers";
            SqlDataAdapter sda = new SqlDataAdapter(query, con);
            DataTable dt = new DataTable();
            sda.Fill(dt);
            comboBox1.DataSource = dt;
            comboBox1.DisplayMember = "LecturerName";
            comboBox1.ValueMember = "IdLecturer";

            // Load subjects into DataGridView
            string query1 = "SELECT IdSubject, SubjectCode, SubjectName FROM
tbl_Subjects";
            SqlDataAdapter sda1 = new SqlDataAdapter(query1, con);
            DataTable dt1 = new DataTable();
            sda1.Fill(dt1);
            dataGridView1.DataSource = dt1;

            // Add a checkbox column to the DataGridView
            DataGridViewCheckBoxColumn c = new DataGridViewCheckBoxColumn();
            c.Name = "check";
            c.Width = 50;
            dataGridView1.Columns.Insert(0, c);

            con.Close();
        }
    }
```

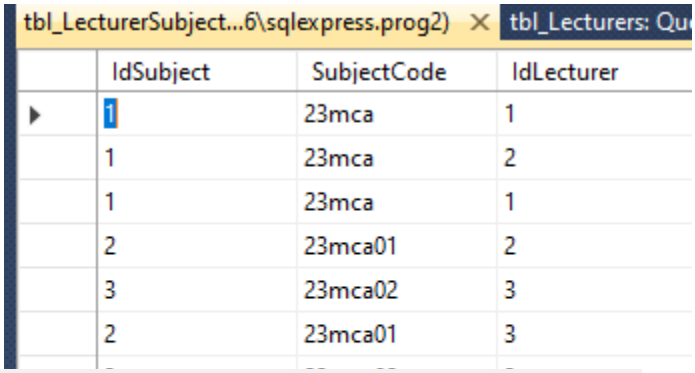
```
        private void comboBox1_SelectedIndexChanged(object sender, EventArgs e)
        {
            // Empty method - you can remove if not needed
        }
    }
}

//Form5.cs
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace Bprog2
{
    public partial class Form5 : Form
    {
        public Form5()
        {
            InitializeComponent();
        }



private void comboBox1_SelectedIndexChanged(object sender, EventArgs e)
{
    SqlConnection con = new SqlConnection("Data Source=mca02-76\\sqlexpress;Initial
Catalog=prog2;Integrated Security=True");
    con.Open();

    // Check if comboBox1 has a valid selected value
    if (comboBox1.SelectedValue != null)
    {
        string query1 = "select distinct IdLecturer from tbl_Lecturers where
LecturerName='" + comboBox1.SelectedValue + "'";
        SqlDataAdapter sda1 = new SqlDataAdapter(query1, con);
        DataTable dt1 = new DataTable();
        sda1.Fill(dt1);
```

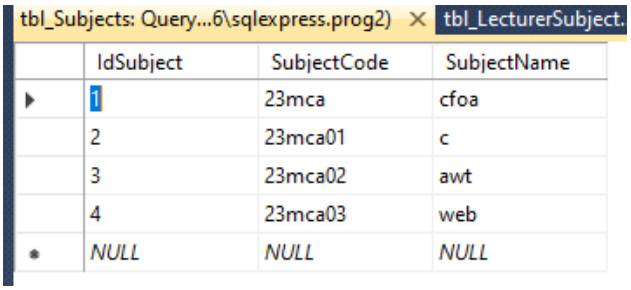
```
        // Check if there are rows in dt1 before accessing the data
        if (dt1.Rows.Count > 0)
        {
            int IdLecturer = int.Parse(dt1.Rows[0][0].ToString());
            string query2 = "select distinct * from tbl_LecturerSubjects where IdLecturer= " +
IdLecturer + " ";
            SqlDataAdapter sda2 = new SqlDataAdapter(query2, con);
            DataTable dt2 = new DataTable();
            sda2.Fill(dt2);
            dataGridView1.DataSource = dt2;
        }

    }

    con.Close();
}

private void label2_Click(object sender, EventArgs e)
{

}

private void label1_Click(object sender, EventArgs e)
{

}

private void dataGridView1_CellContentClick(object sender, DataGridViewCellEventArgs
e)
{

}

private void Display_All_Subjects_Alloted_to_a_Faculty_Load(object sender, EventArgs
e)
{
    SqlConnection con = new SqlConnection("Data Source=mca02-76\\sqlexpress;Initial
Catalog=prog2;Integrated Security=True");
    con.Open();
    string query = "select LecturerName from tbl_Lecturers";
    SqlDataAdapter sda = new SqlDataAdapter(query, con);
    DataTable dt = new DataTable();
    sda.Fill(dt);
```

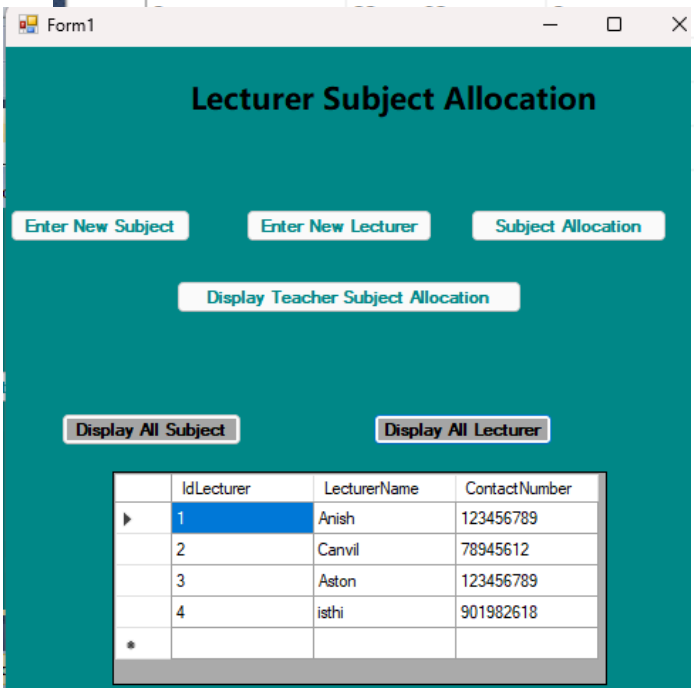
```
    comboBox1.DataSource = dt;
    comboBox1.DisplayMember = "LecturerName";
    comboBox1.ValueMember = "LecturerName";

    // Handle the scenario when no LecturerName is selected (if applicable)
    if (comboBox1.SelectedValue != null)
    {
        string query1 = "select distinct IdLecturer from tbl_Lecturers where
LecturerName='" + comboBox1.SelectedValue + "'";
        SqlDataAdapter sda1 = new SqlDataAdapter(query1, con);
        DataTable dt1 = new DataTable();
        sda1.Fill(dt1);

        // Check if there are rows in dt1 before accessing the data
        if (dt1.Rows.Count > 0)
        {
            int IdLecturer = int.Parse(dt1.Rows[0][0].ToString());
            string query2 = "select distinct * from tbl_LecturerSubjects where IdLecturer= " +
IdLecturer + " ";
            SqlDataAdapter sda2 = new SqlDataAdapter(query2, con);
            DataTable dt2 = new DataTable();
            sda2.Fill(dt2);
            dataGridView1.DataSource = dt2;
        }
        else
        {
            // Show a message if no lecturer found with the selected name
            MessageBox.Show("No lecturer found for the selected name.");
        }
    }

    con.Close();
}
}


}
```

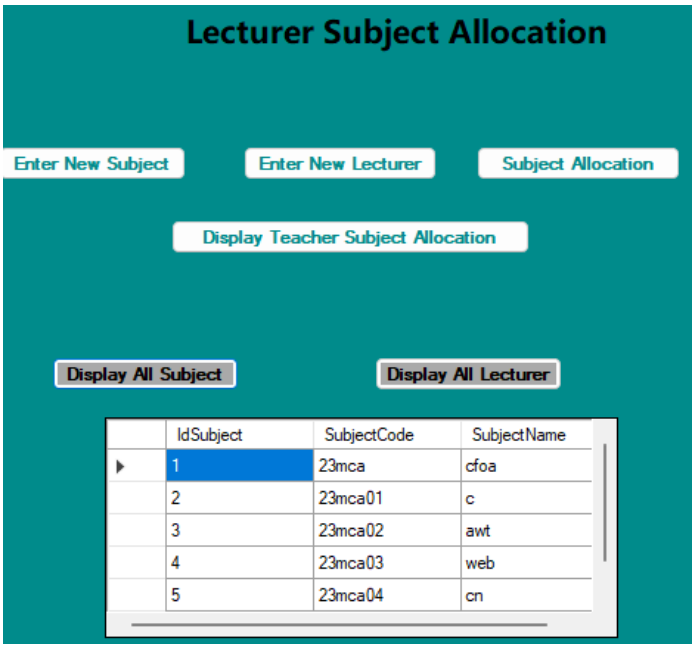
OUTPUT:-

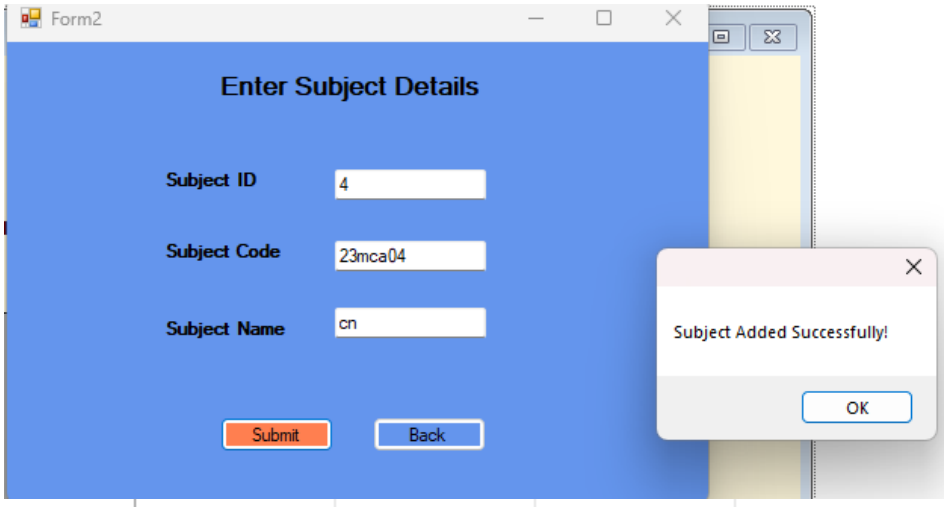

mca02-76\sqlexpress.prog2.dbo
Database Diagrams
Tables
tbl_Lecturers
tbl_LecturerSubjects
tbl_Subjects
tbl_Lecturers: Quer...6\sqlexpress.prog2)
Form4.cs
IdLecturer LecturerName ContactNumber
1 Anish 123456789
2 Canvil 78945612
3 Aston 123456789
NULL NULL NULL


tbl_LecturerSubject...6\sqlexpress.prog2)
tbl_Lecturers: Qu
IdSubject SubjectCode IdLecturer
1 23mca 1
1 23mca 2
1 23mca 1
2 23mca01 2
3 23mca02 3
2 23mca01 3


tbl_Subjects: Query...6\sqlexpress.prog2)
tbl_LecturerSubject.
IdSubject SubjectCode SubjectName
1 23mca cfoa
2 23mca01 c
3 23mca02 awt
4 23mca03 web
NULL NULL NULL


Form1
Lecturer Subject Allocation
Enter New Subject
Enter New Lecturer
Subject Allocation
Display Teacher Subject Allocation
Display All Subject
Display All Lecturer
IdLecturer LecturerName ContactNumber
1 Anish 123456789
2 Canvil 78945612
3 Aston 123456789
4 isthi 901982618

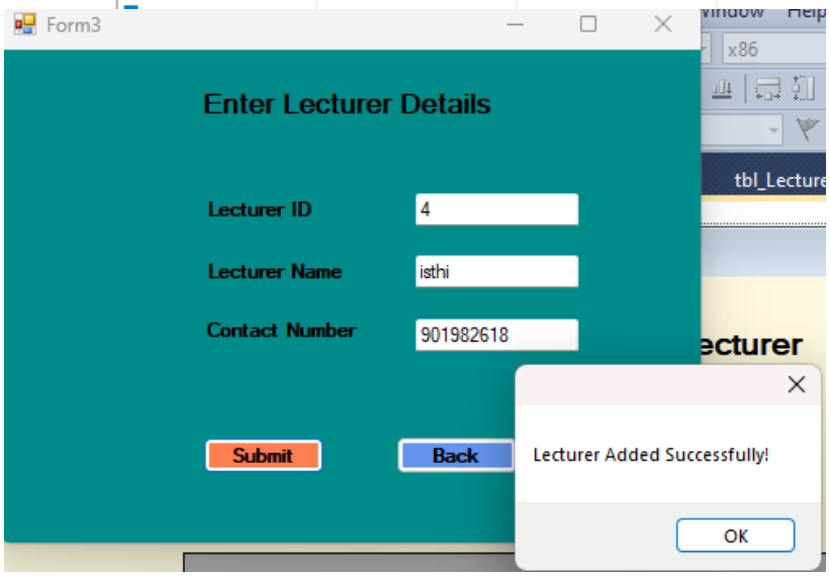

Lecturer Subject Allocation
Enter New Subject
Enter New Lecturer
Subject Allocation
Display Teacher Subject Allocation
Display All Subject
Display All Lecturer
IdSubject SubjectCode SubjectName
1 23mca cfoa
2 23mca01 c
3 23mca02 awt
4 23mca03 web
5 23mca04 cn



tbl_Subjects: Query...6\sqlexpress.prog2) | tbl_Lecturers: Qu

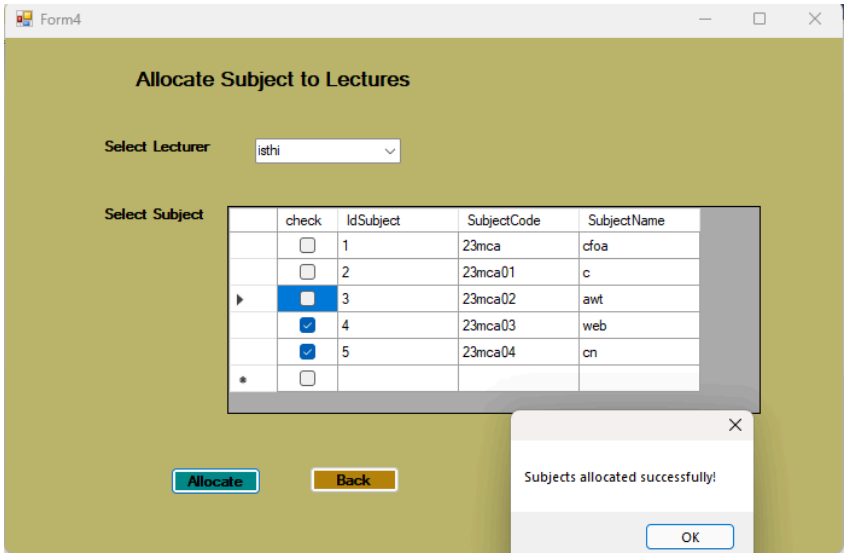
IdSubject	SubjectCode	SubjectName
1	23mca	cfoa
2	23mca01	c
3	23mca02	awt
4	23mca03	web
5	23mca04	cn
NULL	NULL	NULL

IdLecturer	LecturerName	ContactNumber



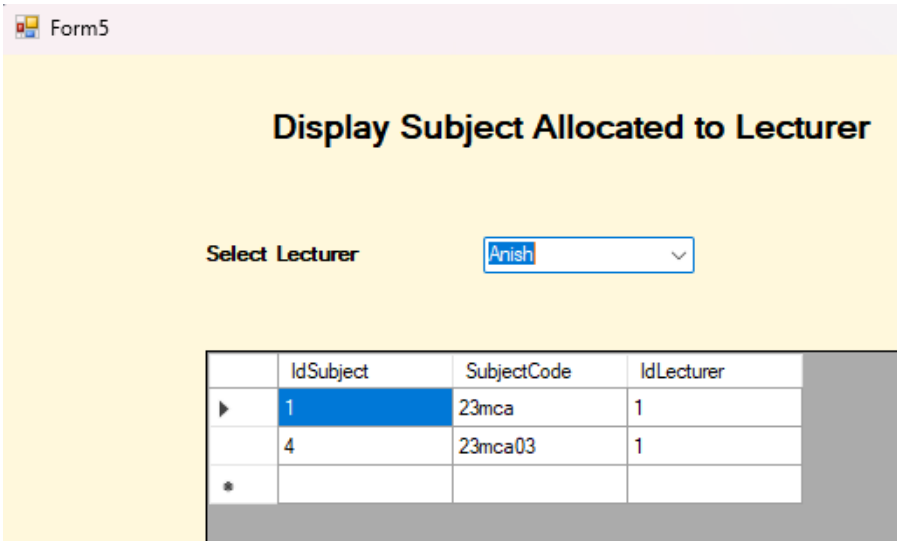
tbl_Lecturers: Quer...6\sqlexpress.prog2) | tbl_LecturerSubject...

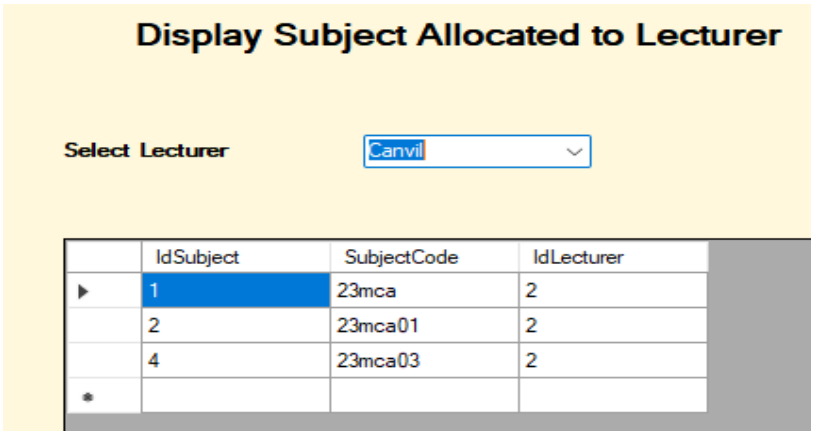
IdLecturer	LecturerName	ContactNumber
1	Anish	123456789
2	Canvil	78945612
3	Aston	123456789
4	isthi	901982618
NULL	NULL	NULL

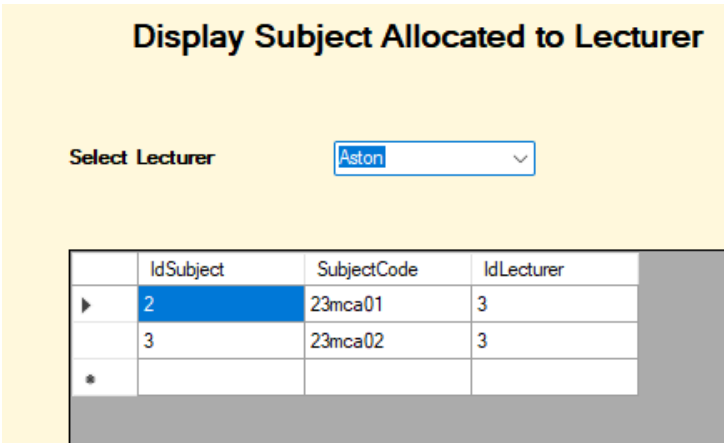


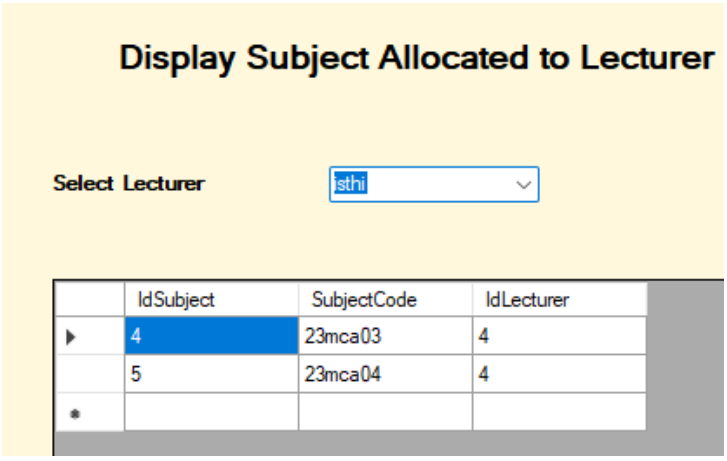
tbl_LecturerSubject...6\sqlexpress.prog2) | Form5.cs

IdSubject	SubjectCode	IdLecturer
1	23mca	1
1	23mca	2
1	23mca	1
2	23mca01	2
3	23mca02	3
2	23mca01	3
3	23mca02	3
4	23mca03	2
4	23mca03	1
4	23mca03	4
5	23mca04	4
NULL	NULL	NULL


Form5
Display Subject Allocated to Lecturer
Select Lecturer
Anish
IdSubject
SubjectCode
IdLecturer
1
23mca
1
4
23mca03
1


Display Subject Allocated to Lecturer
Select Lecturer
Canvil
IdSubject
SubjectCode
IdLecturer
1
23mca
2
2
23mca01
2
4
23mca03
2


Display Subject Allocated to Lecturer
Select Lecturer
Aston
IdSubject
SubjectCode
IdLecturer
2
23mca01
3
3
23mca02
3


Display Subject Allocated to Lecturer
Select Lecturer
isthi
IdSubject
SubjectCode
IdLecturer
4
23mca03
4
5
23mca04
4

```
//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.Windows.Forms;
using System.Data.SqlClient;
namespace Bprog2
{
   public partial class Form1 : Form
   {
      public Form1()
      {
         InitializeComponent();
      }

      private void button4_Click(object sender, EventArgs e)
      {
         Form5 insertSubAllocForm = new Form5();
         insertSubAllocForm.Show();
         this.Hide();
      }

      private void button1_Click(object sender, EventArgs e)
      {
         Form2 insertSubForm = new Form2();
         insertSubForm.Show();
         this.Hide();
      }

      private void button2_Click(object sender, EventArgs e)
      {
         Form3 insertLectForm = new Form3();
         insertLectForm.Show();
         this.Hide();
      }

      private void button3_Click(object sender, EventArgs e)
      {
         Form4 subAllocForm = new Form4();
         subAllocForm.Show();
```

```
        this.Hide();
    }

    private void button5_Click(object sender, EventArgs e)
    {
        // Replace with your actual connection string
        string connectionString = ("Data Source=mca02-76\\sqlexpress;Initial
Catalog=prog2;Integrated Security=True");

        // Create a connection to the database
        using (SqlConnection connection = new SqlConnection(connectionString))
        {
            try
            {
                // Open the connection
                connection.Open();

                // SQL query to fetch all subjects from tbl_Subjects
                string query = "SELECT * FROM tbl_Subjects";

                // Data adapter to fill data into a DataTable
                SqlDataAdapter dataAdapter = new SqlDataAdapter(query, connection);
                DataTable dataTable = new DataTable();
                dataAdapter.Fill(dataTable);

                // Display the data in the DataGridView control
                dataGridView1.DataSource = dataTable;
            }
            catch (Exception ex)
            {
                // Handle any errors
                MessageBox.Show("Error: " + ex.Message);
            }
        }
    }

    private void button6_Click(object sender, EventArgs e)
    {
        // Replace with your actual connection string
        string connectionString = ("Data Source=mca02-76\\sqlexpress;Initial
Catalog=prog2;Integrated Security=True");

        // Create a connection to the database
        using (SqlConnection connection = new SqlConnection(connectionString))
```

```
        {
            try
            {
                // Open the connection
                connection.Open();

                // SQL query to fetch all lecturers from tbl_Lecturers
                string query = "SELECT * FROM tbl_Lecturers";

                // Data adapter to fill data into a DataTable
                SqlDataAdapter dataAdapter = new SqlDataAdapter(query, connection);
                DataTable dataTable = new DataTable();
                dataAdapter.Fill(dataTable);

                // Display the data in the DataGridView control
                dataGridView1.DataSource = dataTable;
            }
            catch (Exception ex)
            {
                // Handle any errors
                MessageBox.Show("Error: " + ex.Message);
            }
        }
    }

    private void dataGridView1_CellContentClick(object sender,
DataGridViewCellEventArgs e)
    {
        // You can handle cell click events here if needed
    }
  }
}
```

IV. Develop a web application using C#.NET and ASP.NET for the Postal System Management.
The master
page should contain the hyper links for adding Area Details, Postman details, Letter distributions
and View Letters.
Consider the database db_PSM (Postal System Management) consisting of the following tables:
tbl_AreaDetails(IdArea: int, AreaName: string)
tbl_PostmanDetails(IdPostman: int, PostmanName: string, ContactNumber: string, IdArea: int)
tbl_AreaLetters(IdLetter: int, LetterAddress: string, IdArea: int)
Develop the suitable content pages for the above created 4 hyper links with the following details:
1. Enter New Area Details
2. Enter New Postman Details with the Area he/she is in-charge of (display Area in a Combo
box)
3. Enter all the Letters distributed to the selected Area (display Area in a Combo box)
4. Display all the Letter addresses (In a Grid) to be distributed by the selected Postman (In a Combo box)

//Site1.Master

```
<%@ Master Language="C#" AutoEventWireup="true" CodeBehind="Site1.master.cs" Inherits="partb4.Site1" %>

<!DOCTYPE html>
<html>
<head id="Head1" runat="server">
   <title>Postal System Management</title>
   <link href="StyleSheet1.css" rel="stylesheet" type="text/css" />
</head>
<body>
   <form id="form1" runat="server">
      <div class="header">
         <h1>Postal System Management</h1>
      </div>

      <!-- Navigation links (Hyperlinks) -->
      <div class="nav">
         <ul>
            <li><a href="AddAreaDetails.aspx">Enter New Area Details</a></li>
            <li><a href="AddPostmanDetails.aspx">Enter New Postman Details</a></li>
            <li><a href="AddLetters.aspx">Enter Letters for Area</a></li>
```

```
            <li><a href="AddPostmanLetters.aspx">View All Letters</a></li>
        </ul>
    </div>

    <!-- Main content placeholder -->
    <div>
        <asp:ContentPlaceHolder id="MainContent" runat="server">
        </asp:ContentPlaceHolder>
    </div>
  </form>
</body>
</html>
```

//AddAreaDeatils.aspx

```
<%@ Page Language="C#" AutoEventWireup="true"
CodeBehind="AddAreaDetails.aspx.cs" Inherits="partb4.AddAreaDetails"
MasterPageFile="~/Site1.Master" %>

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" Runat="Server">
  <h2>Enter New Area Details</h2>

    <div>
        <label for="txtIdArea">Area ID:</label>

        <asp:TextBox ID="txtIdArea" runat="server"></asp:TextBox>
    </div>
    <div>
        <label for="txtAreaName">Area Name:</label>

        <asp:TextBox ID="txtAreaName" runat="server"></asp:TextBox>
    </div>
    <div>

        <asp:Button ID="btnAddArea" runat="server" Text="Add Area"
OnClick="btnAddArea_Click" />
    </div>
  <!-- Label to display success or error message -->
    <div>
        <asp:Label ID="lblMessage" runat="server" ForeColor="Green"
Visible="False"></asp:Label>
    </div>

</asp:Content>
```

```
//AddAreaDetails.aspx.cs
using System;
using System.Data.SqlClient;

namespace partb4
{
   public partial class AddAreaDetails : System.Web.UI.Page
   {
      // Connection string for your database (adjust to your environment)
      string connectionString = "Data Source=mca02-76\\sqlexpress;Initial
Catalog=partb4;Integrated Security=True";
      // Page load event
      protected void Page_Load(object sender, EventArgs e)
      {
         // No need to generate Area ID automatically
      }

      // Event handler for the 'Add Area' button click
      protected void btnAddArea_Click(object sender, EventArgs e)
      {
         string areaId = txtIdArea.Text; // Get the Area ID from the textbox (manual input)
         string areaName = txtAreaName.Text; // Get the Area Name from the textbox

         try
         {
            // Insert the new area details into the database
            using (SqlConnection conn = new SqlConnection(connectionString))
            {
               SqlCommand cmd = new SqlCommand("INSERT INTO tbl_AreaDetails
(IdArea, AreaName) VALUES (@IdArea, @AreaName)", conn);
               cmd.Parameters.AddWithValue("@IdArea", areaId); // Pass the manually
entered Area ID
               cmd.Parameters.AddWithValue("@AreaName", areaName); // Pass the
entered Area Name

               conn.Open();
               cmd.ExecuteNonQuery(); // Execute the query to insert the record
               conn.Close();
            }

            // Display success message and make it visible
            lblMessage.Text = "Area added successfully!";
            lblMessage.ForeColor = System.Drawing.Color.Green;
            lblMessage.Visible = true;
```

```
            // Optionally, clear the fields after submission
            txtIdArea.Text = "";
            txtAreaName.Text = "";
        }
        catch (Exception ex)
        {
            // Display error message and make it visible
            lblMessage.Text = "Error: " + ex.Message;
            lblMessage.ForeColor = System.Drawing.Color.Red;
            lblMessage.Visible = true;
        }
    }
  }
}
```

//AddLetters.aspx

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="AddLetters.aspx.cs"
Inherits="PostalSystemManagement.AddLetters" MasterPageFile="~/Site1.Master" %>

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" Runat="Server">
  <h2>Enter All Letters Distributed to the Selected Area</h2>

  <div>
    <label for="txtLetterId">Letter ID:</label>
    <!-- Textbox for Letter ID -->
    <asp:TextBox ID="txtLetterId" runat="server" />
  </div>

  <div>
    <label for="txtLetterAddress">Letter Name:</label>
    <asp:TextBox ID="txtLetterAddress" runat="server" />
  </div>

  <div>
    <label for="ddlArea">Select Area:</label>
    <asp:DropDownList ID="ddlArea" runat="server">
      <asp:ListItem Text="Select Area" Value="0" />
    </asp:DropDownList>
  </div>

  <div>
    <asp:Button ID="btnAddLetter" runat="server" Text="Add Letter"
OnClick="btnAddLetter_Click" />
```

```
    </div>

    <div>
        <asp:Label ID="lblMessage" runat="server" Visible="false" />
    </div>
</asp:Content>


//AddLetters.aspx.cs
using System;
using System.Data.SqlClient;
using System.Web.UI;

namespace PostalSystemManagement
{
    public partial class AddLetters : Page
    {
        // Correct your connection string here
        string connectionString = "Data Source=mca02-76\\sqlexpress;Initial
Catalog=partb4;Integrated Security=True";

        protected void Page_Load(object sender, EventArgs e)
        {
            if (!IsPostBack)
            {
                // Populate the area dropdown when the page loads
                LoadAreas();
            }
        }

        // Method to populate the areas in the dropdown list
        private void LoadAreas()
        {
            using (SqlConnection conn = new SqlConnection(connectionString))
            {
                SqlCommand cmd = new SqlCommand("SELECT IdArea, AreaName FROM
tbl_AreaDetails", conn);
                conn.Open();
                SqlDataReader reader = cmd.ExecuteReader();
                ddlArea.DataSource = reader;
                ddlArea.DataTextField = "AreaName";
                ddlArea.DataValueField = "IdArea";
                ddlArea.DataBind();
                conn.Close();
```

```
        }
    }

    // Event handler when the "Add Letter" button is clicked
    protected void btnAddLetter_Click(object sender, EventArgs e)
    {
        string letterId = txtLetterId.Text;
        string letterAddress = txtLetterAddress.Text;
        string selectedAreaId = ddlArea.SelectedValue;

        // Ensure a valid area is selected
        if (selectedAreaId == "0")
        {
            lblMessage.Text = "Please select a valid area.";
            lblMessage.ForeColor = System.Drawing.Color.Red;
            lblMessage.Visible = true;
            return;
        }

        // Add the new letter details to the database
        using (SqlConnection conn = new SqlConnection(connectionString))
        {
            SqlCommand cmd = new SqlCommand("INSERT INTO tbl_AreaLetters (IdLetter,
LetterAddress, IdArea) VALUES (@IdLetter, @LetterAddress, @IdArea)", conn);
            cmd.Parameters.AddWithValue("@IdLetter", letterId); // Manually entered Letter
ID
            cmd.Parameters.AddWithValue("@LetterAddress", letterAddress);
            cmd.Parameters.AddWithValue("@IdArea", selectedAreaId);

            conn.Open();
            int rowsAffected = cmd.ExecuteNonQuery();
            conn.Close();

            // Display success or failure message
            if (rowsAffected > 0)
            {
                lblMessage.Text = "Letter details added successfully!";
                lblMessage.ForeColor = System.Drawing.Color.Green;
                lblMessage.Visible = true;
            }
            else
            {
                lblMessage.Text = "Error adding letter details.";
                lblMessage.ForeColor = System.Drawing.Color.Red;
```

```
                lblMessage.Visible = true;
            }
        }
    }
  }
}
```

//AddPostmanDetails.aspx

```
<%@ Page Language="C#" AutoEventWireup="true"
CodeBehind="AddPostmanDetails.aspx.cs"
Inherits="PostalSystemManagement.AddPostmanDetails"
MasterPageFile="~/Site1.Master" %>

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" Runat="Server">
  <h2>Enter New Postman Details</h2>

  <div>
    <label for="txtPostmanId">Postman ID:</label>
    <!-- Textbox for Postman ID -->
    <asp:TextBox ID="txtPostmanId" runat="server" />
  </div>

  <div>
    <label for="txtPostmanName">Postman Name:</label>
    <asp:TextBox ID="txtPostmanName" runat="server" />
  </div>

  <div>
    <label for="txtContactNumber">Contact Number:</label>
    <asp:TextBox ID="txtContactNumber" runat="server" />
  </div>

  <div>
    <label for="ddlArea">Select Area:</label>
    <asp:DropDownList ID="ddlArea" runat="server">
      <asp:ListItem Text="Select Area" Value="0" />
    </asp:DropDownList>
  </div>

  <div>
    <asp:Button ID="btnAddPostman" runat="server" Text="Add Postman"
OnClick="btnAddPostman_Click" />
  </div>
```

```
    <div>
        <asp:Label ID="lblMessage" runat="server" Visible="false" />
    </div>
</asp:Content>


//AddPostmanDetails.aspx.cs
using System;
using System.Data.SqlClient;
using System.Web.UI;

namespace PostalSystemManagement
{
    public partial class AddPostmanDetails : Page
    {
        string connectionString = "Data Source=mca02-76\\sqlexpress;Initial
Catalog=partb4;Integrated Security=True";

        protected void Page_Load(object sender, EventArgs e)
        {
            if (!IsPostBack)
            {
                // Populate the area dropdown when the page loads
                LoadAreas();
            }
        }

        // Method to populate the areas in the dropdown list
        private void LoadAreas()
        {
            using (SqlConnection conn = new SqlConnection(connectionString))
            {
                SqlCommand cmd = new SqlCommand("SELECT IdArea, AreaName FROM
tbl_AreaDetails", conn);
                conn.Open();
                SqlDataReader reader = cmd.ExecuteReader();
                ddlArea.DataSource = reader;
                ddlArea.DataTextField = "AreaName";
                ddlArea.DataValueField = "IdArea";
                ddlArea.DataBind();
                conn.Close();
            }
        }
```

```
    // Event handler when the "Add Postman" button is clicked
    protected void btnAddPostman_Click(object sender, EventArgs e)
    {
        string postmanId = txtPostmanId.Text;
        string postmanName = txtPostmanName.Text;
        string contactNumber = txtContactNumber.Text;
        string selectedAreaId = ddlArea.SelectedValue;

        // Ensure a valid area is selected
        if (selectedAreaId == "0")
        {
            lblMessage.Text = "Please select a valid area.";
            lblMessage.ForeColor = System.Drawing.Color.Red;
            lblMessage.Visible = true;
            return;
        }

        // Add the new postman details to the database
        using (SqlConnection conn = new SqlConnection(connectionString))
        {
            SqlCommand cmd = new SqlCommand("INSERT INTO tbl_PostmanDetails
(IdPostman, PostmanName, ContactNumber, IdArea) VALUES (@IdPostman,
@PostmanName, @ContactNumber, @IdArea)", conn);
            cmd.Parameters.AddWithValue("@IdPostman", postmanId); // Manually entered
Postman ID
            cmd.Parameters.AddWithValue("@PostmanName", postmanName);
            cmd.Parameters.AddWithValue("@ContactNumber", contactNumber);
            cmd.Parameters.AddWithValue("@IdArea", selectedAreaId);

            conn.Open();
            int rowsAffected = cmd.ExecuteNonQuery();
            conn.Close();

            // Display success or failure message
            if (rowsAffected > 0)
            {
                lblMessage.Text = "Postman details added successfully!";
                lblMessage.ForeColor = System.Drawing.Color.Green;
                lblMessage.Visible = true;
            }
            else
            {
                lblMessage.Text = "Error adding postman details.";
                lblMessage.ForeColor = System.Drawing.Color.Red;
```

```
                lblMessage.Visible = true;
            }
        }
    }
  }
}
```

```
//AddPostmanLetters.aspx
<%@ Page Language="C#" AutoEventWireup="true"
CodeBehind="AddPostmanLetters.aspx.cs"
Inherits="PostalSystemManagement.AddPostmanLetters"
MasterPageFile="~/Site1.Master" %>

<asp:Content ID="Content1" ContentPlaceHolderID="MainContent" Runat="Server">
   <h2>Display All the Letter Addresses Distributed by the Selected Postman</h2>

   <!-- Dropdown to select a Postman -->
   <div>
      <label for="ddlPostman">Select Postman:</label>
      <asp:DropDownList ID="ddlPostman" runat="server" AutoPostBack="true"
OnSelectedIndexChanged="ddlPostman_SelectedIndexChanged">
         <asp:ListItem Text="Select Postman" Value="0" />
      </asp:DropDownList>
   </div>

   <!-- Label to display messages like "No letters found" -->
   <asp:Label ID="lblMessage" runat="server" ForeColor="Red"
Visible="false"></asp:Label>

   <!-- Display Letters Assigned to the Selected Postman -->
   <h3>Letters Assigned to the Selected Postman</h3>
   <asp:GridView ID="gvLetters" runat="server" AutoGenerateColumns="false" >
      <Columns>
         <asp:BoundField DataField="IdLetter" HeaderText="Letter ID"
SortExpression="IdLetter" />
         <asp:BoundField DataField="LetterAddress" HeaderText="Letter Address"
SortExpression="LetterAddress" />
      </Columns>
   </asp:GridView>

</asp:Content>
```

```
//AddPostmanLetters.aspx.cs
using System;
using System.Data;
using System.Data.SqlClient;
using System.Web.UI;
using System.Web.UI.WebControls;

namespace PostalSystemManagement
{
   public partial class AddPostmanLetters : System.Web.UI.Page
   {
      private string connectionString = "Data Source=mca02-76\\sqlexpress;Initial
Catalog=partb4;Integrated Security=True";

      protected void Page_Load(object sender, EventArgs e)
      {
         if (!IsPostBack)
         {
            // Populate the Postman dropdown on page load
            PopulatePostmanDropdown();
         }
      }

      // Method to populate the Postman dropdown list
      private void PopulatePostmanDropdown()
      {
         using (SqlConnection conn = new SqlConnection(connectionString))
         {
            SqlCommand cmd = new SqlCommand("SELECT IdPostman, PostmanName
FROM tbl_PostmanDetails", conn);
            conn.Open();
            SqlDataReader reader = cmd.ExecuteReader();

            ddlPostman.DataSource = reader;
            ddlPostman.DataTextField = "PostmanName";  // Postman name to display
            ddlPostman.DataValueField = "IdPostman";  // IdPostman to be used as value
            ddlPostman.DataBind();

            // Add a default item at the top of the dropdown
            ddlPostman.Items.Insert(0, new ListItem("Select Postman", "0"));
         }
      }

      // Event handler when a postman is selected
```

```
    protected void ddlPostman_SelectedIndexChanged(object sender, EventArgs e)
    {
        // Get the selected Postman Id
        int postmanId = int.Parse(ddlPostman.SelectedValue);
        if (postmanId == 0)
        {
            gvLetters.DataSource = null;
            gvLetters.DataBind();
            return;
        }

        // Fetch the letters for the selected postman's area
        DisplayLettersForPostman(postmanId);
    }

    private void DisplayLettersForPostman(int postmanId)
    {
        int areaId = GetAreaIdForPostman(postmanId);
        if (areaId == 0)
        {
            gvLetters.DataSource = null;
            gvLetters.DataBind();
            lblMessage.Text = "No area found for the selected postman.";
            lblMessage.Visible = true;
            return;
        }

        // Check if any letters are assigned to the area
        using (SqlConnection conn = new SqlConnection(connectionString))
        {
            SqlCommand cmd = new SqlCommand("SELECT IdLetter, LetterAddress FROM
tbl_AreaLetters WHERE IdArea = @AreaId", conn);
            cmd.Parameters.AddWithValue("@AreaId", areaId);

            SqlDataAdapter da = new SqlDataAdapter(cmd);
            DataTable dt = new DataTable();
            da.Fill(dt);

            // Debugging - Check if data is being retrieved
            if (dt.Rows.Count == 0)
            {
                lblMessage.Text = "No letters found for the selected postman.";
                lblMessage.Visible = true;
            }
```

```
            else
            {
                lblMessage.Visible = false;
            }

            gvLetters.DataSource = dt;
            gvLetters.DataBind();
        }
    }

    // Method to get the AreaId for a selected postman
    private int GetAreaIdForPostman(int postmanId)
    {
        int areaId = 0;

        using (SqlConnection conn = new SqlConnection(connectionString))
        {
            SqlCommand cmd = new SqlCommand("SELECT IdArea FROM
tbl_PostmanDetails WHERE IdPostman = @PostmanId", conn);
            cmd.Parameters.AddWithValue("@PostmanId", postmanId);

            conn.Open();
            var result = cmd.ExecuteScalar();
            areaId = (result != null) ? Convert.ToInt32(result) : 0;
            conn.Close();
        }

        // Debugging - Log or output the retrieved areaId to check if it's correct
        System.Diagnostics.Debug.WriteLine("Area ID for Postman " + postmanId + ": " +
areaId);

        return areaId;
    }
  }
}
```

Postal System Management

Enter New Area Details Enter New Postman Details Enter Letters for Area View All Letters

Enter New Area Details

Area ID:

Area Name:

Add Area

Enter New Postman Details

Postman ID: 105

Postman Name: sush

Contact Number: 994586579

Select Area: Bondel

Add Postman

Postman details added successfully!

Enter New Area Details

Area ID: 5

Area Name: Bondel

Add Area

Enter All Letters Distributed to the Selected Area

Letter ID: 505

Letter Name: courier

Select Area: Bondel

Add Letter

Letter details added successfully!

Display All the Letter Addresses Distributed by the Selected Postman

Select Postman: aston

Letters Assigned to the Selected Postman

Letter ID	Letter Address
501	Post

Display All the Letter Addresses Distributed by the Selected Postman

Select Postman: joy

Letters Assigned to the Selected Postman

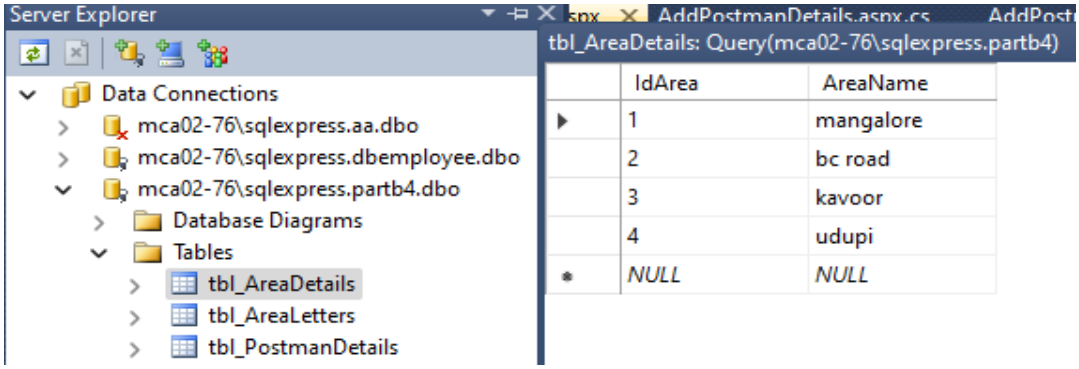
Letter ID	Letter Address
502	express

Display All the Letter Addresses Distributed by the Selected Postmar

Select Postman: dsouza

Letters Assigned to the Selected Postman

Letter ID	Letter Address
504	card



IdArea	AreaName
1	mangalore
2	bc road
3	kavoor
4	udupi
NULL	*NULL*

tbl_AreaLetters: Query(mca02-76\sqlexpress.partb4)

IdLetter	LetterAddress	IdArea
500	Passport	2
501	Post	1
502	express	3
503	pan	2
504	card	4
505	courier	5
NULL	*NULL*	*NULL*

tbl_PostmanDetails: Query(mca02-76\sqlexpress.partb4)

IdPostman	PostmanName	ContactNumber	IdArea
101	aston	9019826618	1
102	joy	9945865783	3
104	dsouza	994586575	4
105	sush	994586579	5
NULL	*NULL*	*NULL*	*NULL*