PART-A

1.(a) Write a Program in C# to demonstrate Command line arguments processing for the following

```
using System;
using System.Text;
using System.Collections;
using System.Data;
namespace Cons
{
public class squareroot
{
   public static void Main()
   {
         Console.WriteLine("Enter a Number : ");
         int Number = Convert.ToInt16(Console.ReadLine());
         double SqrtNumber = Math.Sqrt(Number);
         Console.WriteLine("Square root of {0} is: {1}", Number, SqrtNumber);
         Console.ReadLine();
   }
}
}
```

1.(b) To find the sum & average of three numbers

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

namespace Program
{
   class Program
   {
      static void Main(string[] args)
      {
         int num, sum = 0, r;
         Console.WriteLine("Enter a Number : ");
         num = int.Parse(Console.ReadLine());
         while (num != 0)
         {
            r = num % 10;
            num = num / 10;
            sum = sum + r;
         }
         Console.WriteLine("Sum of Digits of the Number : "+sum);
         Console.ReadLine();

      }
   }
}
```

2.Write a Program in C# to demonstrate the following

(a) Boxing and UnBoxing

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

```
namespace prg2
{
   class Program
   {
      static void Main(string[] args)
      {
         int i = 10;
         object o = i;
         Console.WriteLine("int boxing {0}",o);
            int j=(int)o;
            Console.WriteLine("int unboxing {0}", j);
            long p = 999999;
            object k = p;
            Console.WriteLine("long boxing {0}", k);
            long l = (long)k;
            Console.WriteLine("long unboxing {0}", l);
            Console.Read();
      }
   }
}
```

(b) **Invalid unboxing**

```
class TestUnboxing
{
   static void Main()
   {
      int i = 123;
      object o = i;  // implicit boxing
      try
      {
         int j = (short)o;  // attempt to unbox

         System.Console.WriteLine("Unboxing OK.");
      }
      catch (System.InvalidCastException e)
      {
         System.Console.WriteLine("{0} Error: Incorrect unboxing.", e.Message);
      }
   }
}
```

3.Write a program in C# to add Two complex numbers using Operator overloading

```
using System;

public struct Complex
{
   public int real;
   public int imaginary;

   public Complex(int real, int imaginary)
   {
      this.real = real;
      this.imaginary = imaginary;
```

```
    }


    public static Complex operator +(Complex c1, Complex c2)
    {
        return new Complex(c1.real + c2.real, c1.imaginary + c2.imaginary);
    }
        public override string ToString()
    {
        return (String.Format("{0} + {1}i", real, imaginary));
    }

    public static void Main()
    {
        Complex num1 = new Complex(2, 3);
        Complex num2 = new Complex(3, 4);


        Complex sum = num1 + num2;

              Console.WriteLine("First complex number:  {0}", num1);
        Console.WriteLine("Second complex number: {0}", num2);
        Console.WriteLine("The sum of the two numbers: {0}", sum);
        Console.ReadLine();

    }
}
```

4. Write a Program in C# to find the sum of each row of given jagged array of 3inner arrays

```
using System;

namespace jag
{
    class Program
    {
        static void Main(string[] args)
        {
            const int rows = 3;
            int i, sum= 0;
            int[][] j_arr = new int[rows][];
            j_arr[0] = new int[2];
            j_arr[1] = new int[3];
            j_arr[2] = new int[4];

            j_arr[0][1] = 10;
            j_arr[1][0] = 20;
            j_arr[1][1] = 30;
            j_arr[2][0] = 40;
            j_arr[2][2] = 50;
            j_arr[2][3] = 60;
            for (i = 0; i < 2; i++)
                sum += j_arr[0][i];
            for (i = 0; i < 3; i++)
                sum += j_arr[1][i];
            for (i = 0; i < 4; i++)
                sum += j_arr[2][i];
```

```
        Console.WriteLine("sum is :{0}",sum);
          Console.Read();
      }
   }
}
```

5. Write a Program in C# to demonstrate Array Out of Bound Exception using Try, Catch and Finally blocks

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

namespace lab5
{
   class DivNumbers
      {
      int result;
      DivNumbers()
      {
         result = 0;
      }
      public void division(int num1,int num2)
      {
         try
         {
            result = num1 / num2;
         }
         catch (DivideByZeroException e)
         {
            Console.WriteLine("Exception caught:{0}", e);
         }
         finally
         {
            Console.WriteLine("Result:{0}", result);
         }
      }
      static void Main(string[] args)
      {
         DivNumbers d = new DivNumbers();
         d.division(25, 0);
         Console.ReadLine();
      }
   }
}
```

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

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

```
namespace lab6
{
   class BC
   {
      public virtual void display()
      {
         System.Console.WriteLine("BC::Display");
      }
   }
   class DC : BC
   {
      public override void display()
      {
         System.Console.WriteLine("DC::Display");
      }
      class TC : DC
      {
         public override void display()
         {
            System.Console.WriteLine("TC::Display");
         }
      }
      class program
      {
         public static void Main(string[] args)
         {
            BC b;
            b = new BC();
            b.display();
            b = new DC();
            b.display();
            b = new TC();
            b.display();
            Console.ReadLine();
         }
      }
   }
}
```

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

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
delegate int NumberChanger(int n);
namespace lab7
{
   class TestDelegate
   {
      static int num = 10;
      public static int AddNum(int p)
      {
         num += p;
         return num;
      }
```

```
        public static int MulNum(int q)
        {
            num *= q;
            return num;
        }
        public static int getNum()
        {
            return num;
        }
        public static void Main(String[] args)
        {
            NumberChanger nc1 = new NumberChanger(AddNum);
            NumberChanger nc2 = new NumberChanger(MulNum);
            nc1(25);
            Console.WriteLine("value of num:" + getNum());
            nc2(5);
            Console.WriteLine("value of num:" + getNum());
            Console.ReadKey();

        }
    }
}
```

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 ConsoleApplication8
{
    abstract class shape
    {

    protected float r,l,b;
        public abstract float Area();
        public abstract float Circumference();
    }
    class Rectangle:shape
    {
        public void GetLB()
        {
            Console.Write("Enter length:");
            l = float.Parse(Console.ReadLine());
            Console.Write("Enter Breadth:");
            b = float.Parse(Console.ReadLine());
        }
        public override float  Area()
{
                return l*b;
        }
        public override float  Circumference()
{
                return 2*(l+b);
        }
    }
```

```
   class Circle:shape
   {
      public void GetRadius()
      {
         Console.Write("enter radius:");
         r=float.Parse(Console.ReadLine());
      }
      public override float  Area()
{
 return 3.14f*r*r;
      }
      public override float  Circumference()
{
            return 2*3.14f*r;
      }
   }
   class Mainclass
   {
      public static void Calculate(shape s)
      {

Console.WriteLine("Area:"+s.Area());
         Console.WriteLine("Circumference:"+s.Circumference());
      }
      static void Main(string[] args)
      {
         Rectangle R=new Rectangle();
         R.GetLB();
         Calculate(R);
         Console.WriteLine();
         Circle C=new Circle();
         C.GetRadius();
         Calculate(C);
         Console.ReadKey();
}

}
}
```

9. Write a program to Set & Get the Name & Age of a person using Properties of C# to illustrate the use of different properties in C#.

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

namespace lab17
{
     class student
   {
      int sno;
      string sname;
      public int stu_no
      {
         set
         {
```

```
            sno = value;
        }
        get
        {
            return sno;
        }
    }
    public string stu_name
    {
        set
        {
            sname = value;
        }
        get
        {
            return sname;
        }
    }
}
    class Program
    {
        static void Main(string[] args)
        {
            student xx = new student();
            xx.stu_no = 054;
            xx.stu_name = "sai sree";
            Console.WriteLine("student no={0} \n student name={1}", xx.stu_no, xx.stu_name);
            Console.Read();
        }
    }
}
```

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

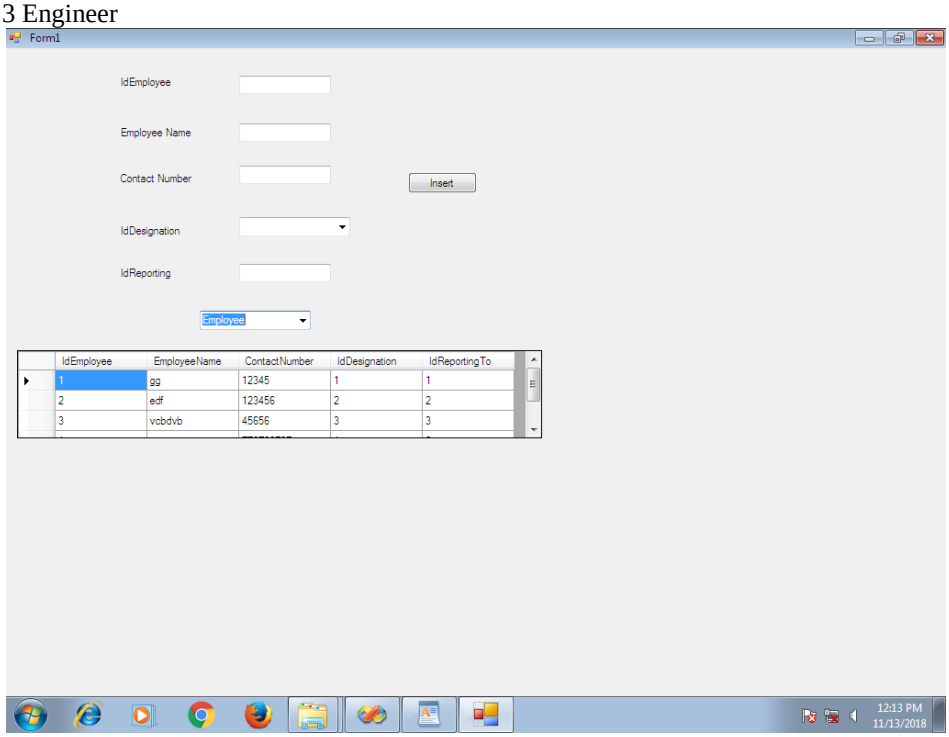
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication2
{
   class Program
   {
      static void Main(string[] args)
      {
         List<Dog> dogs = new List<Dog>();
         dogs.Add(new Dog("fido"));
         dogs.Add(new Dog("BOb"));
         dogs.Add(new Dog("Adam"));
         dogs.Sort();
         foreach (Dog dog in dogs)
            Console.WriteLine(dog.Describe());
         Console.ReadKey();


      }
```

```
    }
    interface IAnimal
    {
        string Describe();
        string Name
        {
            get;
            set;
        }
    }
    class Dog : IAnimal, IComparable
    {
        private string name;
        public Dog(string name)
        {
            this.Name = name;
        }
        public string Describe()
        {
            return "Hello I am a Dog and my name is" + this.Name;
        }
        public int CompareTo(object obj)
        {
            if (obj is IAnimal)
                return this.Name.CompareTo((obj as IAnimal).Name);
            return 0;
        }
        public string Name
        {
            get
            {
                return name;
}
            set
            {
                name = value;
            }
        }
    }
}
```

PART-B

I. 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

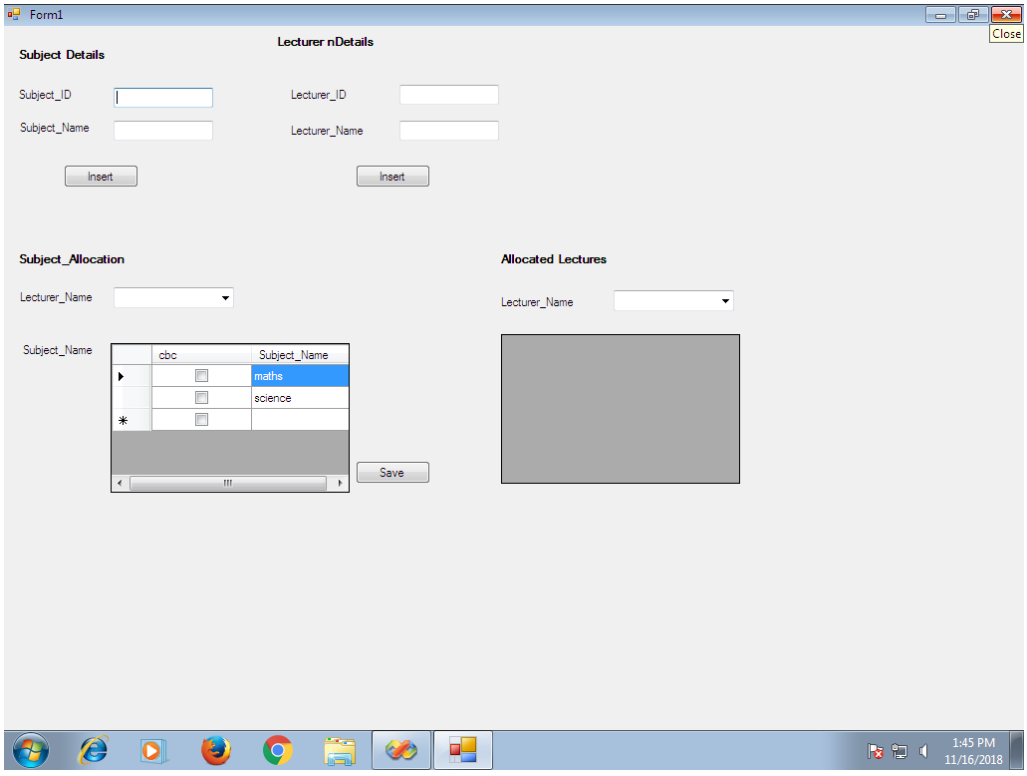


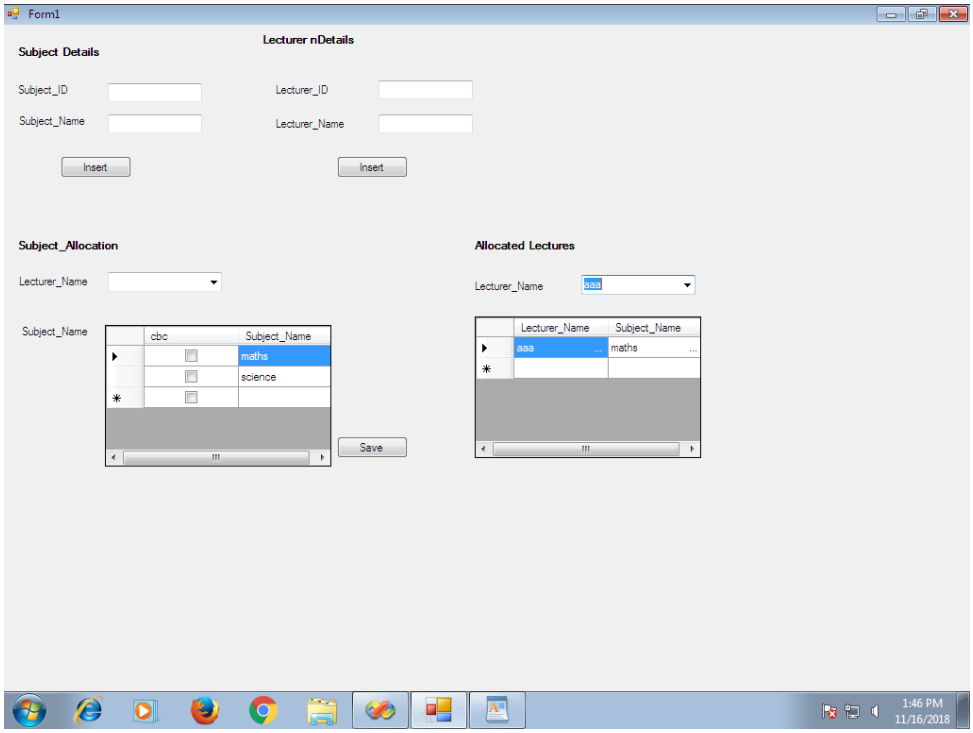

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;
namespace WindowsFormsApplication1
{
    public partial class Form1 : Form
    {
        SqlConnection con = new SqlConnection(@"Data
Source=.\SQLEXPRESS;AttachDbFilename=C:\Users\student\Documents\Visual Studio
2008\Projects\gowtham\WindowsFormsApplication1\WindowsFormsApplication1\Datab
ase1.mdf;Integrated Security=True;User Instance=True");
        SqlCommand cmd = new SqlCommand();
        SqlDataReader dr;
        SqlDataAdapter da;
        DataSet ds = new DataSet();
        DataTable dt = new DataTable();
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            cmd.Connection = con;
            loadlist();
```

```
        }
        public void loadlist()
        {
            con.Open();
            cmd.CommandText = "select * from tbl_designation";
            dr = cmd.ExecuteReader();
            if (dr.HasRows)
            {
                while (dr.Read())
                {
                    comboBox1.Items.Add(dr[0].ToString());
                    comboBox2.Items.Add(dr[1].ToString());
                }
            }
            con.Close();
        }
        private void button1_Click(object sender, EventArgs e)
        {
            con.Open();
            cmd.CommandText = "insert into EmployeeDetails values('" +
textBox1.Text + "','" + textBox2.Text + "','" + textBox3.Text + "','" +
comboBox1.SelectedItem.ToString() + "','" + textBox5.Text + "')";
            cmd.ExecuteNonQuery();
            cmd.Clone();
            MessageBox.Show("Record inserted");
            con.Close();
            textBox1.Text = "";
            textBox2.Text = "";
            textBox3.Text = "";
            textBox5.Text = "";
        }
        private void comboBox2_SelectedIndexChanged(object sender, EventArgs
e)
        {
            if (comboBox2.SelectedIndex == 0)
            {
                dt.Reset();
                con.Open();
                ds.Reset();
                ds.Tables.Add(dt);
                da = new SqlDataAdapter("select * from EmployeeDetails ",
con);
                da.Fill(dt);
                dataGridView1.DataSource = dt.DefaultView;
                con.Close();
            }
            else
            {
                con.Open();
                ds.Reset();
                ds.Tables.Add(dt);
                da = new SqlDataAdapter("select * from EmployeeDetails where
IdDesignation='" + comboBox2.SelectedIndex + "'", con);
                da.Fill(dt);
                dataGridView1.DataSource = dt.DefaultView;
                con.Close();
            }
```

```
            }
        }
}
```

2. 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





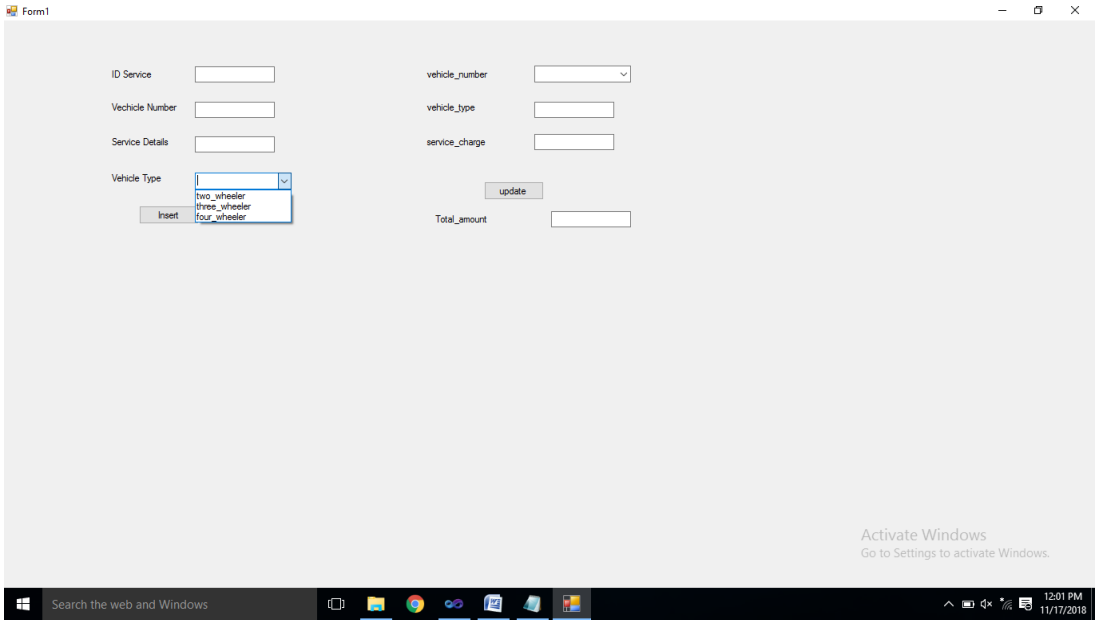

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
using System.Data.SqlClient;

namespace WindowsFormsApplication2
{
    public partial class Form1 : Form
    {
        SqlConnection con = new SqlConnection(@"Data
Source=.\SQLEXPRESS;AttachDbFilename=C:\Users\student\Documents\Visual Studio
2008\Projects\WindowsFormsApplication2\WindowsFormsApplication2\Database1.mdf
;Integrated Security=True;User Instance=True");
        SqlCommand cmd = new SqlCommand();
        SqlDataReader dr;
        SqlDataAdapter da;
        DataSet ds = new DataSet();
        DataTable dt = new DataTable();

        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
```

```
            dt.Reset();
            con.Open();
            ds.Reset();
            ds.Tables.Add(dt);
            da = new SqlDataAdapter("select Subject_Name from subject", con);
            da.Fill(dt);
            dataGridView1.DataSource = dt.DefaultView;
            con.Close();
            cmd.Connection = con;
            DataGridViewCheckBoxColumn cb = new DataGridViewCheckBoxColumn();
            cb.Name = "cbc";
            dataGridView1.Columns.Insert(0, cb);
            loadlist();



        }
        public void loadlist()
        {
            con.Open();
            cmd.CommandText = "select * from lecturer";
            dr = cmd.ExecuteReader();
            if (dr.HasRows)
            {
                while (dr.Read())
                {
                    comboBox1.Items.Add(dr[1].ToString());
                    comboBox2.Items.Add(dr[1].ToString());
                }
            }
            con.Close();
        }
        private void comboBox1_SelectedIndexChanged(object sender, EventArgs
e)
        {

        }

        private void button1_Click_1(object sender, EventArgs e)
        {
            con.Open();
            cmd.CommandText = "insert into subject values('" + textBox1.Text
+ "','" + textBox2.Text + "')";
            cmd.ExecuteNonQuery();
            cmd.Clone();
            MessageBox.Show("Record inserted");
            con.Close();
            textBox1.Text = "";
            textBox2.Text = "";
        }

        private void button2_Click(object sender, EventArgs e)
        {
            con.Open();
            cmd.CommandText = "insert into lecturer values('" + textBox3.Text
+ "','" + textBox4.Text + "')";
            cmd.ExecuteNonQuery();
```

```
            cmd.Clone();
            MessageBox.Show("Record inserted");
            con.Close();
            textBox3.Text = "";
            textBox4.Text = "";
        }

        private void comboBox2_SelectedIndexChanged(object sender, EventArgs
e)
        {
            DataSet ds1 = new DataSet();
            DataTable dt1 = new DataTable();

            con.Open();
            ds1.Reset();
            ds1.Tables.Add(dt1);
            SqlDataAdapter da1 = new SqlDataAdapter("select * from ls where
Lecturer_Name='" + comboBox2.SelectedItem.ToString() + "'", con);
            da1.Fill(dt1);
            dataGridView2.DataSource = dt1.DefaultView;
            con.Close();
        }


        private void button3_Click(object sender, EventArgs e)
        {
            int i = 0;

            foreach(DataGridViewRow row in dataGridView1.Rows)
            {
               bool iss = Convert.ToBoolean(row.Cells["cbc"].Value);
                if(iss)
                {
                    cmd.CommandText = "insert into ls
values('"+comboBox1.SelectedItem.ToString()+"','"+row.Cells[1].Value+"')";

                     con.Open();
                     cmd.ExecuteNonQuery();
                     con.Close();
                     MessageBox.Show("inserted successfully");
                }
            }
            i++;
        }
        }


    }
```

3. Consider the database db_VSS (Vehicle Service Station) consisting of the following tables:
tbl_VehicleTypes(IdVehicleType: int, VehicleType: string, ServiceCharge: int)
tbl_ServiceDetails(IdService: int, VehicleNumber: string, ServiceDetails: string, IdVehicleType: int)
Develop a suitable window application using C#.NET having following options.
1. Enter new Service Details for the Selected Vehicle Type (In a Combo Box).
2. Update the Existing Service Charges to Database.

3. Total Service Charges Collected for the Selected Vehicle (In a Combo box) with total amount displayed in a text box.
NOTE: tbl_VehicleType is a static table containing the following Rows in it.
1 Two Wheeler 500
2 Four Wheeler 1000
3 Three Wheeler 700




```
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 WindowsFormsApplication3
{
    public partial class Form1 : Form
    {
        SqlConnection con = new SqlConnection(@"Data
Source=.\SQLEXPRESS;AttachDbFilename=c:\users\gowtham\documents\visual studio
2010\Projects\WindowsFormsApplication3\WindowsFormsApplication3\Database1.mdf;Integrated
Security=True;User Instance=True");
        SqlCommand cmd = new SqlCommand();
        SqlDataReader dr;
        SqlDataAdapter da;
        DataSet ds = new DataSet();
        DataTable dt = new DataTable();

        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
```

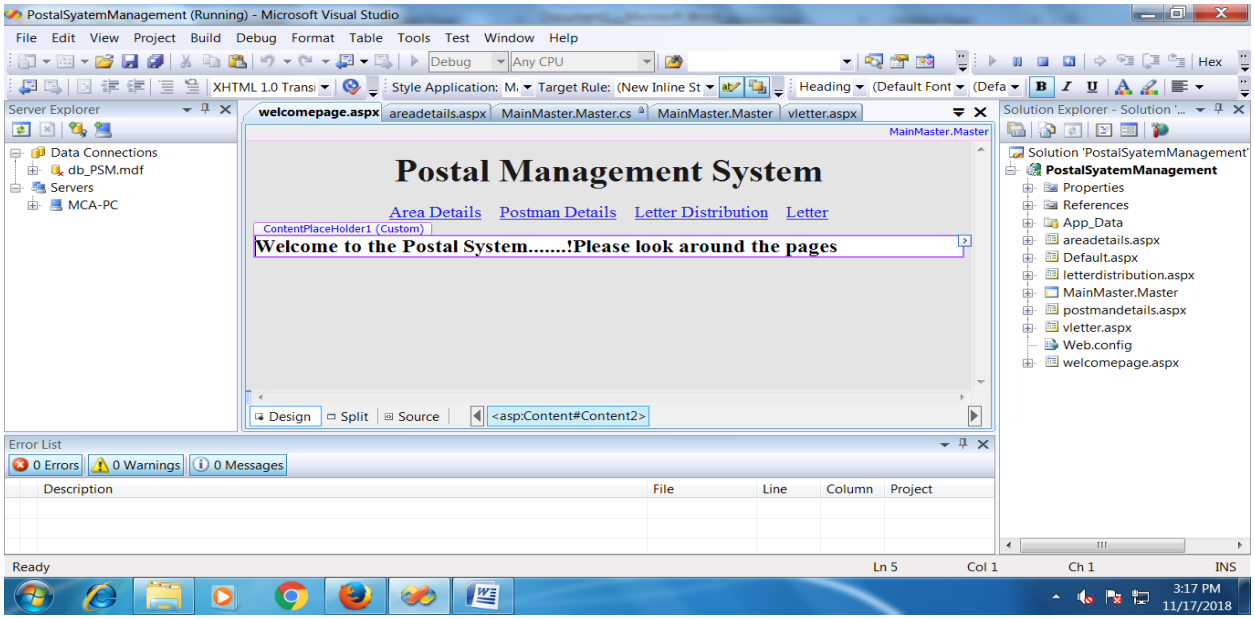
```
        {
            cmd.Connection = con;
            loadlist();

        }
        public void loadlist()
        {
            con.Open();
            cmd.CommandText = "select * from vehicle";
            dr = cmd.ExecuteReader();
            if (dr.HasRows)
            {
                while (dr.Read())
                {
                    comboBox1.Items.Add(dr[1].ToString());


                }
            }
            con.Close();
            con.Open();
            cmd.CommandText = "select * from service";
            dr = cmd.ExecuteReader();
            if (dr.HasRows)
            {
                while (dr.Read())
                {
                    comboBox3.Items.Add(dr[1].ToString());
                }
            }
            con.Close();

        }

        private void button1_Click(object sender, EventArgs e)
        {
            con.Open();
            cmd.CommandText = "insert into service values('" + textBox1.Text + "','" +
textBox2.Text + "','" + textBox3.Text + "','" + comboBox1.SelectedItem.ToString() + "')";
            cmd.ExecuteNonQuery();
            cmd.Clone();
            MessageBox.Show("Record inserted");
            con.Close();
            textBox1.Text = "";
            textBox2.Text = "";
            textBox3.Text = "";

        }
        String a,tc;
        private void Update_Click(object sender, EventArgs e)
        {
            con.Open();
            cmd.CommandText = "select * from vehicle where vehicle_type='" +
textBox6.Text + "'";
            dr = cmd.ExecuteReader();
            if (dr.HasRows)
            {
                while (dr.Read())
```

```
                {
                  a = dr[2].ToString();
                }
            }
            con.Close();
            textBox5.Text = Convert.ToString(Convert.ToInt64(textBox4.Text) +
Convert.ToInt64(a));

           }

        private void comboBox3_SelectedIndexChanged(object sender, EventArgs e)
        {
            con.Open();
            cmd.CommandText = "select * from service where vehicle_no='" +
comboBox3.SelectedItem.ToString() + "'";
            dr = cmd.ExecuteReader();
            if (dr.HasRows)
            {
                while (dr.Read())
                {
                    textBox6.Text = dr[3].ToString();
                }
            }
            con.Close();


        }

    }
}
```

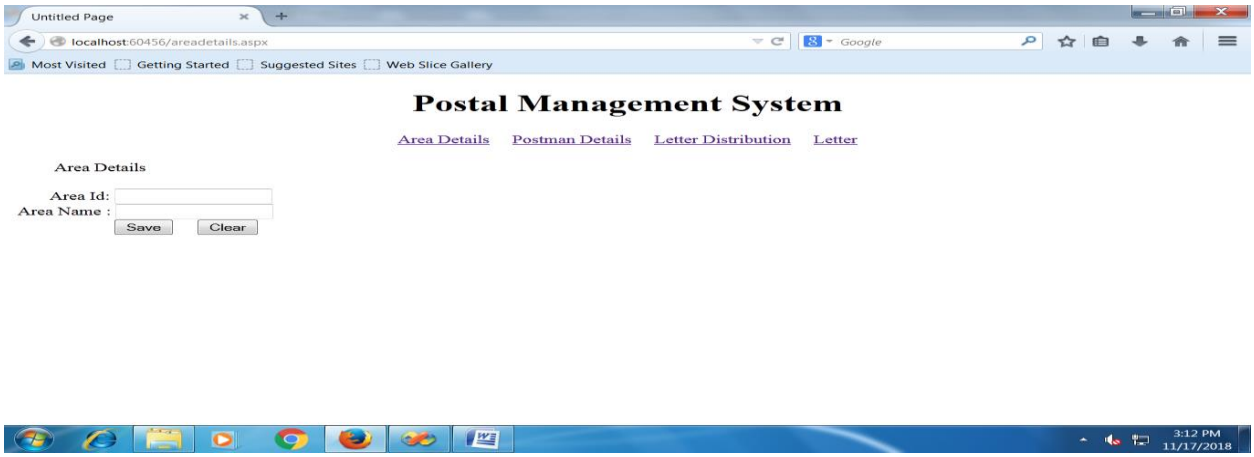
4.Develop a web application using C#.NET and ASP.NET for the Complaint Management System. The master page should contain the hyper links for Add Engineer, Complaint Registration, Complaint Allocation

1.Master page

```
<%@ Page Language="C#" MasterPageFile="~/MainMaster.Master"
AutoEventWireup="true" CodeBehind="welcomepage.aspx.cs"
Inherits="PostalSyatemManagement.welcomepage" Title="Untitled Page" %>

<asp:Content ID="Content1" ContentPlaceHolderID="head" runat="server">
</asp:Content>
<asp:Content ID="Content2" ContentPlaceHolderID="ContentPlaceHolder1"
runat="server">
<h3> Welcome to the Postal System.......!Please look around the pages</h3>
</asp:Content>
```



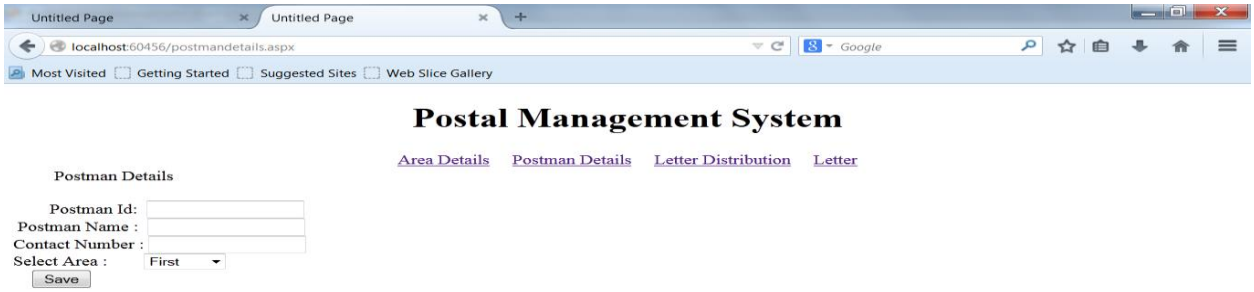
2.AREA details




```
<%@ Page Language="C#" MasterPageFile="~/MainMaster.Master"
AutoEventWireup="true" CodeBehind="areadetails.aspx.cs"
Inherits="PostalSyatemManagement.WebForm1" Title="Untitled Page" %>
<asp:Content ID="Content1" ContentPlaceHolderID="head" runat="server">
</asp:Content>
<asp:Content ID="Content2" ContentPlaceHolderID="ContentPlaceHolder1"
runat="server">
    <br />
            
    <asp:Label ID="Label1" runat="server" Text="Area Details"></asp:Label>

    <br />
    <br />
       

    <asp:Label ID="Label2" runat="server" Text="Area Id: "></asp:Label>
    <asp:TextBox ID="idArea" runat="server"></asp:TextBox>
```

```
       
    <br />
 <asp:Label ID="Label3" runat="server" Text="Area Name : "></asp:Label>
    <asp:TextBox ID="AreaName" runat="server"></asp:TextBox>

   <br />
             
;       
 <asp:Button ID="btn_save" runat="server" Text="Save"
    onclick="btn_save_Click" />
       
    <asp:Button ID="btn_clear" runat="server" Text="Clear" />
<br />
    <br />
    <asp:Label ID="successid" runat="server" Text="Successfully
inserted...!!!"
        Visible="False"></asp:Label>
<asp:SqlDataSource ID="SqlDataSource1" runat="server"
    ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
    SelectCommand="SELECT * FROM [tbl_AreaDetails]"></asp:SqlDataSource>
</asp:Content>
```

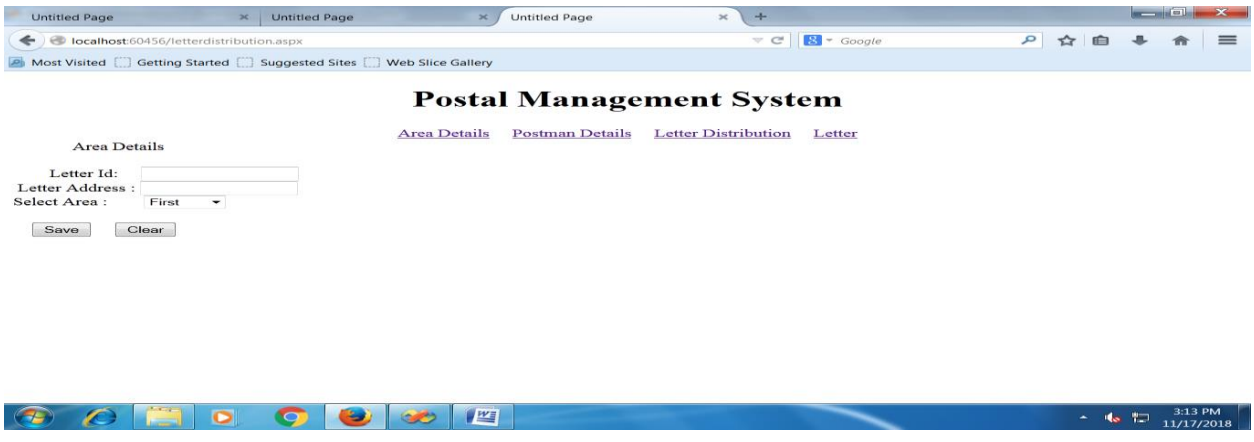
3.Postman details




```
<%@ Page Language="C#" MasterPageFile="~/MainMaster.Master"
AutoEventWireup="true" CodeBehind="postmandetails.aspx.cs"
Inherits="PostalSyatemManagement.WebForm2" Title="Untitled Page" %>
<asp:Content ID="Content1" ContentPlaceHolderID="head" runat="server">
</asp:Content>
<asp:Content ID="Content2" ContentPlaceHolderID="ContentPlaceHolder1"
runat="server">
            
    <asp:Label ID="Label1" runat="server" Text="Postman Details"></asp:Label>

    <br />
    <br />
       

    <asp:Label ID="Label2" runat="server" Text="Postman Id: "></asp:Label>
```

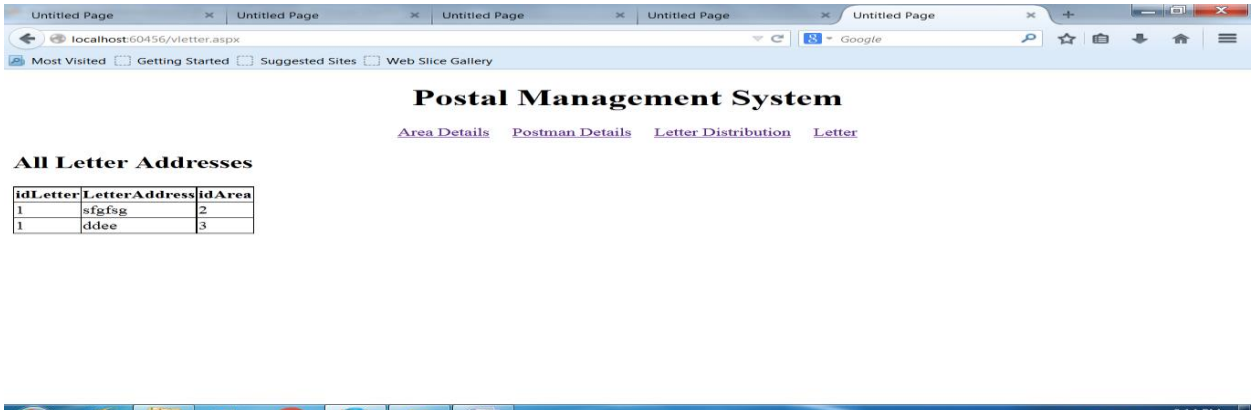
```
     <asp:TextBox ID="idPostman" runat="server"></asp:TextBox>
       
    <br />
 <asp:Label ID="Label3" runat="server" Text="Postman Name :
"></asp:Label>
     <asp:TextBox ID="PostmanName" runat="server"></asp:TextBox>

   
    <br />
    <asp:Label ID="Label4" runat="server" Text="Contact Number :
"></asp:Label>
    <asp:TextBox ID="ContactNumber" runat="server"></asp:TextBox>

    <br />
    <asp:Label ID="Label5" runat="server" Text="Select Area : "></asp:Label>
          
    <asp:DropDownList ID="area" runat="server">
    <asp:ListItem Value="1">First</asp:ListItem>
    <asp:ListItem Value="2">Second</asp:ListItem>
    <asp:ListItem Value="3">Third</asp:ListItem>
    <asp:ListItem Value="4">Fourth</asp:ListItem>
    </asp:DropDownList>

<br />
   
    <asp:Button ID="btn_save" runat="server" Text="Save"
onclick="btn_save_Click" />
       
    <asp:Button ID="btn_clear" runat="server" Text="Clear" Visible="False" />
    <br />
    <asp:SqlDataSource ID="SqlDataSource1" runat="server"
        ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
        SelectCommand="SELECT * FROM
[tbl_PostmanDetails]"></asp:SqlDataSource>
    <asp:Label ID="successid" runat="server" Text="Successfully
inserted...!!!"
        Visible="False"></asp:Label>
</asp:Content>
```

4.Letter details



```
<%@ Page Language="C#" MasterPageFile="~/MainMaster.Master"
AutoEventWireup="true" CodeBehind="letterdistribution.aspx.cs"
Inherits="PostalSyatemManagement.WebForm3" Title="Untitled Page" %>
<asp:Content ID="Content1" ContentPlaceHolderID="head" runat="server">
</asp:Content>
<asp:Content ID="Content2" ContentPlaceHolderID="ContentPlaceHolder1"
runat="server">
                
    <asp:Label ID="Label1" runat="server" Text="Area Details"></asp:Label>

    <br />
    <br />
       

    <asp:Label ID="Label2" runat="server" Text="Letter Id: "></asp:Label>
       
    <asp:TextBox ID="idLetter" runat="server"></asp:TextBox>
       
    <br />
 <asp:Label ID="Label3" runat="server" Text="Letter Address :
"></asp:Label>
    <asp:TextBox ID="letterAddress" runat="server"></asp:TextBox>

   
    <br />
    <asp:Label ID="Label5" runat="server" Text="Select Area : "></asp:Label>
          
    <asp:DropDownList ID="area" runat="server">
    <asp:ListItem Value="1">First</asp:ListItem>
    <asp:ListItem Value="2">Second</asp:ListItem>
    <asp:ListItem Value="3">Third</asp:ListItem>
    <asp:ListItem Value="4">Fourth</asp:ListItem>
    </asp:DropDownList>
<br />
<br />
   
    <asp:Button ID="btn_save" runat="server" Text="Save"
        onclick="btn_save_Click1" />
       
    <asp:Button ID="btn_clear" runat="server" Text="Clear"
        onclick="btn_clear_Click" />
    <br />
    <asp:Label ID="Successid" runat="server" Text="Successfully
inserted...!!!"
        Visible="False"></asp:Label>
    <asp:SqlDataSource ID="SqlDataSource1" runat="server"
        ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
        SelectCommand="SELECT * FROM [tbl_AreaLetters]"></asp:SqlDataSource>
    <br />
</asp:Content>
```

5.Letter viewing



```
<%@ Page Language="C#" MasterPageFile="~/MainMaster.Master"
AutoEventWireup="true" CodeBehind="vletter.aspx.cs"
Inherits="PostalSyatemManagement.WebForm4" Title="Untitled Page" %>
<asp:Content ID="Content1" ContentPlaceHolderID="head" runat="server">
</asp:Content>
<asp:Content ID="Content2" ContentPlaceHolderID="ContentPlaceHolder1"
runat="server">
<div><h2>All Letter Addresses</h2></div>
    <asp:GridView ID="GridView1" runat="server" AutoGenerateColumns="False"
        DataSourceID="SqlDataSource2">
        <Columns>
            <asp:BoundField DataField="idLetter" HeaderText="idLetter"
                SortExpression="idLetter" />
            <asp:BoundField DataField="LetterAddress"
HeaderText="LetterAddress"
                SortExpression="LetterAddress" />
            <asp:BoundField DataField="idArea" HeaderText="idArea"
                SortExpression="idArea" />
        </Columns>
    </asp:GridView>
    <asp:SqlDataSource ID="SqlDataSource2" runat="server"
        ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
        SelectCommand="SELECT * FROM [tbl_AreaLetters]"></asp:SqlDataSource>
</asp:Content>
```

5.Develop the suitable content pages for the above created 4 hyper links with the following details:

1. Enter New Engineers belonging to the selected department (displayed in a combo box)
2. Register a new Complaint with a submit button.
3. View all registered complaints & allocate to the corresponding department (displayed in a combo box)
4. Display all the Complaints (In a Grid) to be handled by the selected Engineer (In a Combo box)

NOTE: Consider the table tbl_Departments as a static table containing some pre-entered departments,which are displayed in all the remaining modules.

Steps:

New->Asp.net web forms project->Next->Give a name and Click on finish

Once project is opened Right Click on Project Name ->Select Add-> New Files ->Select Web Form -> Give a name ->click New

In this way create 3 files : complaintRegistration.aspx, complaintAllocation.aspx , viewComplaint.aspx

Coding for Default.aspx :

```
<%@ Page Language="C#" Inherits="aspNet5.Default" %>
 <%@ Import Namespace="System.Data" %>
 <%@ Import Namespace="System" %>
 <%@ Import Namespace="MySql.Data.MySqlClient" %>

<!DOCTYPE html>
 <html>
 <head runat="server">
     <title>Complaint Management System</title>
     script runat="server">
 String ConnectionString="server="+"localhost"+";"+"Database="+"CMS"
+";"+"uid="+"root"+";"+"Password="+"India123"+";";
         private void AddEngineer(Object sender,EventArgs e)
         {
             try
             {

                     MySqlConnection conn=new
MySqlConnection(ConnectionString);
                     conn.Open();
                     MySqlCommand cmd = conn.CreateCommand();
                     cmd.CommandText="insert into engineer
values("+eid.Text+",'"+ename.Text+"','"+contact.Text+"',"+depertment_id.Text+
")";
                     cmd.ExecuteNonQuery();
                     Label1.Text = "New Engineer Added Successfully";
                     conn.Close();
             }catch(Exception )
             {
                  Label1.Text = "Id Already existed";
             }
         }
     </script>

</head>
 <body>
 <center>
         <table cellpadding="10" border="0">
         <tr>
             <th width="300"><a href="Default.aspx">Add Engineer</a></th>
             th width="300"><a href="complaintRegistration.aspx">Complaint
Registration</a></th>
             th width="300"><a href="complaintAllocation.aspx">Complaint
Allocation</a></th>
             th width="100"><a href="viewComplaint.aspx">View
Complaints</a></th>
         </tr>
         </table>
 <form id="form1" runat="server">
           <h1>Add a New Engineer</h1>
         asp:Label ID="Label1" runat="server" Text=""></asp:Label><br />
```

```
       <label>Enter engineer ID</label><asp:TextBox id="eid" runat="server"
/><br/>
       <label>Enter Name</label><asp:TextBox id="ename" runat="server"
/><br/>
       <label>Enter Contact</label><asp:TextBox id="contact" runat="server"
/><br/>
       <label>Select Department Name</label><asp:DropDownList
id="depertment_id" AutoPostBack="True" runat="server">
                    <asp:ListItem Selected="True" Value="1"> Road
</asp:ListItem>
                    asp:ListItem Value="2"> Bridge</asp:ListItem>
                    asp:ListItem Value="3"> Water</asp:ListItem>
                    asp:ListItem Value="4"> Power </asp:ListItem>
        </asp:DropDownList><br/>
        <asp:Button id="button1" runat="server" Text="AddEngineer"
onClick="AddEngineer" />
 </form>
 </center>
 </body>
 </html>

Coding for complaintRegistration.aspx:
<%@ Page Language="C#" Inherits="aspNet5.Default" %>
 <%@ Import Namespace="System.Data" %>
 <%@ Import Namespace="System" %>
 <%@ Import Namespace="MySql.Data.MySqlClient" %>

<!DOCTYPE html>
 <html>
 <head runat="server">
     <title>Complaint Management System</title>
     script runat="server">
         String ConnectionString="server="+"localhost"+";"+"Database="+"CMS"
+";"+"uid="+"root"+";"+"Password="+"India123"+";";
         private void makeComplaint(Object sender,EventArgs e)
         {
             try
             {


                 MySqlConnection conn=new MySqlConnection(ConnectionString);
                 conn.Open();
                 MySqlCommand cmd = conn.CreateCommand();
                 cmd.CommandText="insert into registered_complaint
values("+comp_id.Text+",'"+detail.Text+"')";
                 cmd.ExecuteNonQuery();
                 Label1.Text = "Complaint registered successfully";
                 conn.Close();

             }catch(Exception )
             {
                  Label1.Text = "Complaint id Already existed";
             }
         }
     </script>
 </head>
 <body>
```

```
 <center>
         <table cellpadding="10" border="0">
         <tr>
             <th width="300"><a href="Default.aspx">Add Engineer</a></th>
             th width="300"><a href="complaintRegistration.aspx">Complaint
Registration</a></th>
             th width="300"><a href="complaintAllocation.aspx">Complaint
Allocation</a></th>
             th width="100"><a href="viewComplaint.aspx">View
Complaints</a></th>
         </tr>
         </table>
 <form id="form1" runat="server">
              <h1>Register New Complaint</h1>
                 asp:Label ID="Label1" runat="server" Text=""></asp:Label><br
/>
        <table>
        <tr><td><label>Complaint ID</label><asp:TextBox id="comp_id"
runat="server" /></td></tr>
         tr><td><label>Enter description</label><asp:TextBox id="detail"
TextMode="multiline" Columns="50" Rows="5" runat="server" /></td></tr>
        tr> <td><asp:Button id="button1" runat="server" Text="Submit"
onClick="makeComplaint" /></td></tr>
        </table>
 </form>
 </center>
 </body>
 </html>
```

Coding for complaintAllocation.aspx :

```
<%@ Page Language="C#" Inherits="aspNet5.Default" %>
 <%@ Import Namespace="System.Data" %>
 <%@ Import Namespace="System" %>
 <%@ Import Namespace="MySql.Data.MySqlClient" %>

<!DOCTYPE html>
 <html>
 <head runat="server">
     <title>CMS</title>
     script runat="server">
         String ConnectionString="server="+"localhost"+";"+"Database="+"CMS"
+";"+"uid="+"root"+";"+"Password="+"India123"+";";
         private void Page_Load(Object sender,EventArgs e)
         {
            MySqlConnection conn=new MySqlConnection(ConnectionString);
             conn.Open();
             String qry="select * from registered_complaint";
             MySqlDataAdapter sd=new MySqlDataAdapter(qry,conn);
             DataSet ds=new DataSet();
             sd.Fill(ds,"output");
             conn.Close();
             Complaint.DataSource = ds.Tables["output"];
             Complaint.DataBind();
         }
```

```
          private void allocateComplaint(Object sender,EventArgs e)
         {
             try
             {

                 MySqlConnection conn=new MySqlConnection(ConnectionString);
                 conn.Open();
                 MySqlCommand cmd = conn.CreateCommand();
                 cmd.CommandText="insert into department_complaint
values("+depart_id.Text+",'"+comp_id.Text+"')";
                 cmd.ExecuteNonQuery();
                 Label1.Text = "Complaint allocated successfully";
                 conn.Close();
             }catch(Exception )
             {
                  Label1.Text = "Complaint id Already existed";
             }
         }
     </script>
 </head>
 <body>
 <center>
 <table cellpadding="10" border="0"><tr>
             <th width="300"><a href="Default.aspx">Add Engineer</a></th>
             th width="300"><a href="complaintRegistration.aspx">Complaint
Registration</a></th>
             th width="300"><a href="complaintAllocation.aspx">Complaint
Allocation</a></th>
             th width="100"><a href="viewComplaint.aspx">View
Complaints</a></th>
 </tr>
 </table>

 <form id="form1" runat="server">
                 <h1>Allocate complaint </h1>
                 asp:Label ID="Label1" runat="server" Text=""></asp:Label><br
/>
 <table>
 <tr><th>Enter Complaint ID</th> <th>Select Department</th>
<th>Allocate</th></tr>
             tr><td><asp:TextBox id="comp_id" runat="server" /></td>
                 td><asp:DropDownList id="depart_id" AutoPostBack="True"
runat="server">
                   <asp:ListItem Selected="True" Value="1"> Road
</asp:ListItem>
                   asp:ListItem Value="2"> Bridge</asp:ListItem>
                   asp:ListItem Value="3"> Water</asp:ListItem>
                   asp:ListItem Value="4"> Power </asp:ListItem>
                  </asp:DropDownList></td>
         td><asp:Button id="button1" runat="server" Text="Allocate Complaint"
OnClick="allocateComplaint"/></td></tr>
  </table>
 </form>
             asp:DataGrid runat="server" id="Complaint" />
 </center>
 </body>
```

```
 </html>
```

Coding for viewComplaint.aspx :

```
<%@ Page Language="C#" %>
 <%@ Import Namespace="System.Data" %>
 <%@ Import Namespace="System" %>
 <%@ Import Namespace="MySql.Data.MySqlClient" %>

<!DOCTYPE html>
 <html>
 <head runat="server">
     <title>viewComplaint</title>
     script runat="server">
         String ConnectionString="server="+"localhost"+";"+"Database="+"CMS"
+";"+"uid="+"root"+";"+"Password="+"India123"+";";
         private void Page_Load(Object sender,EventArgs e)
         {
             MySqlConnection conn = new MySqlConnection(ConnectionString);
             conn.Open();
             String qry="select * from engineer";
             MySqlDataAdapter sd=new MySqlDataAdapter(qry,conn);
             DataTable dt = new DataTable();
             sd.Fill(dt);
             DropDownList1.DataSource = dt;
             DropDownList1.DataBind();
             DropDownList1.DataTextField = "name";
             DropDownList1.DataBind();

         }
         private void viewComplaint(Object sender,EventArgs e)
         {
             try
             {
                 MySqlConnection conn = new
MySqlConnection(ConnectionString);
                 conn.Open();
                 String qry = "select * from registered_complaint where
complaint_id in(select comp_id from department_complaint where department_id
in(select depart_id from engineer where name='" + DropDownList1.SelectedValue
+ "'))";
                 MySqlDataAdapter sd=new MySqlDataAdapter(qry,conn);
                 DataSet ds=new DataSet();
                 sd.Fill(ds,"output");
                 conn.Close();
                 GridView1.DataSource = ds.Tables["output"];
                 GridView1.DataBind();
                 Label1.Text = "record found";
             }catch(Exception )
             {
                  Label1.Text = "Data not found";
             }


         }
       </script>
```

```
 </head>
 <body>
         <center>
 <table cellpadding="10" border="0">
 <tr>
             <th width="300"><a href="Default.aspx">Add Engineer</a></th>
             th width="300"><a href="complaintRegistration.aspx">Complaint
Registration</a></th>
             th width="300"><a href="complaintAllocation.aspx">Complaint
Allocation</a></th>
             th width="100"><a href="viewComplaint.aspx">View
Complaints</a></th>
 </tr>
 </table>
     form id="form1" runat="server">
         <asp:DropDownList ID="DropDownList1" runat="server">
 </asp:DropDownList>
         <br />
          <asp:Label ID="Label1" runat="server" Text=""></asp:Label><br />
         <asp:Button ID="Button1" runat="server" Text="View Complaint"
 Style="height: 26px" OnClick="viewComplaint"/>
         <br />
         <br />
         <asp:GridView ID="GridView1" runat="server" BackColor="White"
BorderColor="#999999"
             BorderStyle="None" BorderWidth="1px" CellPadding="3"
GridLines="Vertical">  </asp:GridView>
         </form>
              </center>
 </body>
 </html>
```

Table Structure :

```
deepak@deepak-HP-Notebook:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 25
Server version: 5.7.24-0ubuntu0.16.04.1 (Ubuntu)

Copyright (c) 2000, 2018, Oracle and/or its affiliates. All rights reserved.

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use CMS;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+----------------------+
| Tables_in_CMS        |
+----------------------+
| department           |
| department_complaint |
| engineer             |
| registered_complaint |
+----------------------+
4 rows in set (0.00 sec)

mysql> desc department;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| dept_id   | int(20)     | NO   | PRI | NULL    |       |
| dept_name | varchar(30) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql>
```
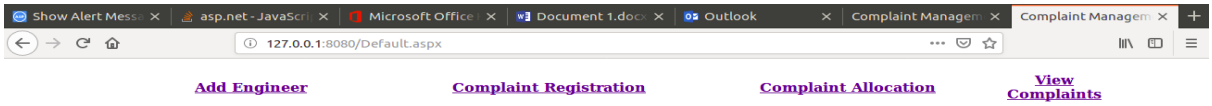

Department Table : Insert data before

```
| depart_id   | int(20)     | YES  | MUL | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> desc department;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| dept_id   | int(20)     | NO   | PRI | NULL    |       |
| dept_name | varchar(30) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> select * from department;
Empty set (0.00 sec)

mysql> insert into department values(1,'Road');
Query OK, 1 row affected (0.05 sec)

mysql> insert into department values(2,'Bridge');
Query OK, 1 row affected (0.03 sec)

mysql> insert into department values(3,'Water');
Query OK, 1 row affected (0.04 sec)

mysql> insert into department values(4,'Power');
Query OK, 1 row affected (0.04 sec)

mysql> select * from engineer;
Empty set (0.00 sec)

mysql> select * from department;
+---------+-----------+
| dept_id | dept_name |
+---------+-----------+
|       1 | Road      |
|       2 | Bridge    |
|       3 | Water     |
|       4 | Power     |
+---------+-----------+
4 rows in set (0.00 sec)

mysql>
```

```
|           2 | Raamu | 9685741258 |         1 |
+-------------+-------+------------+-----------+
2 rows in set (0.00 sec)

mysql> desc engineer;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| engineer_id | int(30)     | NO   | PRI | NULL    |       |
| name        | varchar(50) | YES  |     | NULL    |       |
| contact     | varchar(10) | YES  |     | NULL    |       |
| depart_id   | int(20)     | YES  | MUL | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> desc department;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| dept_id   | int(20)     | NO   | PRI | NULL    |       |
| dept_name | varchar(30) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc department_complaint;
+---------------+---------+------+-----+---------+-------+
| Field         | Type    | Null | Key | Default | Extra |
+---------------+---------+------+-----+---------+-------+
| department_id | int(20) | YES  | MUL | NULL    |       |
| comp_id       | int(20) | YES  | MUL | NULL    |       |
+---------------+---------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc registered_complaint;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| complaint_id | int(20)      | NO   | PRI | NULL    |       |
| details      | varchar(100) | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql>
```

Output :



Add Engineer Complaint Registration Complaint Allocation View Complaints

Add a New Engineer

New Engineer Added Successfully

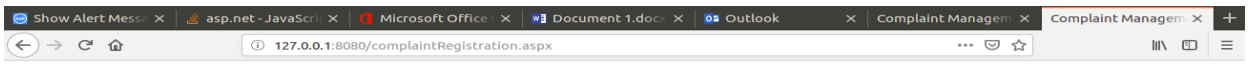
Enter engineer ID: 1

Enter Name: Ravi

Enter Contact: 9685741526

Select Department Name: Power

AddEngineer



Add Engineer Complaint Registration Complaint Allocation View Complaints

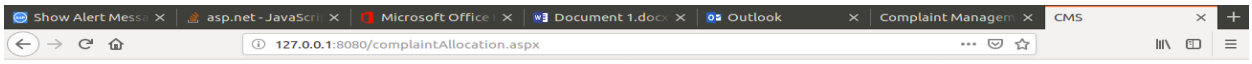
Register New Complaint

Complaint registered successfully

Complaint ID: 1

Enter description: There is no power in electronic city.

Submit



Add Engineer Complaint Registration Complaint Allocation View Complaints

Allocate complaint

Complaint allocated successfully

Enter Complaint ID	Select Department	Allocate
2	Water	Allocate Complaint

complaint_id	details
1	There is no power in electronic city.
2	We are facing water problem in Electronic city.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Microsoft Office
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127.0.0.1:8080/viewComplaint.aspx
Add Engineer
Complaint Registration
Complaint Allocation
View Complaints
Nagaraj
record found
View Complaint
complaint_id
details
2
We are facing water problem in Electronic city.