LEEDS BECKETT UNIVERSITY

The British College
KATHMANDU

Coursework Submission Coversheet
(individual coursework only)

The British College

Faculty of Arts, Environment and Technology

LBU Student Id: c7210593

For checking by the student:

Please ensure all information is complete and correct and attach this form securely to the front of your work before posting it in a coursework collection box.

Award name: Bsc Hons in Computing

Module code:

Module name: Advance Software Engineering A (ASE)

Module run: 2019

Coursework title: Bug Tracking System

Due Date: 17/5/2019

Module leader: (In LBU): Duncan Mullier

Module tutor: (In TBC): Resham Pun

TURNITIN Checked: YES NO ***(please circle)***

Submission date& time: Date: 17/5/2019 Time: Before noon

Total Word Count: □ **Total Number of Pages (including this front sheet):** □

In submitting this form with your assignment, you make the following declaration:

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Teacher's Feedback

Teacher's Signature: ________________________________ **Date: ________________**

THE BRITSH COLLEGE

SUBMITTED BY: SABINA BHANDARI

L6(Bsc.Hons)

5/17/2019

SUBMITTED TO: RESHAM PUN

Module Tutor

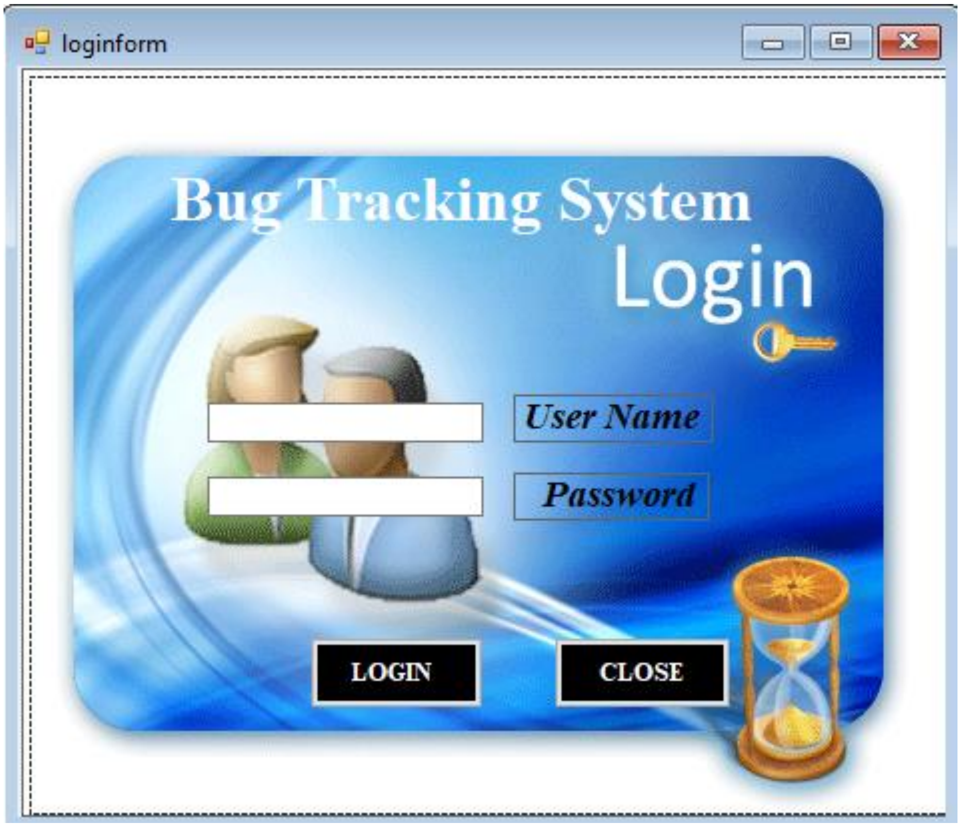
Introduction:

Bug Tracking Application is used to aid the software development process. It is used for keeping track of reported software bugs in software development projects along with their solution. It is also known as a type of issue tracking system. Those system which are used by most open source software projects only allow end users for entering bug reports directly by various bug tracking application.

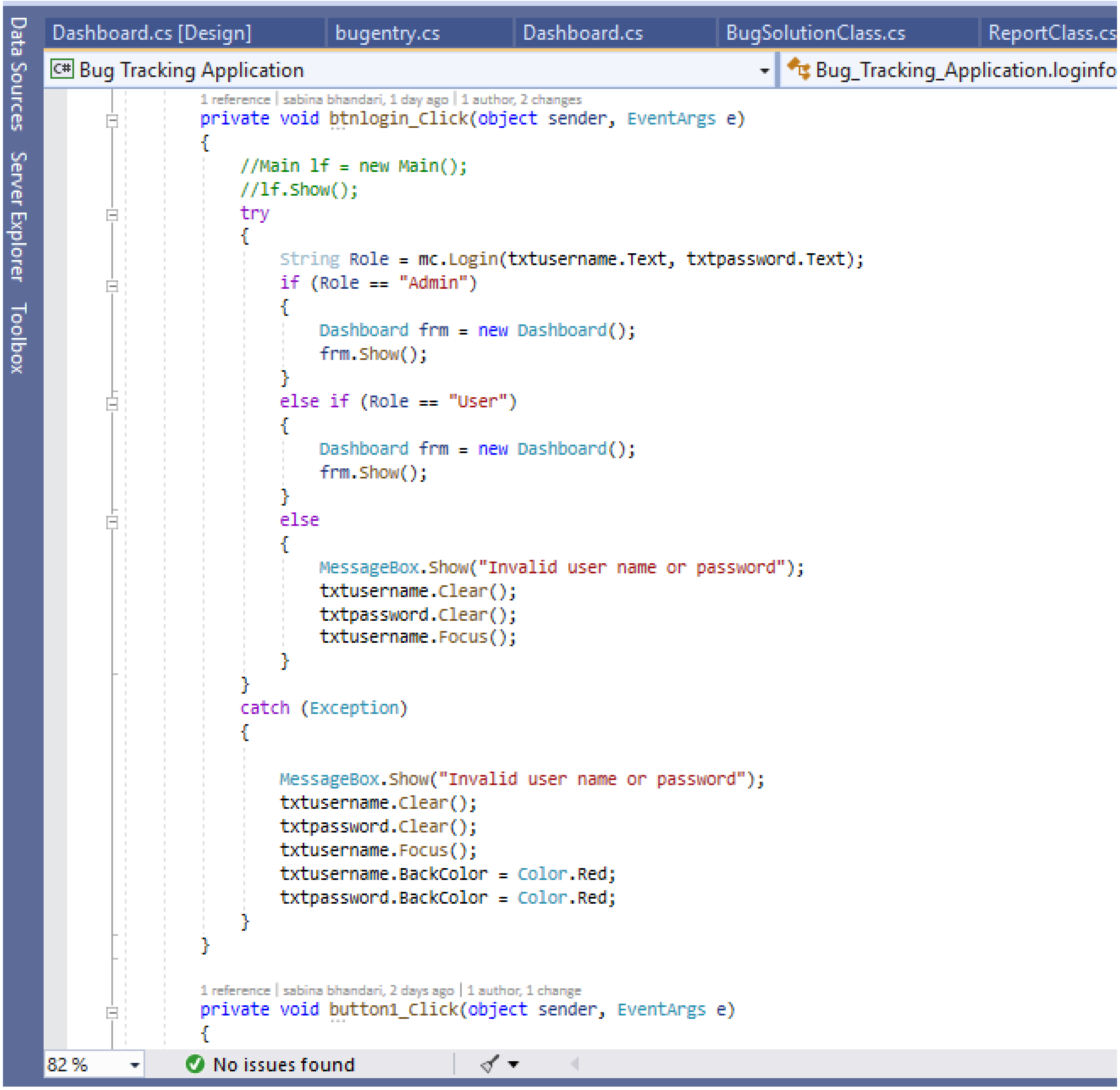
Bug Tracking Application:

Login Page:

In this application, login forms help to enter to dashboard of system for adding all the information.

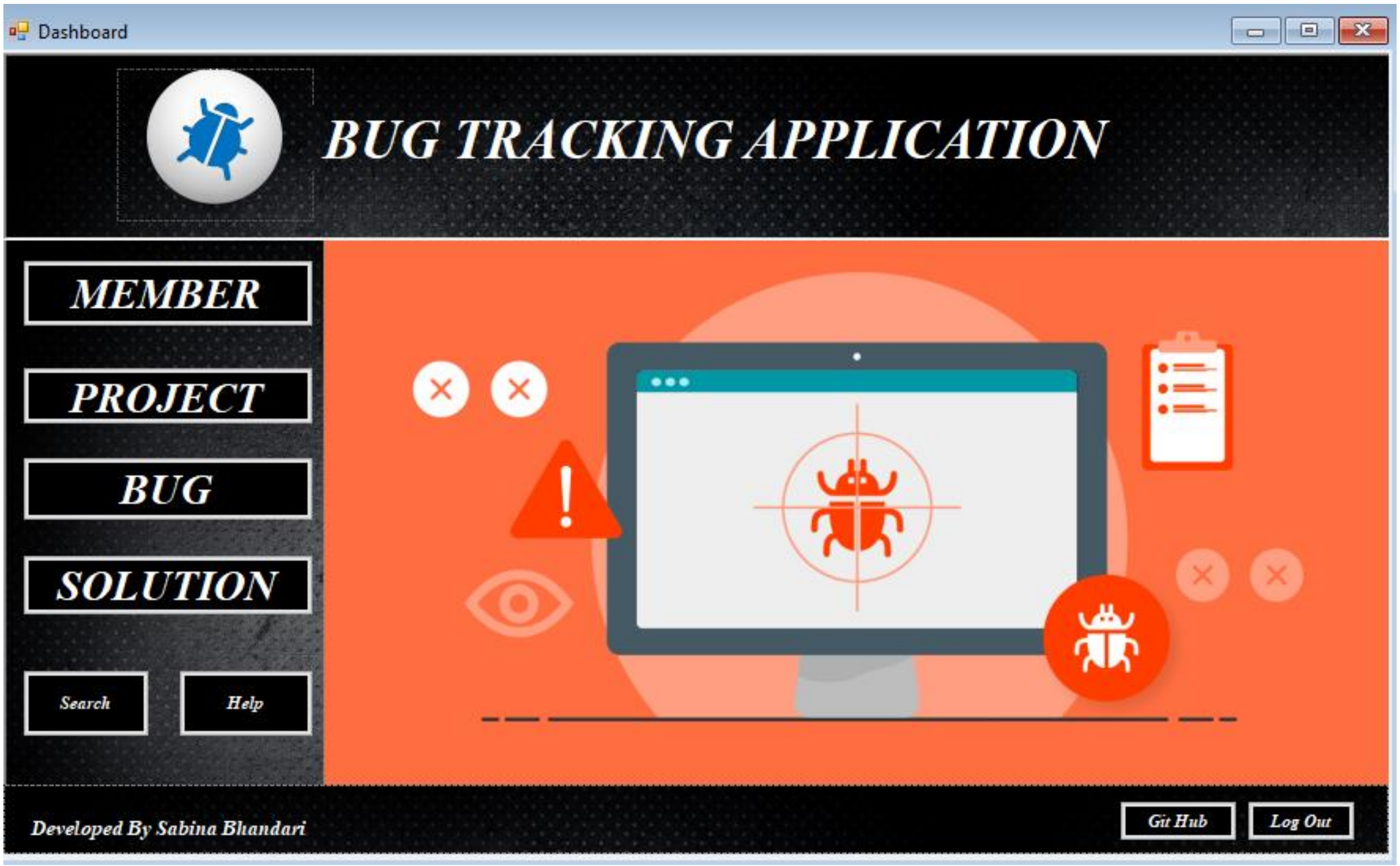


Code of Login Form

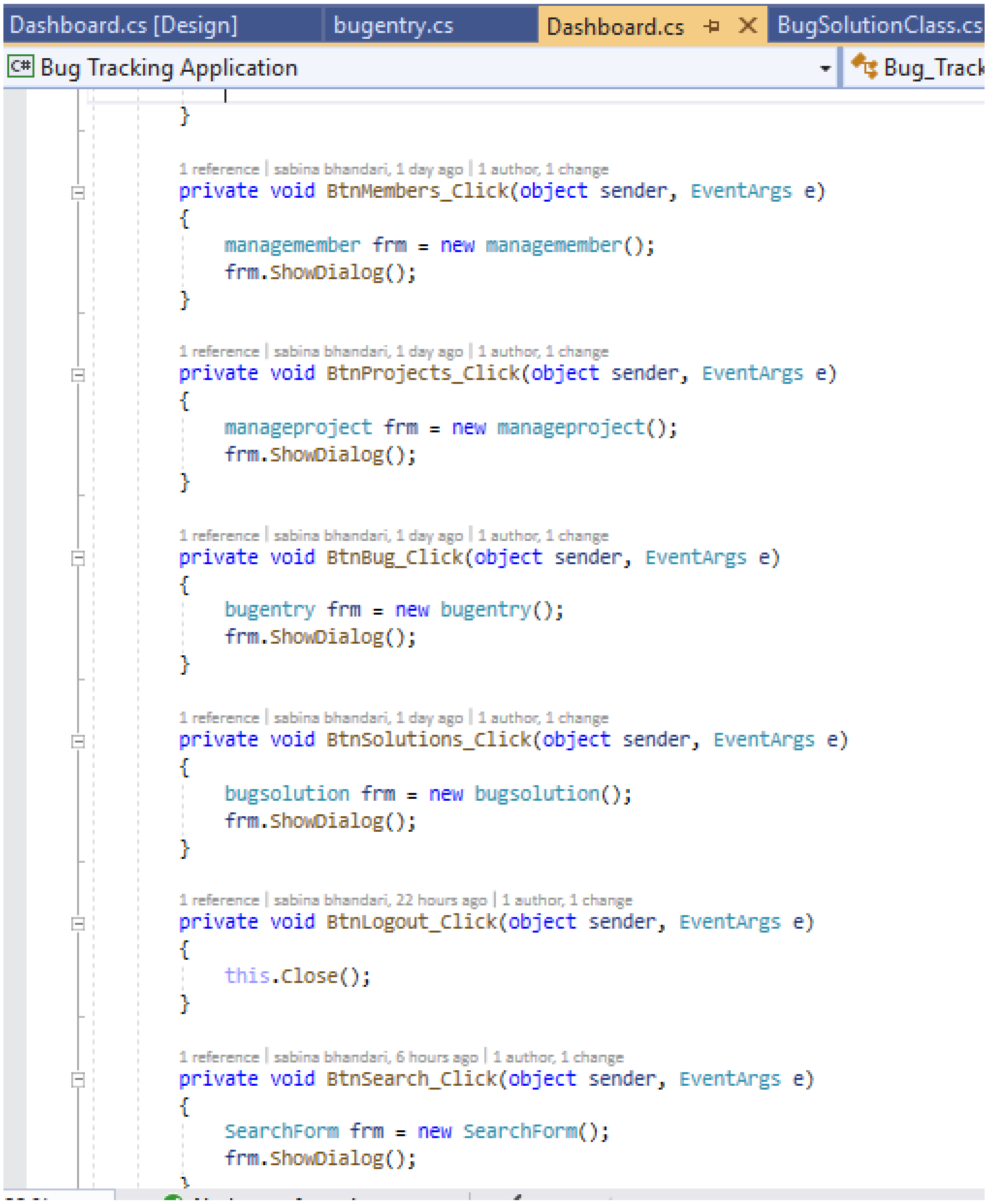


```
1 reference | sabina bhandari, 1 day ago | 1 author, 2 changes
private void btnlogin_Click(object sender, EventArgs e)
{
    //Main lf = new Main();
    //lf.Show();
    try
    {
        String Role = mc.Login(txtusername.Text, txtpassword.Text);
        if (Role == "Admin")
        {
            Dashboard frm = new Dashboard();
            frm.Show();
        }
        else if (Role == "User")
        {
            Dashboard frm = new Dashboard();
            frm.Show();
        }
        else
        {
            MessageBox.Show("Invalid user name or password");
            txtusername.Clear();
            txtpassword.Clear();
            txtusername.Focus();
        }
    }
    catch (Exception)
    {

        MessageBox.Show("Invalid user name or password");
        txtusername.Clear();
        txtpassword.Clear();
        txtusername.Focus();
        txtusername.BackColor = Color.Red;
        txtpassword.BackColor = Color.Red;
    }
}

1 reference | sabina bhandari, 2 days ago | 1 author, 1 change
private void button1_Click(object sender, EventArgs e)
{
```

Dashboard:

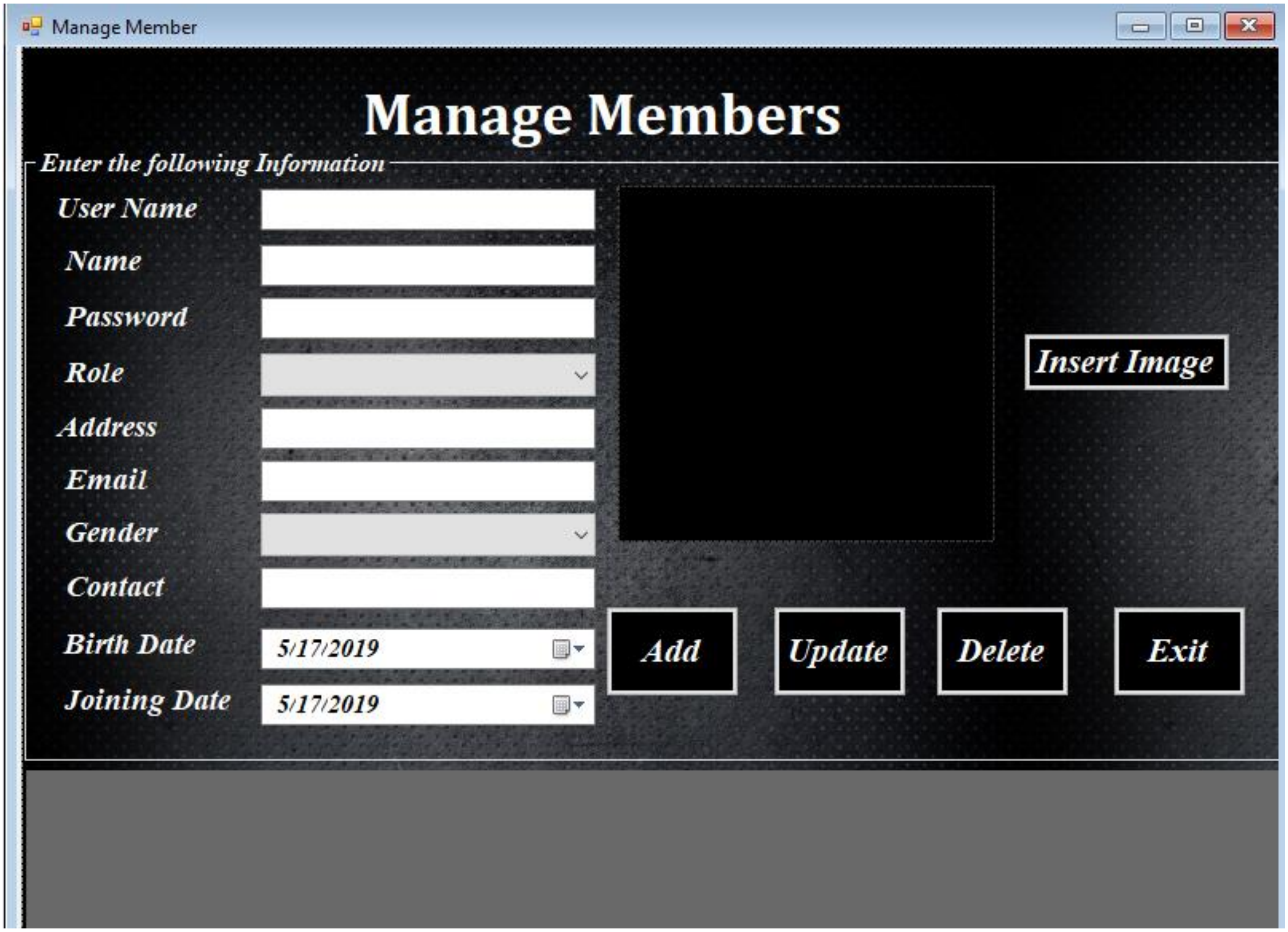


Code for Dashboard:



```
        }

        1 reference | sabina bhandari, 1 day ago | 1 author, 1 change
        private void BtnMembers_Click(object sender, EventArgs e)
        {
            managemember frm = new managemember();
            frm.ShowDialog();
        }

        1 reference | sabina bhandari, 1 day ago | 1 author, 1 change
        private void BtnProjects_Click(object sender, EventArgs e)
        {
            manageproject frm = new manageproject();
            frm.ShowDialog();
        }

        1 reference | sabina bhandari, 1 day ago | 1 author, 1 change
        private void BtnBug_Click(object sender, EventArgs e)
        {
            bugentry frm = new bugentry();
            frm.ShowDialog();
        }

        1 reference | sabina bhandari, 1 day ago | 1 author, 1 change
        private void BtnSolutions_Click(object sender, EventArgs e)
        {
            bugsolution frm = new bugsolution();
            frm.ShowDialog();
        }

        1 reference | sabina bhandari, 22 hours ago | 1 author, 1 change
        private void BtnLogout_Click(object sender, EventArgs e)
        {
            this.Close();
        }

        1 reference | sabina bhandari, 6 hours ago | 1 author, 1 change
        private void BtnSearch_Click(object sender, EventArgs e)
        {
            SearchForm frm = new SearchForm();
            frm.ShowDialog();
        }
```

Manage member:



Birth Date: 5/17/2019

Joining Date: 5/17/2019

Code for manage member:

```
using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;

using System.Drawing;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

using System.Windows.Forms;

using DataAccessLayer;
using BusinessLogicLayer;
using Microsoft.VisualBasic;
using System.Text.RegularExpressions;
using System.IO;

namespace Bug_Tracking_Application
{
    public partial class managemember : Form
    {
        public managemember()
        {
            InitializeComponent();
            txtcontact.MaxLength = 10;
        }
        //acccessing data from various classes
        BusinessLogicClass blc = new BusinessLogicClass();
        MemberClass mc = new MemberClass();
        HelperClass hc = new HelperClass();
        public int MemberId;



                          //close the window
                          private void btnexit_Click(object sender, EventArgs e)
        {
            this.Close();

        }



        //retrieve the data on DataGridView

        private void managemember_Load(object sender, EventArgs e)

        {

            dgvmembers.DataSource = mc.GetAllUsers();

        }



        //adding the data to display on datagridview and store to database

        private void AddButton_Click(object sender, EventArgs e)

        {

            if (txtusername.Text == "")

            {

                MessageBox.Show("Provide Username: Full information required");

            }

            if (txtmembername.Text == "")

            {

                MessageBox.Show("Provide Member Name: Full information required");

            }

            if (txtpassword.Text == "")

            {

                MessageBox.Show("Provide Password: Full information required");

            }

            if (cmbrole.SelectedIndex == -1)
```

```
{
    MessageBox.Show("Provide Role: Full information required");
}
if (txtaddress.Text == "")
{
    MessageBox.Show("Provide Address: Full information required");
}
if (txtemail.Text == "")
{
    MessageBox.Show("Provide Email: Full information required");
}
if (cmbgender.SelectedIndex == -1)
{
    MessageBox.Show("Provide Gender: Full information required");
}
if (txtcontact.Text == "")
{
    MessageBox.Show("Provide Contact: Full information required");
}
if (dtpbirthdate.Text == "")
{
    MessageBox.Show("Provide Birth Date: Full information required");
}
if (dtpjoiningdate.Text == "")
{
        MessageBox.Show("Provide Join Date: Full information required");
    }
    if (btnbrowse.Text == "")
    {
        MessageBox.Show("Provide Image: Full information required");
    }
    else if (DublicateUser() == true)
    {
        MessageBox.Show("Member with same name already exists");
        txtusername.Clear();
        txtusername.Focus();
    }
    { CreateUser(); }
}

//create user
private void CreateUser()
{
                               //try catch exception
    try
    {
        bool res = blc.MemberTable(0,
           txtusername.Text,
           txtmembername.Text,
           txtpassword.Text,
   cmbrole.Text,

   txtaddress.Text,

   txtemail.Text,

   cmbgender.Text,

  Convert.ToInt32 (txtcontact.Text),

  Convert.ToDateTime (dtpbirthdate.Text),

   Convert.ToDateTime(dtpjoiningdate.Text),

   HelperClass.imageConverter(picmembers),

       1);

if (res == true)

{

                                                //display message of adding memeber in database

    MessageBox.Show("Success to Add member");

    dgvmembers.DataSource = mc.GetAllUsers();

    HelperClass.makeFieldsBlank(grpContainer);

    picmembers.Image = null;

}

else

{

                                                //display error message as data cannot be stored

                                                MessageBox.Show("Couldn't Add selected member");

    dgvmembers.DataSource = mc.GetAllUsers();

    HelperClass.makeFieldsBlank(grpContainer);

    picmembers.Image = null;

}
```

```
    }
    catch (Exception ex)
    {
        MessageBox.Show(ex.Message);
    }
}



                  //helps in data store as if users have same information
                  public bool DublicateUser()
    {
    int x = 0;
    try
    {

        for (int i = 0;i<dgvmembers.Rows.Count;i++)
        {
            if (txtusername.Text == dgvmembers.Rows[i].Cells["UserName"].Value.ToString())
                x = 1;
        }

    }
    catch (Exception ex)
    {
        MessageBox.Show(ex.Message);

    }

    if (x == 1)

        return true;

    else

        return false;

}



//Browse image in button click

private void btnbrowse_Click(object sender, EventArgs e)

    {

        try

        {

            try

            {

                OpenFileDialog ofd = new OpenFileDialog();

                if (ofd.ShowDialog() == DialogResult.OK)

                {

                    picmembers.Image = Image.FromFile(ofd.FileName);



                }

                else

                {

                    MessageBox.Show("Please select a profile picture");

                }
                }
                catch (Exception ex)
                {

                    MessageBox.Show(ex.Message);
                }
            }
            catch (Exception ex)
            {

                MessageBox.Show(ex.Message);
            }
        }



         //retrive all data from datagridview to the details entry section on a single click
        private void dgvmembers_CellContentClick(object sender, DataGridViewCellEventArgs e)
        {
            try
            {
                MemberId =
Convert.ToInt32(dgvmembers.SelectedRows[0].Cells["MemberId"].Value.ToString());
                txtusername.Text = dgvmembers.SelectedRows[0].Cells["UserName"].Value.ToString();
                txtmembername.Text = dgvmembers.SelectedRows[0].Cells["Name"].Value.ToString();
```

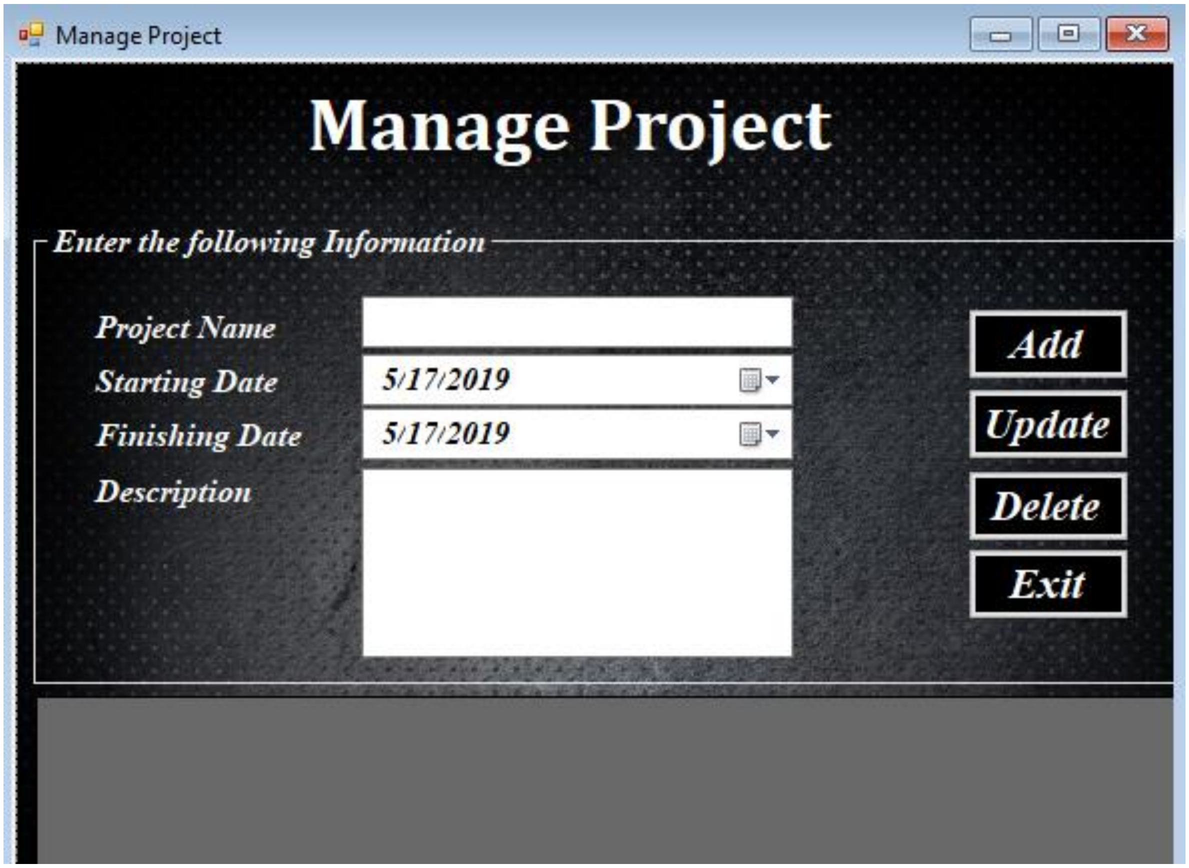
```
                    txtpassword.Text = dgvmembers.SelectedRows[0].Cells["Password"].Value.ToString();

                    cmbrole.Text = dgvmembers.SelectedRows[0].Cells["Role"].Value.ToString();

                    txtaddress.Text = dgvmembers.SelectedRows[0].Cells["Address"].Value.ToString();

                    txtemail.Text = dgvmembers.SelectedRows[0].Cells["Email"].Value.ToString();

                    cmbgender.Text = dgvmembers.SelectedRows[0].Cells["Gender"].Value.ToString();

                    txtcontact.Text = dgvmembers.SelectedRows[0].Cells["Contact"].Value.ToString();

                    dtpbirthdate.Text = dgvmembers.SelectedRows[0].Cells["DOB"].Value.ToString();

                    dtpjoiningdate.Text = dgvmembers.SelectedRows[0].Cells["DOJ"].Value.ToString();

                    MemoryStream memoryStream = new
MemoryStream((byte[])dgvmembers.SelectedRows[0].Cells["Image"].Value);

                    picmembers.Image = Image.FromStream(memoryStream);

                }

                catch (Exception ex)

                {



                    MessageBox.Show(ex.Message);

                }

            }




        //update the date entered into the database

        private void btnupdate_Click(object sender, EventArgs e)

            {

                try

                {
```

```
bool res = blc.MemberTable(MemberId,
   txtusername.Text,
   txtmembername.Text,
   txtpassword.Text,
   cmbrole.Text,
   txtaddress.Text,
   txtemail.Text,
   cmbgender.Text,
  Convert.ToInt32(txtcontact.Text),
  Convert.ToDateTime(dtpbirthdate.Text),
   Convert.ToDateTime(dtpjoiningdate.Text),
   HelperClass.imageConverter(picmembers),
       2);
if (res == true)
{
    MessageBox.Show("Success to Update Member");
    dgvmembers.DataSource = mc.GetAllUsers();
    HelperClass.makeFieldsBlank(grpContainer);
    picmembers.Image = null;
}
else
{
                                              //display error message as data cannot be updated
                                              MessageBox.Show("Couldn't Update selected member");
    dgvmembers.DataSource = mc.GetAllUsers();
```

```
                HelperClass.makeFieldsBlank(grpContainer);

                picmembers.Image = null;

            }

        }

        catch (Exception ex)

        {

            MessageBox.Show(ex.Message);

        }

    }




// delete the data entered into the database

    private void btndelete_Click(object sender, EventArgs e)

    {



        try

        {

            bool res = blc.MemberTable(MemberId,

               txtusername.Text,

               txtmembername.Text,

               txtpassword.Text,

               cmbrole.Text,

               txtaddress.Text,

               txtemail.Text,

               cmbgender.Text,
               Convert.ToInt32(txtcontact.Text),

               Convert.ToDateTime(dtpbirthdate.Text),

                Convert.ToDateTime(dtpjoiningdate.Text),

                HelperClass.imageConverter(picmembers),

                    3);

        if (res == true)

        {

        //display message of successfully deleted

        MessageBox.Show("Success to Delete Member");

            dgvmembers.DataSource = mc.GetAllUsers();

            HelperClass.makeFieldsBlank(grpContainer);

            picmembers.Image = null;

        }

        else

        {

        //display error message as data cannot be deleted

        MessageBox.Show("Couldn't delete selected memeber");

            dgvmembers.DataSource = mc.GetAllUsers();

            HelperClass.makeFieldsBlank(grpContainer);

            picmembers.Image = null;

        }

    }

    catch (Exception ex)

    {

        MessageBox.Show(ex.Message);
```

```
                }

            }



        private void Txtemail_TextChanged(object sender, EventArgs e)

        {

            Regex regex = new Regex(@"^([\w-\.]+)@((\[[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.)|(([\w-
]+\.)+))([a-zA-Z]{2,4}|[0-9]{1,3})(\]?)$");

            bool isValid = regex.IsMatch(txtemail.Text.Trim());

            if (!isValid==false)

            {

                MessageBox.Show("Invalid Email.");

            }



        }



        }

    }
```

Manage Project:



Project Name

Starting Date 5/17/2019

Finishing Date 5/17/2019

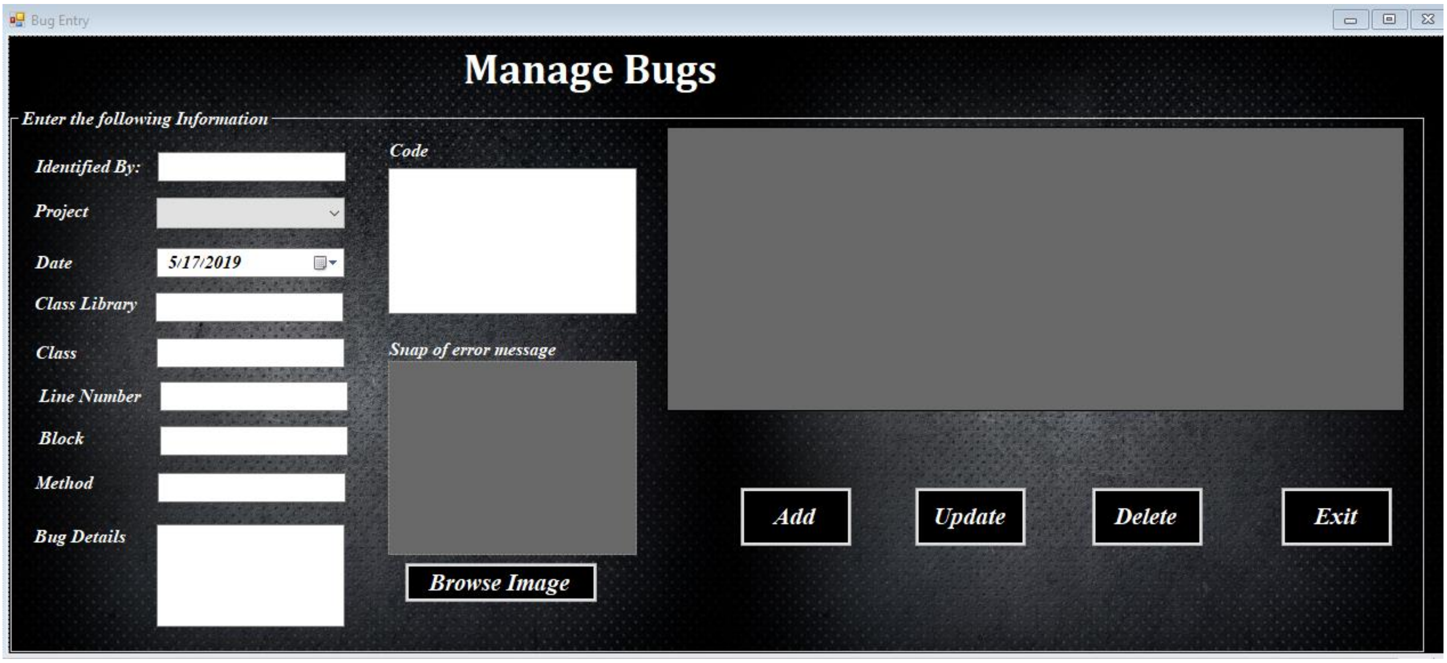
Description

Code for manage project:

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

namespace Bug_Tracking_Application
{
    public partial class manageproject : Form
    {
        public manageproject()
        {
            InitializeComponent();
        }
        //acccessing data from various classes
        BusinessLogicClass blc = new BusinessLogicClass();
        ProjectClass pc = new ProjectClass();
        HelperClass hc = new HelperClass();
        public int ProjectId;

        private void btnexit_Click(object sender, EventArgs e)
        {
            this.Close();
        }

        //adding the data to display on datagridview and store to database
        private void btnadd_Click(object sender, EventArgs e)
        {

            if (txtprojectname.Text == "")
            {
                MessageBox.Show("Provide Projectname: Full information required");
            }
            if (dtpstartingdate.Text == "")
            {
                MessageBox.Show("Provide Starting Date: Full information required");
            }
            if (dtpfinishingdate.Text == "")
            {
                MessageBox.Show("Provide Finishing Date: Full information required");
            }
            if (txtdescription.Text == "")
            {
                MessageBox.Show("Provide Description: Full information required");
            }
            else if (DublicateProject() == true)
            {
                MessageBox.Show("Project with same name already exists");
                txtprojectname.Clear();
                txtprojectname.Focus();
            }
            { CreateProject(); }
        }

        private void CreateProject()
        {
            //try catch exception
            try
            {
                bool res = blc.ProjectTable(0,
                   txtprojectname.Text,
                  Convert.ToDateTime(dtpstartingdate.Text),
                  Convert.ToDateTime(dtpfinishingdate.Text),
                   txtdescription.Text,
                       1);
                if (res == true)
                {
                    //display message as added project
                    MessageBox.Show("Add to Create Project");
                    dgvprojects.DataSource = pc.GetAllProjects();
                    HelperClass.makeFieldsBlank(grpContainer);
                }
                else
                {
                    //display error message as data cannot be added
                    MessageBox.Show("Couldn't Add selected Project");
                    dgvprojects.DataSource = pc.GetAllProjects();
            HelperClass.makeFieldsBlank(grpContainer);
        }
    }
    catch (Exception ex)
    {
        MessageBox.Show(ex.Message);
    }
}


public bool DublicateProject()
{
    int x = 0;
    try
    {

        for (int i = 0; i < dgvprojects.Rows.Count; i++)
        {
            if (txtprojectname.Text == dgvprojects.Rows[i].Cells["ProjectName"].Value.ToString())
                x = 1;
        }

    }
    catch (Exception ex)
    {

        MessageBox.Show(ex.Message);
    }
    if (x == 1)
        return true;
    else
        return false;
}


//retrive all data from datagridview to the details entry section on a single click
private void dgvprojects_CellContentClick(object sender, DataGridViewCellEventArgs e)
{
    try
    {
         ProjectId = Convert.ToInt32(dgvprojects.SelectedRows[0].Cells["ProjectId"].Value.ToString());
          txtprojectname.Text = dgvprojects.SelectedRows[0].Cells["ProjectName"].Value.ToString();
          dtpstartingdate.Text = dgvprojects.SelectedRows[0].Cells["StartingDate"].Value.ToString();
          dtpfinishingdate.Text = dgvprojects.SelectedRows[0].Cells["FinishingDate"].Value.ToString();
          txtdescription.Text = dgvprojects.SelectedRows[0].Cells["Description"].Value.ToString();
    }
    catch (Exception ex)
    {

        MessageBox.Show(ex.Message);
    }
}

//retrieve the data on DataGridView
private void manageproject_Load(object sender, EventArgs e)
{
```

```
            dgvprojects.DataSource = pc.GetAllProjects();
        }


        //update the date entered into the database
        private void btnupdate_Click(object sender, EventArgs e)
        {
            try
            {
                bool res = blc.ProjectTable(ProjectId,
                   txtprojectname.Text,
                  Convert.ToDateTime(dtpstartingdate.Text),
                  Convert.ToDateTime(dtpfinishingdate.Text),
                   txtdescription.Text,
                       2);
                if (res == true)
                {
                    //display message as updated project
                    MessageBox.Show("Success to Update Project");
                    dgvprojects.DataSource = pc.GetAllProjects();
                    HelperClass.makeFieldsBlank(grpContainer);
                }
                else
                {
                    //display error message as data cannot be updated
                    MessageBox.Show("Couldn't Update selected Project");
                    dgvprojects.DataSource = pc.GetAllProjects();
                    HelperClass.makeFieldsBlank(grpContainer);
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }


        // delete the data entered into the database
        private void btndelete_Click(object sender, EventArgs e)
        {
            try
            {
                bool res = blc.ProjectTable(ProjectId,
                   txtprojectname.Text,
                  Convert.ToDateTime(dtpstartingdate.Text),
                  Convert.ToDateTime(dtpfinishingdate.Text),
                   txtdescription.Text,
                       3);
                if (res == true)
                {
                    //display message as deleted project
                    MessageBox.Show("Success to Delete Project");
                    dgvprojects.DataSource = pc.GetAllProjects();
                    HelperClass.makeFieldsBlank(grpContainer);
                }
                else
                {
                    //display error message as data cannot be deleted
                    MessageBox.Show("Couldn't Delete selected Project");
                    dgvprojects.DataSource = pc.GetAllProjects();
                    HelperClass.makeFieldsBlank(grpContainer);
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }


    }
}
```

Manage Bug entry:



Date 5/17/2019

Code for Bug entry:

```
using System;

using System.Collections.Generic;

using System.ComponentModel;

using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Microsoft.VisualBasic;
using BusinessLogicLayer;
using DataAccessLayer;
using System.IO;

namespace Bug_Tracking_Application
{
    public partial class bugentry : Form
    {
        public bugentry()
        {
            InitializeComponent();
        }
        //acccessing data from various classes
        BusinessLogicClass blc = new BusinessLogicClass();
        HelperClass hc = new HelperClass();
        ProjectClass pc = new ProjectClass();
        BugEntryClass bec = new BugEntryClass();
        public int BugId;
```

```
//close the form

private void btnexit_Click(object sender, EventArgs e)

{

    this.Close();

}




//adding the data to display on datagridview and store to database

private void btnadd_Click(object sender, EventArgs e)

{

    if (dtpdate.Text == "")

    {

        MessageBox.Show("Provide Date: Full information required");

    }

    else if (txtclasslibrary.Text == "")

    {

        MessageBox.Show("Provide Class Library: Full information required");

    }

    else if (txtblock.Text == "")

    {

        MessageBox.Show("Provide Block: Full information required");

    }

    else if (txtidentifiedby.Text == "")

    {
```

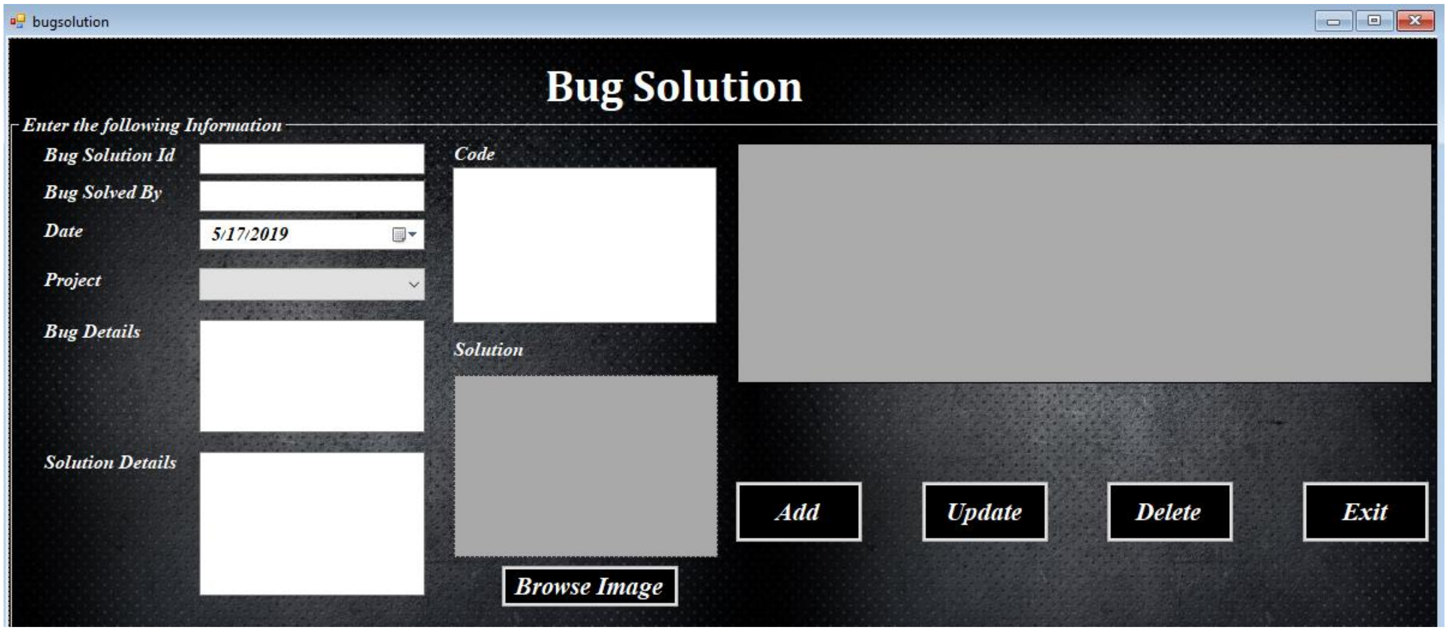
```
    MessageBox.Show("Provide Identified by: Full information required");
}
else if (txtclass.Text == "")
{
    MessageBox.Show("Provide Class: Full information required");
}
else if (txtlinenumber.Text == "")
{
    MessageBox.Show("Provide Line Number: Full information required");
}
else if (cmbproject.SelectedIndex == -1)
{
    MessageBox.Show("Provide Project: Full information required");
}
else if (txtmethod.Text == "")
{
    MessageBox.Show("Provide Method: Full information required");
}
else if (txtbugdetails.Text == "")
{
    MessageBox.Show("Provide Bug Details: Full information required");
}
else if (txtcode.Text == "")
{
    MessageBox.Show("Provide Code: Full information required");
    }

    else if (btnbrowse.Text == "")

    {

        MessageBox.Show("Provide Image: Full information required");

    }


    { CreateBugs(); }

}


//create bugs to fill the empty space

private void CreateBugs()

{

    //try catch exception

    try

    {

        bool res = blc.BugTable(0,

          Convert.ToDateTime(dtpdate.Text),

           txtclasslibrary.Text,

           txtblock.Text,

           txtidentifiedby.Text,

           txtclass.Text,

           txtlinenumber.Text,

           cmbproject.Text,

           txtmethod.Text,

        txtbugdetails.Text,
        txtcode.Text,

           HelperClass.imageConverter(picbugs),

               1);

        if (res == true)

        {

            //display message of successfully added

            MessageBox.Show("Added to Entry Bugs");

            dgvbugs.DataSource = bec.GetAllBugs();

            HelperClass.makeFieldsBlank(grpContainer);

            picbugs.Image = null;

        }

        else

        {

            //display error message as data cannot be stored

            MessageBox.Show("Couldn't Add data to Entry Bugs");

            dgvbugs.DataSource = bec.GetAllBugs();

            HelperClass.makeFieldsBlank(grpContainer);

            picbugs.Image = null;

        }

    }

    catch (Exception ex)

    {

        MessageBox.Show(ex.Message);

    }

}
```

```
//retrive all data from datagridview to the details entry section on a single click

private void dgvbugs_CellContentClick(object sender, DataGridViewCellEventArgs e)

{

    try

    {

        BugId = Convert.ToInt32(dgvbugs.SelectedRows[0].Cells["BugId"].Value.ToString());

        dtpdate.Text = dgvbugs.SelectedRows[0].Cells["Date"].Value.ToString();

        txtclasslibrary.Text = dgvbugs.SelectedRows[0].Cells["ClassLibrary"].Value.ToString();

        txtblock.Text = dgvbugs.SelectedRows[0].Cells["Block"].Value.ToString();

        txtidentifiedby.Text = dgvbugs.SelectedRows[0].Cells["IdentifiedBy"].Value.ToString();

        txtclass.Text = dgvbugs.SelectedRows[0].Cells["Class"].Value.ToString();

        txtlinenumber.Text = dgvbugs.SelectedRows[0].Cells["LineNumber"].Value.ToString();

        cmbproject.Text = dgvbugs.SelectedRows[0].Cells["Project"].Value.ToString();

        txtmethod.Text = dgvbugs.SelectedRows[0].Cells["Method"].Value.ToString();

        txtbugdetails.Text = dgvbugs.SelectedRows[0].Cells["BugDetails"].Value.ToString();

        txtcode.Text = dgvbugs.SelectedRows[0].Cells["Code"].Value.ToString();

        MemoryStream memoryStream = new MemoryStream((byte[])dgvbugs.SelectedRows[0].Cells["Snap"].Value);

        picbugs.Image = Image.FromStream(memoryStream);

    }

    catch (Exception ex)

    {
        MessageBox.Show(ex.Message);
    }
}

//retrieve the data on DataGridView
private void bugentry_Load(object sender, EventArgs e)
{
    dgvbugs.DataSource = bec.GetAllBugs();

    cmbproject.DataSource = pc.GetAllProjects();
    cmbproject.DisplayMember = "ProjectName";
    cmbproject.ValueMember = "ProjectName";
    cmbproject.SelectedIndex = -1;
}

//Browse image in button click
private void btnbrowse_Click_1(object sender, EventArgs e)
{
    try
    {
        try
        {
            OpenFileDialog ofd = new OpenFileDialog();
            if (ofd.ShowDialog() == DialogResult.OK)
            {
                picbugs.Image = Image.FromFile(ofd.FileName);


            }
            else
            {
                MessageBox.Show("Please select a Bug picture");
            }


        }
        catch (Exception ex)
        {


            MessageBox.Show(ex.Message);
        }
    }
    catch (Exception ex)
    {


        MessageBox.Show(ex.Message);
    }
}


// update the data entered into the database
private void Btnupdate_Click(object sender, EventArgs e)
{
```

```
try

{

    bool res = blc.BugTable(BugId,

      Convert.ToDateTime(dtpdate.Text),

       txtclasslibrary.Text,

       txtblock.Text,

       txtidentifiedby.Text,

       txtclass.Text,

       txtlinenumber.Text,

       cmbproject.Text,

       txtmethod.Text,

    txtbugdetails.Text,

    txtcode.Text,

       HelperClass.imageConverter(picbugs),

           2);

    if (res == true)

    {

        //display message of successfully updated

        MessageBox.Show("Success to Update Bugs");

        dgvbugs.DataSource = bec.GetAllBugs();

        HelperClass.makeFieldsBlank(grpContainer);

        picbugs.Image = null;

    }

    else

    {
            //display error message as data cannot be updated

            MessageBox.Show("Couldn't success to Update Bugs");

            dgvbugs.DataSource = bec.GetAllBugs();

            HelperClass.makeFieldsBlank(grpContainer);

            picbugs.Image = null;

        }

    }

    catch (Exception ex)

    {

        MessageBox.Show(ex.Message);

    }

}



// delete the data entered into the database

private void Btndelete_Click(object sender, EventArgs e)

{

    try

    {

        bool res = blc.BugTable(BugId,

          Convert.ToDateTime(dtpdate.Text),

           txtclasslibrary.Text,

           txtblock.Text,

           txtidentifiedby.Text,

           txtclass.Text,
       txtlinenumber.Text,

       cmbproject.Text,

       txtmethod.Text,

    txtbugdetails.Text,

    txtcode.Text,

       HelperClass.imageConverter(picbugs),

           3);

    if (res == true)

    {

        //display message of successfully deleted

        MessageBox.Show("Success to Delete Bugs");

        dgvbugs.DataSource = bec.GetAllBugs();

        HelperClass.makeFieldsBlank(grpContainer);

        picbugs.Image = null;

    }

    else

    {

        //display error message as data cannot be deleted

        MessageBox.Show("Couldn't success to Delete Bugs");

        dgvbugs.DataSource = bec.GetAllBugs();

        HelperClass.makeFieldsBlank(grpContainer);

        picbugs.Image = null;

    }

}

catch (Exception ex)
```

```
            {

                MessageBox.Show(ex.Message);

            }

        }

    }

}
```

Bug Solution:



Code for Bug Solution:

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

namespace Bug_Tracking_Application
{
    public partial class bugsolution : Form
    {
        public bugsolution()
        {
            InitializeComponent();
        }
        //acccessing data from various classes
        BusinessLogicClass blc = new BusinessLogicClass();
        HelperClass hc = new HelperClass();
        ProjectClass pc = new ProjectClass();
        BugEntryClass bec = new BugEntryClass();
        BugSolutionClass bsc = new BugSolutionClass();
        public int BugSolutionId;


        //adding the data to display on datagridview and store to database
        private void btnadd_Click(object sender, EventArgs e)
        {
            if (txtbugsolvedby.Text == "")
            {
                MessageBox.Show("Provide Bug Solved By: Full information required");
            }
            if (dtpdate.Text == "")
            {
                MessageBox.Show("Provide Date: Full information required");
            }
            if (cmbproject.Text == "")
            {
                MessageBox.Show("Provide Project: Full information required");
            }
            if (txtbugdetails.Text == "")
            {
                MessageBox.Show("Provide Bug Details by: Full information required");
            }
            if (txtsolutiondetails.Text == "")
            {
                MessageBox.Show("Provide Solution Details: Full information required");
            }
            if (txtcode.Text == "")
            {
                MessageBox.Show("Provide Code: Full information required");
            }
            if (btnbrowse.Text == "")
            {
                MessageBox.Show("Provide Image: Full information required");
            }

            { CreateBugSolution(); }
        }

        //create bug solution
        private void CreateBugSolution()
        {
            try
            {
                bool res = blc.BugSolutionTable(0,
                   txtbugsolvedby.Text,
                  Convert.ToDateTime(dtpdate.Text),
                  cmbproject.Text,
                   txtbugdetails.Text,
                   txtsolutiondetails.Text,
                   txtcode.Text,
                   HelperClass.imageConverter(picbugsolutions),
                       1);
                if (res == true)
                {
                    //display message of entred bug solution data
                    MessageBox.Show("Success to Entry Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
                else
                {
                    //display error message as data cannot be stored
                    MessageBox.Show("Couldn't success to Entry Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }


        //retrive all data from datagridview to the details entry section on a single click
        private void dgvbugsolutions_CellContentClick(object sender, DataGridViewCellEventArgs e)
        {
            try
            {
                BugSolutionId = 
Convert.ToInt32(dgvbugsolutions.SelectedRows[0].Cells["BugSolutionId"].Value.ToString());
                txtbugsolvedby.Text = dgvbugsolutions.SelectedRows[0].Cells["BugSolvedBy"].Value.ToString();
                dtpdate.Text = dgvbugsolutions.SelectedRows[0].Cells["Date"].Value.ToString();
                cmbproject.Text = dgvbugsolutions.SelectedRows[0].Cells["Project"].Value.ToString();
                txtbugdetails.Text = dgvbugsolutions.SelectedRows[0].Cells["BugDetails"].Value.ToString();
                txtsolutiondetails.Text = dgvbugsolutions.SelectedRows[0].Cells["SolutionDetails"].Value.ToString();
                txtcode.Text = dgvbugsolutions.SelectedRows[0].Cells["Code"].Value.ToString();
                MemoryStream memoryStream = new 
MemoryStream((byte[])dgvbugsolutions.SelectedRows[0].Cells["Snap"].Value);
                picbugsolutions.Image = Image.FromStream(memoryStream);
            }
            catch (Exception ex)
            {

                MessageBox.Show(ex.Message);
            }
        }

        //retrieve the data on DataGridView
```

```
private void bugsolution_Load(object sender, EventArgs e)
{
    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
    cmbproject.DataSource = pc.GetAllProjects();
    cmbproject.DisplayMember = "ProjectName";
    cmbproject.ValueMember = "ProjectName";
    cmbproject.SelectedIndex = -1;
}

//Browse image in button click
private void btnbrowse_Click(object sender, EventArgs e)
{
    try
    //try catch exception
    {
        try
        {
            OpenFileDialog ofd = new OpenFileDialog();
            if (ofd.ShowDialog() == DialogResult.OK)
            {
                picbugsolutions.Image = Image.FromFile(ofd.FileName);

            }
            else
            {
                MessageBox.Show("Please select a Solution picture");
            }

        }
        catch (Exception ex)
        {

            MessageBox.Show(ex.Message);
        }
    }
    catch (Exception ex)
    {

        MessageBox.Show(ex.Message);
    }
}


//close the form
private void btnexit_Click(object sender, EventArgs e)
{
    this.Close();
}

// update the data entered into the database
private void Btnupdate_Click(object sender, EventArgs e)
{
    try
    {
        bool res = blc.BugSolutionTable(BugSolutionId,
           txtbugsolvedby.Text,
                  Convert.ToDateTime(dtpdate.Text),
                  cmbproject.Text,
                   txtbugdetails.Text,
                   txtsolutiondetails.Text,
                   txtcode.Text,
                   HelperClass.imageConverter(picbugsolutions),
                       2);
                if (res == true)
                {
                    //display message of updating the bug solution data
                    MessageBox.Show("Success to Update Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
                else
                {
                    //display error message as data cannot be updated
                    MessageBox.Show("Couldn't success to Update Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }

        // delete the data entered into the database
        private void Btndelete_Click(object sender, EventArgs e)
        {
            try
            {
                bool res = blc.BugSolutionTable(BugSolutionId,
                   txtbugsolvedby.Text,
                  Convert.ToDateTime(dtpdate.Text),
                  cmbproject.Text,
                   txtbugdetails.Text,
                   txtsolutiondetails.Text,
                   txtcode.Text,
                   HelperClass.imageConverter(picbugsolutions),
                       3);
                if (res == true)
                {
                    //display message of deleting the bug solution data
                    MessageBox.Show("Success to Delete Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
                else
                {
                    //display error message as data cannot be deleted
                    MessageBox.Show("Couldn't success to Delete Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }
    }
}
```

Business Logic Layer:

Business logic class:

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

namespace Bug_Tracking_Application
{
    public partial class bugsolution : Form
    {
        public bugsolution()
        {
            InitializeComponent();
        }
        //acccessing data from various classes
        BusinessLogicClass blc = new BusinessLogicClass();
        HelperClass hc = new HelperClass();
        ProjectClass pc = new ProjectClass();
        BugEntryClass bec = new BugEntryClass();
        BugSolutionClass bsc = new BugSolutionClass();
        public int BugSolutionId;


        //adding the data to display on datagridview and store to database
        private void btnadd_Click(object sender, EventArgs e)
        {
            if (txtbugsolvedby.Text == "")
            {
                MessageBox.Show("Provide Bug Solved By: Full information required");
            }
            if (dtpdate.Text == "")
            {
                MessageBox.Show("Provide Date: Full information required");
            }
            if (cmbproject.Text == "")
            {
                MessageBox.Show("Provide Project: Full information required");
            }
            if (txtbugdetails.Text == "")
            {
                MessageBox.Show("Provide Bug Details by: Full information required");
            }
            if (txtsolutiondetails.Text == "")
            {
                MessageBox.Show("Provide Solution Details: Full information required");
            }
            if (txtcode.Text == "")
            {
                MessageBox.Show("Provide Code: Full information required");
            }
            if (btnbrowse.Text == "")
            {
                MessageBox.Show("Provide Image: Full information required");
            }

            { CreateBugSolution(); }
        }

        //create bug solution
        private void CreateBugSolution()
        {
            try
            {
                bool res = blc.BugSolutionTable(0,
                   txtbugsolvedby.Text,
                  Convert.ToDateTime(dtpdate.Text),
                  cmbproject.Text,
                   txtbugdetails.Text,
                   txtsolutiondetails.Text,
                   txtcode.Text,
                   HelperClass.imageConverter(picbugsolutions),
                       1);
                if (res == true)
                {
                    //display message of entred bug solution data
                    MessageBox.Show("Success to Entry Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
                else
                {
                    //display error message as data cannot be stored
                    MessageBox.Show("Couldn't success to Entry Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }


        //retrive all data from datagridview to the details entry section on a single click
        private void dgvbugsolutions_CellContentClick(object sender, DataGridViewCellEventArgs e)
        {
            try
            {
                BugSolutionId =
Convert.ToInt32(dgvbugsolutions.SelectedRows[0].Cells["BugSolutionId"].Value.ToString());
                txtbugsolvedby.Text = dgvbugsolutions.SelectedRows[0].Cells["BugSolvedBy"].Value.ToString();
                dtpdate.Text = dgvbugsolutions.SelectedRows[0].Cells["Date"].Value.ToString();
                cmbproject.Text = dgvbugsolutions.SelectedRows[0].Cells["Project"].Value.ToString();
                txtbugdetails.Text = dgvbugsolutions.SelectedRows[0].Cells["BugDetails"].Value.ToString();
                txtsolutiondetails.Text = dgvbugsolutions.SelectedRows[0].Cells["SolutionDetails"].Value.ToString();
                txtcode.Text = dgvbugsolutions.SelectedRows[0].Cells["Code"].Value.ToString();
                MemoryStream memoryStream = new
MemoryStream((byte[])dgvbugsolutions.SelectedRows[0].Cells["Snap"].Value);
                picbugsolutions.Image = Image.FromStream(memoryStream);
            }
            catch (Exception ex)
            {

                MessageBox.Show(ex.Message);
            }
        }

        //retrieve the data on DataGridView
        private void bugsolution_Load(object sender, EventArgs e)
        {
            dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
            cmbproject.DataSource = pc.GetAllProjects();
            cmbproject.DisplayMember = "ProjectName";
            cmbproject.ValueMember = "ProjectName";
            cmbproject.SelectedIndex = -1;
        }

        //Browse image in button click
        private void btnbrowse_Click(object sender, EventArgs e)
        {
            try
            //try catch exception
            {
                try
                {
                    OpenFileDialog ofd = new OpenFileDialog();
                    if (ofd.ShowDialog() == DialogResult.OK)
            {
                picbugsolutions.Image = Image.FromFile(ofd.FileName);

            }
            else
            {
                MessageBox.Show("Please select a Solution picture");
            }

        }
        catch (Exception ex)
        {

            MessageBox.Show(ex.Message);
        }
    }
    catch (Exception ex)
    {

        MessageBox.Show(ex.Message);
    }
}


//close the form
private void btnexit_Click(object sender, EventArgs e)
{
    this.Close();
}

// update the data entered into the database
private void Btnupdate_Click(object sender, EventArgs e)
{
    try
    {
        bool res = blc.BugSolutionTable(BugSolutionId,
           txtbugsolvedby.Text,
          Convert.ToDateTime(dtpdate.Text),
          cmbproject.Text,
           txtbugdetails.Text,
           txtsolutiondetails.Text,
           txtcode.Text,
           HelperClass.imageConverter(picbugsolutions),
               2);
        if (res == true)
        {
            //display message of updating the bug solution data
            MessageBox.Show("Success to Update Bug Solutions");
            dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
            HelperClass.makeFieldsBlank(grpContainer);
            picbugsolutions.Image = null;
        }
        else
        {
            //display error message as data cannot be updated
            MessageBox.Show("Couldn't success to Update Bug Solutions");
```

```
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }

        // delete the data entered into the database
        private void Btndelete_Click(object sender, EventArgs e)
        {
            try
            {
                bool res = blc.BugSolutionTable(BugSolutionId,
                   txtbugsolvedby.Text,
                  Convert.ToDateTime(dtpdate.Text),
                  cmbproject.Text,
                   txtbugdetails.Text,
                   txtsolutiondetails.Text,
                   txtcode.Text,
                   HelperClass.imageConverter(picbugsolutions),
                       3);
                if (res == true)
                {
                    //display message of deleting the bug solution data
                    MessageBox.Show("Success to Delete Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
                else
                {
                    //display error message as data cannot be deleted
                    MessageBox.Show("Couldn't success to Delete Bug Solutions");
                    dgvbugsolutions.DataSource = bsc.GetAllBugSolutions();
                    HelperClass.makeFieldsBlank(grpContainer);
                    picbugsolutions.Image = null;
                }
            }
            catch (Exception ex)
            {
                MessageBox.Show(ex.Message);
            }
        }
    }
}
```

Data Access Layer:

Member Class:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Data;
using System.Threading.Tasks;
using System.Data.SqlClient;

namespace DataAccessLayer
{
    public class MemberClass
    {
        SqlConnection conn = new SqlConnection(ConnectionClass.ConnectionString);
        public int MemberTable(int MemberId,
            String UserName,
            String Name,
            String Password,
            String Role,
            String Address,
            String Email,
            String Gender,
            int Contact,
            DateTime DOB,
            DateTime DOJ,
            byte[] Image,
            int Mode)
        {
            try
            {
                SqlCommand cmd = new SqlCommand("SP_ManageMembers", conn);
                cmd.CommandType = CommandType.StoredProcedure;
                cmd.Parameters.AddWithValue("@MemberId", MemberId);
                cmd.Parameters.AddWithValue("@UserName", UserName);
                cmd.Parameters.AddWithValue("@Name", Name);
                cmd.Parameters.AddWithValue("@Password", Password);
                cmd.Parameters.AddWithValue("@Role", Role);
                cmd.Parameters.AddWithValue("@Address", Address);
                cmd.Parameters.AddWithValue("@Email", Email);
                cmd.Parameters.AddWithValue("@Gender", Gender);
                cmd.Parameters.AddWithValue("@Contact", Contact);
                cmd.Parameters.AddWithValue("@DOB", DOB);
                cmd.Parameters.AddWithValue("@DOJ", DOJ);
                cmd.Parameters.AddWithValue("@Image", Image);
                cmd.Parameters.AddWithValue("@Mode", Mode);
                conn.Open();
                int result = cmd.ExecuteNonQuery();
                conn.Close();
                return result;
            }
            catch (Exception ex)
            {
                throw ex;
            }
            finally { conn.Close(); }
        }
        public DataTable GetAllUsers()
        {
            try
            {
                DataTable dt = new DataTable();
                SqlCommand cmd = new SqlCommand("Select * from MemberTable", conn);
                conn.Open();
                SqlDataReader dr = cmd.ExecuteReader();
                dt.Load(dr);
                conn.Close();
                return dt;
            }
            catch (Exception ex)
            {
                throw ex;
            }
            finally { conn.Close(); }
        }
        public string Login(String UserName, String Password)
        {
            try
            {
                String Role = "";
                DataTable dt = new DataTable();
                SqlCommand cmd = new SqlCommand("Select Role from MemberTable where UserName=@UserName and 
Password=@Password", conn);
                cmd.CommandType = CommandType.Text;
                cmd.Parameters.AddWithValue("@UserName", UserName);
                cmd.Parameters.AddWithValue("@Password", Password);
                conn.Open();
                SqlDataReader dr = cmd.ExecuteReader();
                dt.Load(dr);
                conn.Close();
                Role = dt.Rows[0]["Role"].ToString();
                return Role;
            }
            catch (Exception ex)
            {

                throw ex;
            }
            finally { conn.Close(); }
        }
    }
}
```

Project Class:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Data;
using System.Data.SqlClient;
using System.Threading.Tasks;

namespace DataAccessLayer
{
    public class ProjectClass
    {
        SqlConnection conn = new SqlConnection(ConnectionClass.ConnectionString);
        public int ProjectTable(int ProjectId,
            String ProjectName,
            DateTime StartingDate,
            DateTime FinishingDate,
            String Description,
            int Mode)
        {
            try
            {
                SqlCommand cmd = new SqlCommand("SP_ManageProjects", conn);
                cmd.CommandType = CommandType.StoredProcedure;
                cmd.Parameters.AddWithValue("@ProjectId", ProjectId);
                cmd.Parameters.AddWithValue("@ProjectName", ProjectName);
                cmd.Parameters.AddWithValue("@StartingDate", StartingDate);
                cmd.Parameters.AddWithValue("@FinishingDate", FinishingDate);
                cmd.Parameters.AddWithValue("@Description", Description);
                cmd.Parameters.AddWithValue("@Mode", Mode);
                conn.Open();
                int result = cmd.ExecuteNonQuery();
                conn.Close();
                return result;
            }
            catch (Exception ex)
            {
                throw ex;
            }
            finally { conn.Close(); }
        }
        public DataTable GetAllProjects()
        {
            try
            {
                DataTable dt = new DataTable();
                SqlCommand cmd = new SqlCommand("Select * from ProjectTable", conn);
                conn.Open();
                SqlDataReader dr = cmd.ExecuteReader();
                dt.Load(dr);
                conn.Close();
                return dt;
            }
            catch (Exception ex)
            {
                throw ex;
            }
            finally { conn.Close(); }
        }
    }
}
```

Bug Entry Class:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Data;
using System.Threading.Tasks;
using System.Data.SqlClient;

namespace DataAccessLayer
{
    public class BugEntryClass
    {
        SqlConnection conn = new SqlConnection(ConnectionClass.ConnectionString);
        public int BugTable(int BugId,
            DateTime Date,
            String ClassLibrary,
            String Block,
            String IdentifiedBy,
            String Class,
            String LineNumber,
            String Project,
            String Method,
            String BugDetails,
            String Code,
            byte[] Snap,
            int Mode)
        {
            try
            {
                SqlCommand cmd = new SqlCommand("SP_ManageBugs", conn);
                cmd.CommandType = CommandType.StoredProcedure;
                cmd.Parameters.AddWithValue("@BugId", BugId);
                cmd.Parameters.AddWithValue("@Date", Date);
                cmd.Parameters.AddWithValue("@ClassLibrary", ClassLibrary);
                cmd.Parameters.AddWithValue("@Block", Block);
                cmd.Parameters.AddWithValue("@IdentifiedBy", IdentifiedBy);
                cmd.Parameters.AddWithValue("@Class", Class);
                cmd.Parameters.AddWithValue("@LineNumber", LineNumber);
                cmd.Parameters.AddWithValue("@Project", Project);
                cmd.Parameters.AddWithValue("@Method", Method);
                cmd.Parameters.AddWithValue("@BugDetails", BugDetails);
                cmd.Parameters.AddWithValue("@Code", Code);
                cmd.Parameters.AddWithValue("@Snap", Snap);
                cmd.Parameters.AddWithValue("@Mode", Mode);
                conn.Open();
                int result = cmd.ExecuteNonQuery();
                conn.Close();
                return result;
            }
            catch (Exception ex)
            {
                throw ex;
            }
            finally { conn.Close(); }
        }
        public DataTable GetAllBugs()
        {
            try
            {
                DataTable dt = new DataTable();
                SqlCommand cmd = new SqlCommand("Select * from BugTable", conn);
                conn.Open();
                SqlDataReader dr = cmd.ExecuteReader();
                dt.Load(dr);
                conn.Close();
                return dt;
            }
            catch (Exception ex)
            {
                throw ex;
            }
            finally { conn.Close(); }
        }
        }
    }
```

Bug Solution Class:

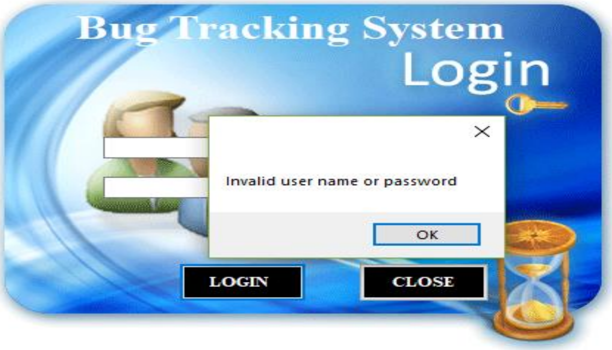
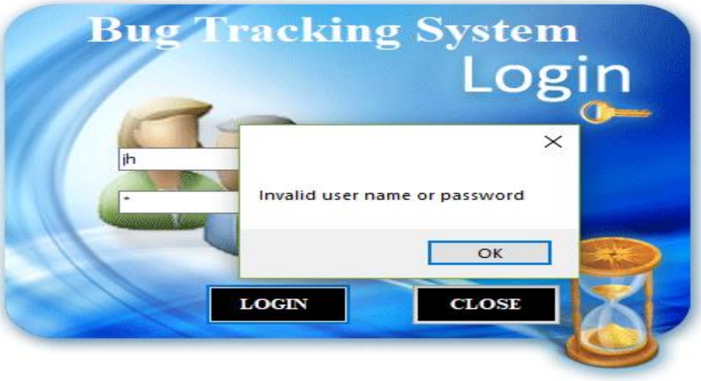
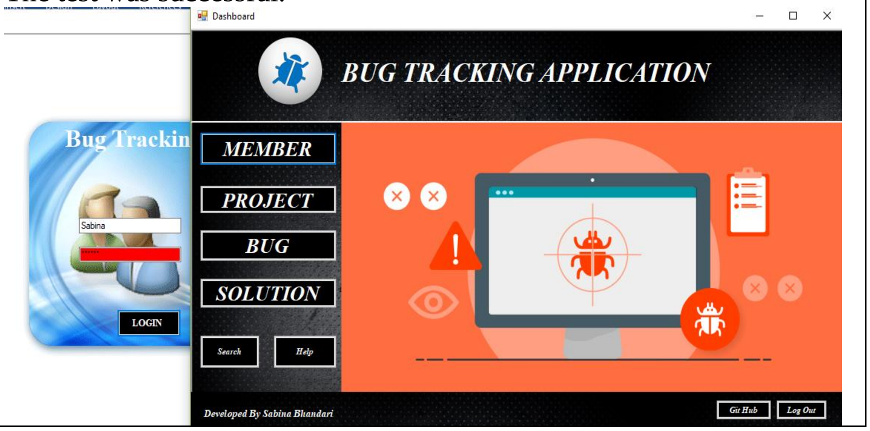
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Data;
using System.Threading.Tasks;
using System.Data.SqlClient;

namespace DataAccessLayer
{
    public class BugSolutionClass
    {
        SqlConnection conn = new SqlConnection(ConnectionClass.ConnectionString);
        public int BugSolutionTable(int BugSolutionId,
            String BugSolvedBy,
            DateTime Date,
            String Project,
            String BugDetails,
            String SolutionDetails,
            String Code,
            byte[] Snap,
            int Mode)
        {
            try
            {
                SqlCommand cmd = new SqlCommand("SP_ManageBugSolutions", conn);
                cmd.CommandType = CommandType.StoredProcedure;
                cmd.Parameters.AddWithValue("@BugsolutionId", BugSolutionId);
                cmd.Parameters.AddWithValue("@BugsolvedBy", BugSolvedBy);
                cmd.Parameters.AddWithValue("@Date", Date);
                cmd.Parameters.AddWithValue("@Project", Project);
                cmd.Parameters.AddWithValue("@BugDetails", BugDetails);
                cmd.Parameters.AddWithValue("@SolutionDetails", SolutionDetails);
                cmd.Parameters.AddWithValue("@Code", Code);
                cmd.Parameters.AddWithValue("@Snap", Snap);
                cmd.Parameters.AddWithValue("@Mode", Mode);
                conn.Open();
                int result = cmd.ExecuteNonQuery();
                conn.Close();
                return result;
            }
            catch (Exception ex)
            {
                throw ex;
            }
            finally { conn.Close(); }
        }
        public DataTable GetAllBugSolutions()
        {
            try
            {
                DataTable dt = new DataTable();
                SqlCommand cmd = new SqlCommand("Select * from BugSolutionTable", conn);
                conn.Open();
                SqlDataReader dr = cmd.ExecuteReader();
                dt.Load(dr);
                conn.Close();
                return dt;
            }
            catch (Exception ex)
            {
                throw ex;
            }
            finally { conn.Close(); }
        }
```

Testing:

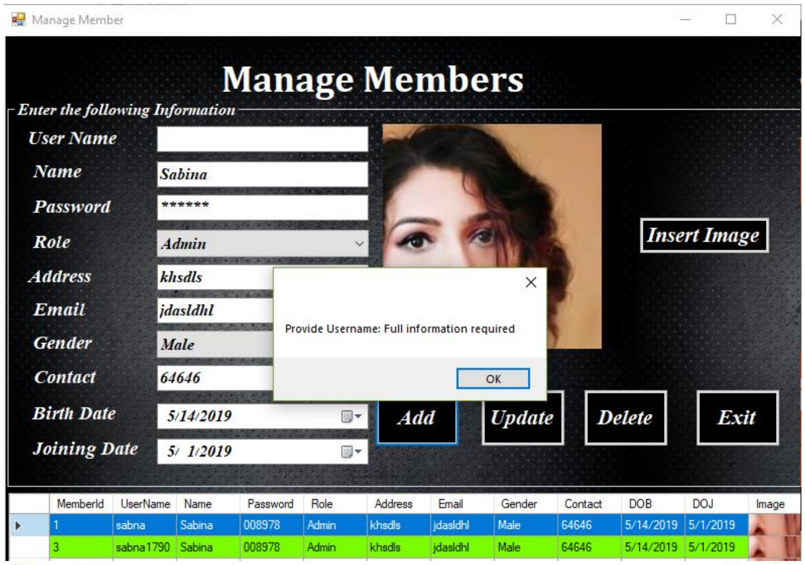
Unit Testing:

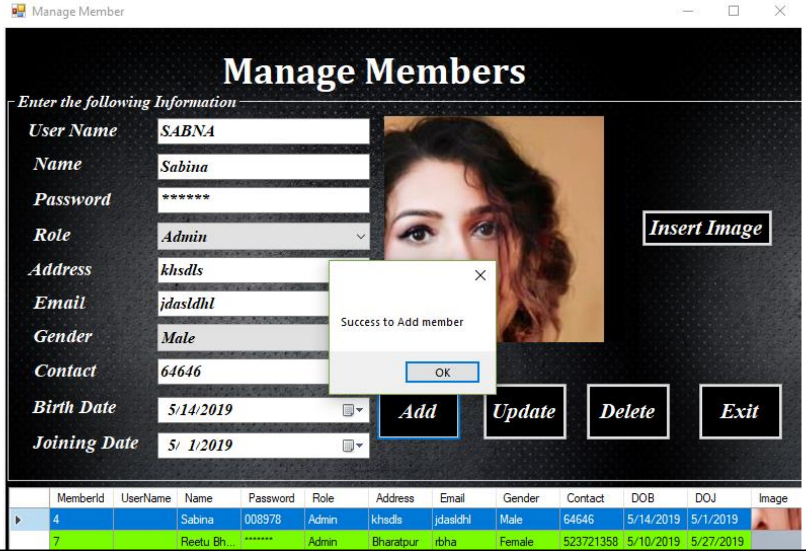
Unit testing is the method which is checked whether the each and every control of the form are working or not. The given table used for unit testing shows the working of the different controls of various forms are success or failure.

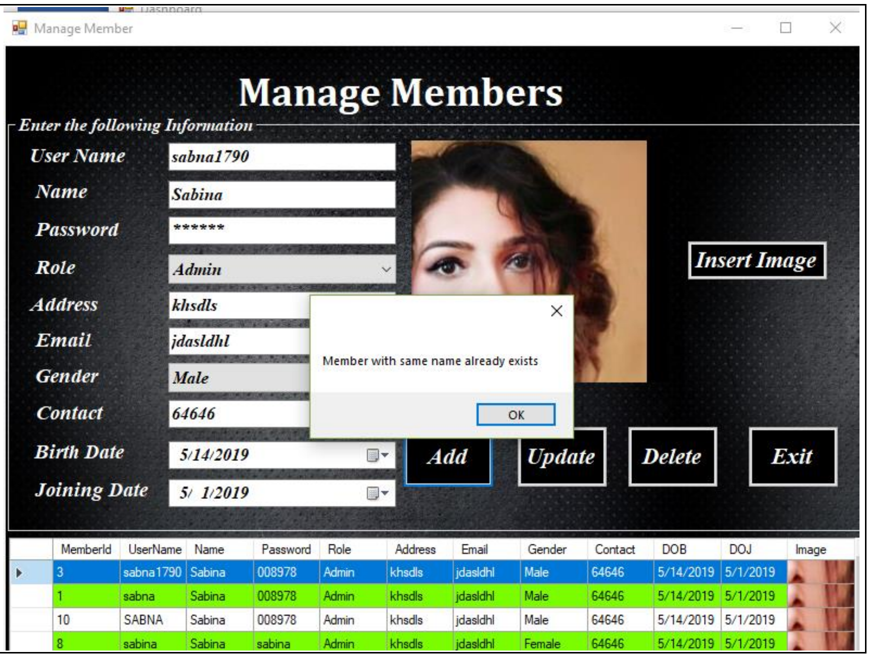
Login Form:

S. N	Test Description	Intended Result	Actual Output	Action / Remarks
1.	Null Space Validation	In case of blank field message should be displayed.	The Login wasn't successful in case of blank field. If username or password wasn't entered.	The test was successful.  Invalid user name or password
2.	Trying to access with wrong username and password	If the Login Username and Password is wrong the login shouldn't be success.	The Login wasn't success in case of wrong username or password.	The test was successful.  ih Invalid user name or password
3.	The Login should be successful if correct user name and password is entered.	The login should provide access to main form after correct information was provided.	The log in was successful after correct username and password was entered in textbox.	The test was successful.  Dashboard BUG TRACKING APPLICATION MEMBER PROJECT BUG SOLUTION Search Help Git Hub Log Out Bug Trackin LOGIN Sabina Developed By Sabina Bhandari

Manage Member:

<table>
<tr><th>S.NO</th><th>Test Description</th><th>Intended Result</th><th>Actual Output</th><th>Action/ Remarks</th></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Null space validation</td><td>When any input field is left blank, adding user becomes unsuccessful.</td><td>Creating User was unsuccessful when any of the fields in the User form was left blank.</td><td rowspan="2">The null validation test was successful.

Manage Member
Manage Members
Enter the following Information
User Name:
Name: Sabina
Password: ******
Role: Admin
Address: khsdls
Email: jdasldhl
Gender: Male
Contact: 64646
Birth Date: 5/14/2019
Joining Date: 5/ 1/2019
Provide Username: Full information required
OK
MemberId | UserName | Name | Password | Role | Address | Email | Gender | Contact | DOB | DOJ | Image
1 | sabna | Sabina | 008978 | Admin | khsdls | jdasldhl | Male | 64646 | 5/14/2019 | 5/1/2019 |
3 | sabna1790 | Sabina | 008978 | Admin | khsdls | jdasldhl | Male | 64646 | 5/14/2019 | 5/1/2019 |


Manage Member
Manage Members
Enter the following Information
User Name: SABNA
Name: Sabina
Password: ******
Role: Admin
Address: khsdls
Email: jdasldhl
Gender: Male
Contact: 64646
Birth Date: 5/14/2019
Joining Date: 5/ 1/2019
Success to Add member
OK
MemberId | UserName | Name | Password | Role | Address | Email | Gender | Contact | DOB | DOJ | Image
4 | | Sabina | 008978 | Admin | khsdls | jdasldhl | Male | 64646 | 5/14/2019 | 5/1/2019 |
7 | | Reetu Bh... | ******* | Admin | Bharatpur | rbha | Female | 523721358 | 5/10/2019 | 5/27/2019 |
 </td></tr>
<tr><td>When all the fields are typed, the creating user was successful.</td><td>The creating user was successful when all the input fields were filled.</td></tr>
<tr><td>3</td><td>Duplicate User Test</td><td>When same user name was entered then Error message should be shown.</td><td>The unsuccessful message was shown as there was already a same username.</td><td>The test was successful.</td></tr>
</table>

Manage Member

Manage Members

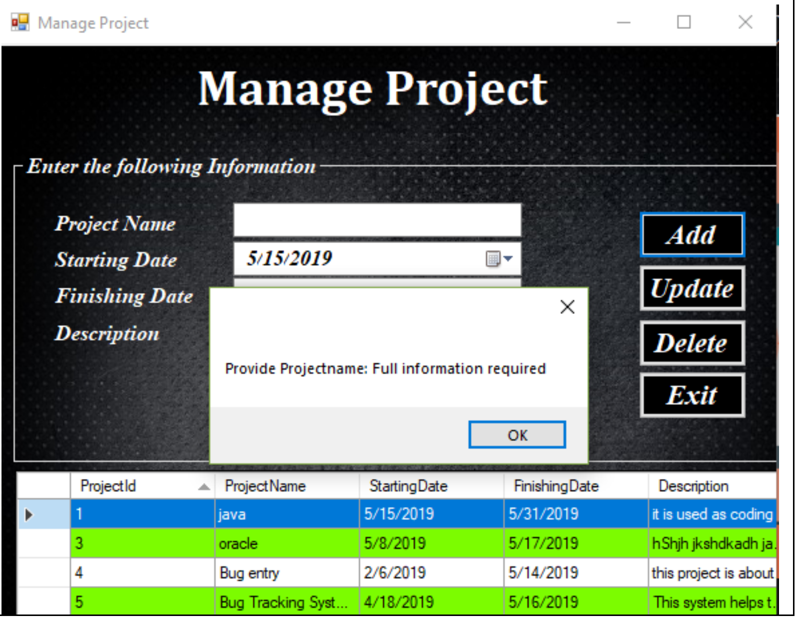
Enter the following Information

User Name sabna1790
Name Sabina
Password ******
Role Admin
Address khsdls
Email jdasldhl
Gender Male
Contact 64646
Birth Date 5/14/2019
Joining Date 5/ 1/2019

Member with same name already exists

MemberId	UserName	Name	Password	Role	Address	Email	Gender	Contact	DOB	DOJ	Image
3	sabna1790	Sabina	008978	Admin	khsdls	jdasldhl	Male	64646	5/14/2019	5/1/2019	
1	sabna	Sabina	008978	Admin	khsdls	jdasldhl	Male	64646	5/14/2019	5/1/2019	
10	SABNA	Sabina	008978	Admin	khsdls	jdasldhl	Male	64646	5/14/2019	5/1/2019	
8	sabina	Sabina	sabina	Admin	khsdls	jdasldhl	Female	64646	5/14/2019	5/1/2019	

Manage Project:

S.NO	**Test Description**	**Intended output**	**Actual Output**	**Remarks / Action**
1	Null space validation	When any input field is left blank, the process becomes unsuccessful.	The process was unsuccessful when any of the fields in the Category Form was left blank.	The null validation test was successful. 
		When all the fields are filled, the process successes.	The process was successful when all the fields were filled.	

Manage Project

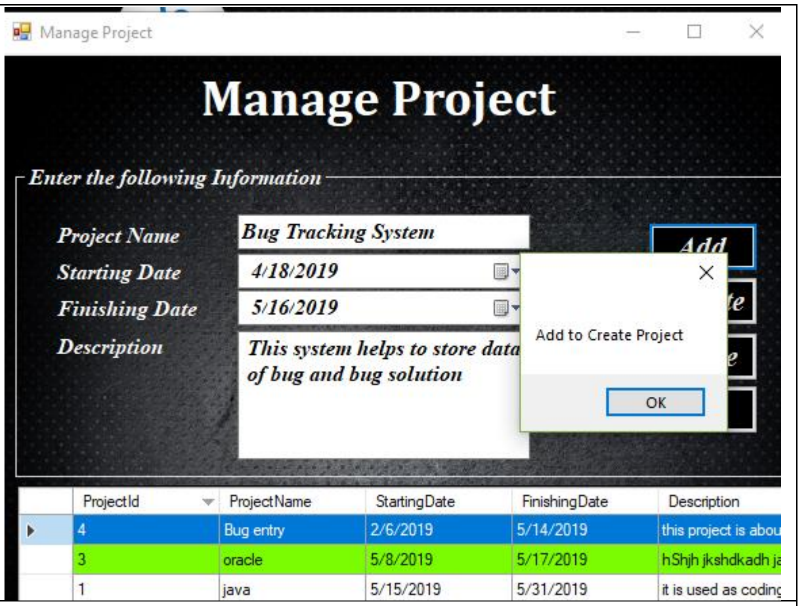
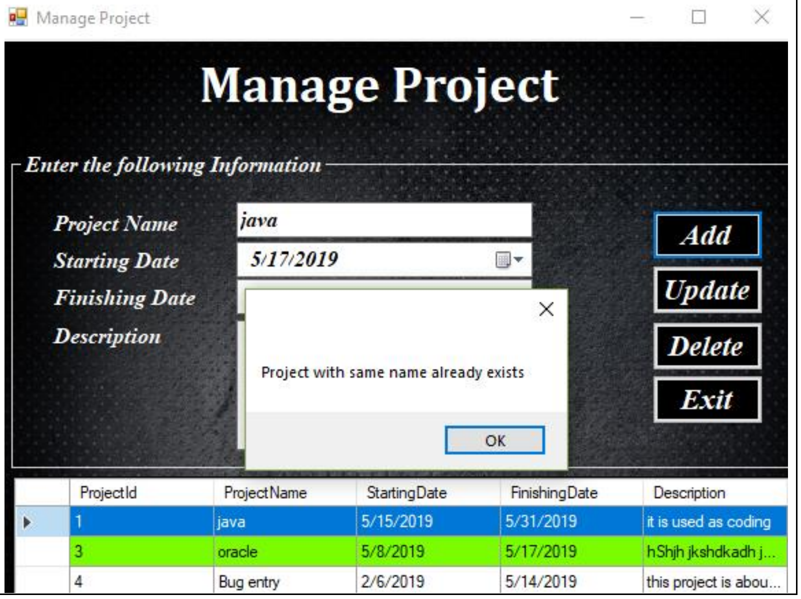
Manage Project

Enter the following Information

Project Name
Starting Date 5/15/2019
Finishing Date
Description

Provide Projectname: Full information required

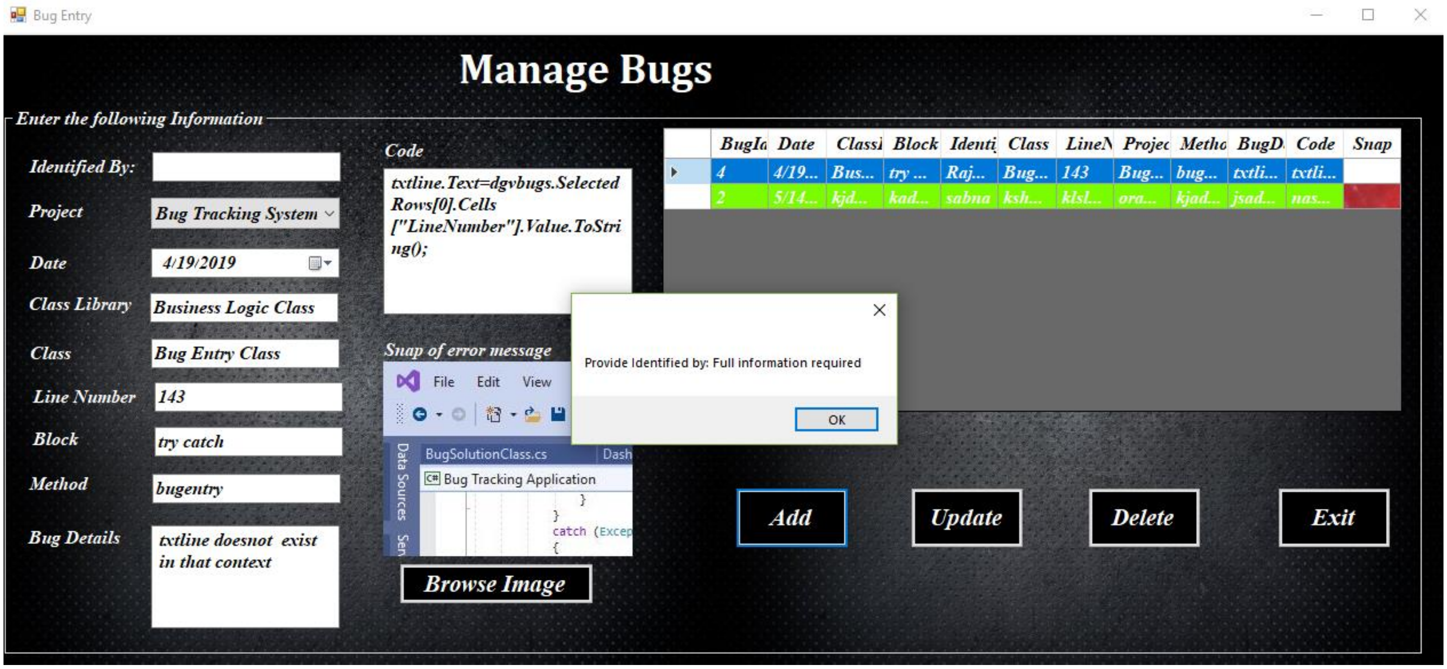
ProjectId	ProjectName	StartingDate	FinishingDate	Description
1	java	5/15/2019	5/31/2019	it is used as coding
3	oracle	5/8/2019	5/17/2019	hShjh jkshdkadh ja.
4	Bug entry	2/6/2019	5/14/2019	this project is about
5	Bug Tracking Syst...	4/18/2019	5/16/2019	This system helps t.

				 Manage Project Enter the following Information Project Name: Bug Tracking System Starting Date: 4/18/2019 Finishing Date: 5/16/2019 Description: This system helps to store data of bug and bug solution Add to Create Project OK ProjectId · ProjectName · StartingDate · FinishingDate · Description 4 · Bug entry · 2/6/2019 · 5/14/2019 · this project is abou 3 · oracle · 5/8/2019 · 5/17/2019 · hShjh jkshdkadh ja 1 · java · 5/15/2019 · 5/31/2019 · it is used as codinc
2	Duplicate category testing	Repetition of Same Category Name is not allowed.	The process was unsuccessful when same category name was added.	The test result was Successful.  Manage Project Enter the following Information Project Name: java Starting Date: 5/17/2019 Finishing Date Description Project with same name already exists OK ProjectId · ProjectName · StartingDate · FinishingDate · Description 1 · java · 5/15/2019 · 5/31/2019 · it is used as coding 3 · oracle · 5/8/2019 · 5/17/2019 · hShjh jkshdkadh j... 4 · Bug entry · 2/6/2019 · 5/14/2019 · this project is abou...

Manage Bug:

S.NO	**Test Description**	**Intended output**	**Actual Output**	**Remarks / Action**
1	Null Space Validation	When any input field is left blank, the Process becomes unsuccessful.	The process was unsuccessful when fields were left blank.	The null Validation test was successful.

2	Null Space Validation	When all information was added then the process got success.	The process got success when all the input fields were filled.	The null Validation test was successful.



Bug Entry

Manage Bugs

Enter the following Information

Identified By:

Project: Bug Tracking System

Date: 4/19/2019

Class Library: Business Logic Class

Class: Bug Entry Class

Line Number: 143

Block: try catch

Method: bugentry

Bug Details: txtline doesnot exist in that context

Code

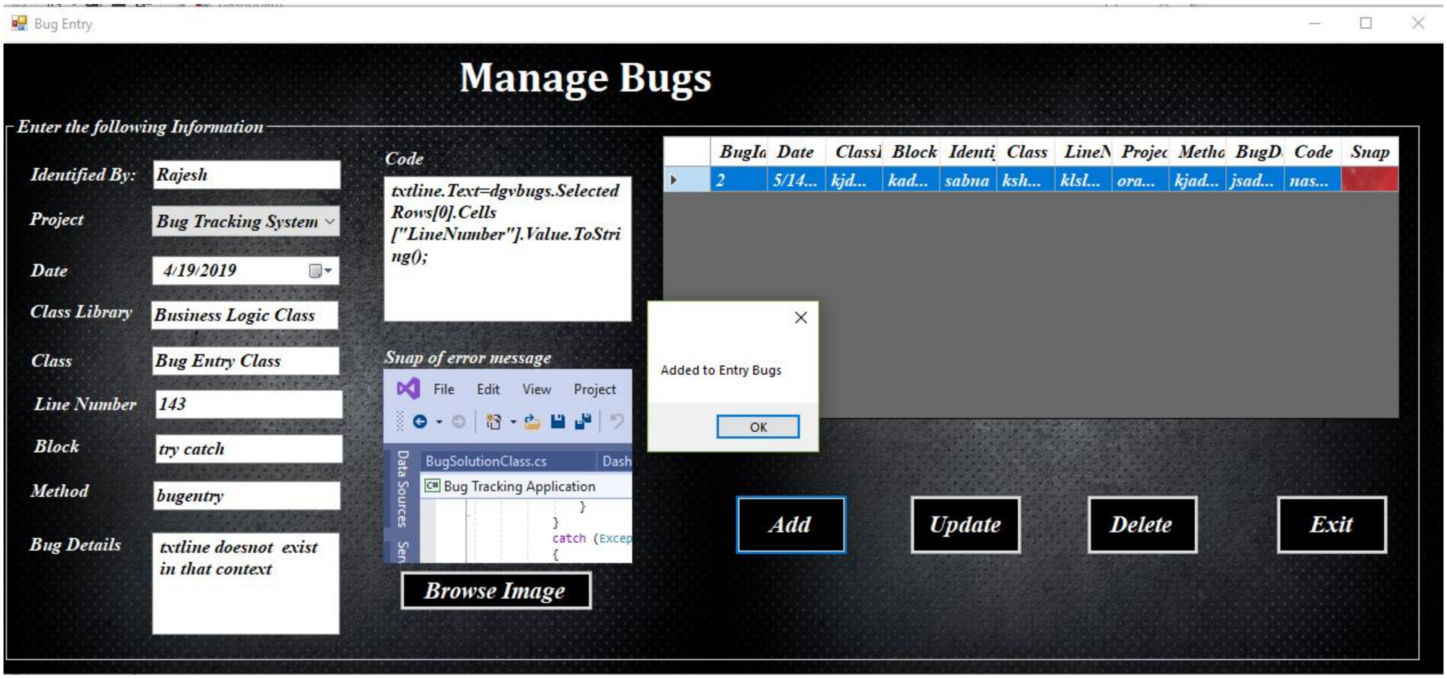
```
txtline.Text=dgvbugs.Selected
Rows[0].Cells
["LineNumber"].Value.ToStri
ng();
```

Snap of error message

BugId	Date	ClassL	Block	Identi	Class	LineN	Projec	Metho	BugD.	Code	Snap
4	4/19...	Bus...	try ...	Raj...	Bug...	143	Bug...	bug...	txtli...	txtli...	
2	5/14...	kjd...	kad...	sabna	ksh...	klsl...	ora...	kjad...	jsad...	nas...	🟥

Provide Identified by: Full information required

OK



Bug Entry

Manage Bugs

Enter the following Information

Identified By: Rajesh

Project: Bug Tracking System

Date: 4/19/2019

Class Library: Business Logic Class

Class: Bug Entry Class

Line Number: 143

Block: try catch

Method: bugentry

Bug Details: txtline doesnot exist in that context

Code

```
txtline.Text=dgvbugs.Selected
Rows[0].Cells
["LineNumber"].Value.ToStri
ng();
```

Snap of error message

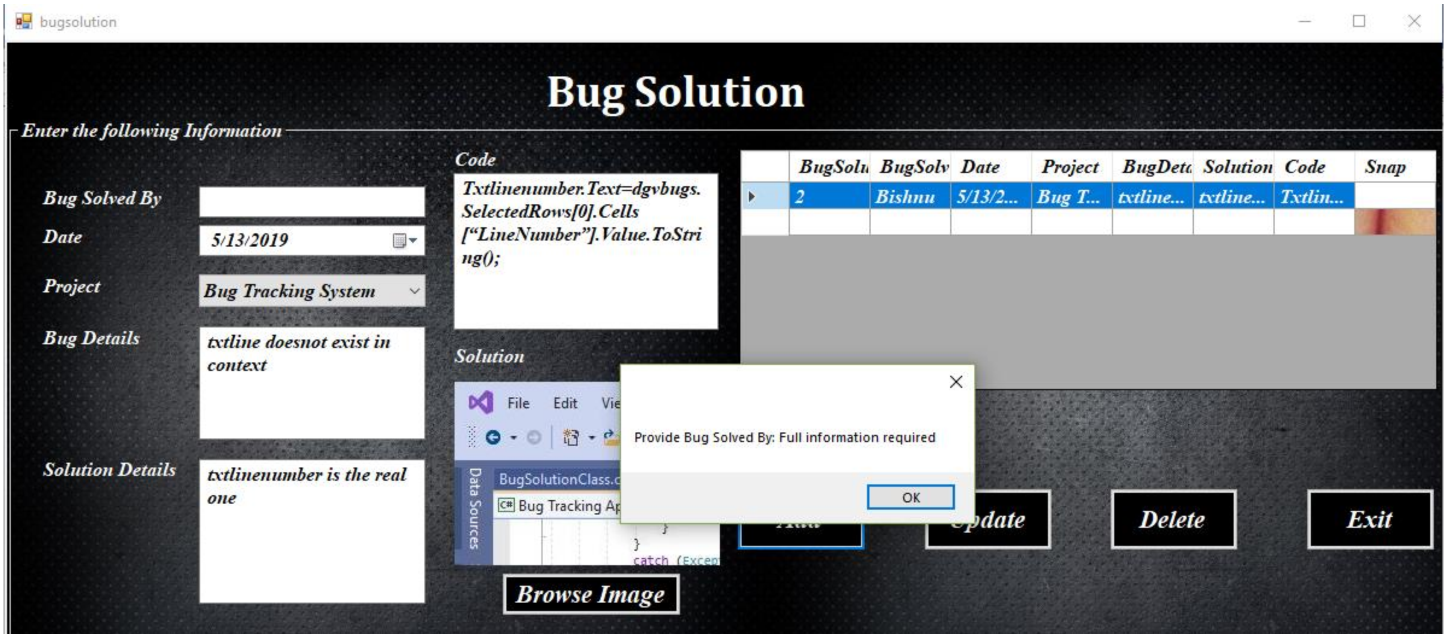
BugId	Date	ClassL	Block	Identi	Class	LineN	Projec	Metho	BugD.	Code	Snap
2	5/14...	kjd...	kad...	sabna	ksh...	klsl...	ora...	kjad...	jsad...	nas...	🟥

Added to Entry Bugs

OK

Manage Bug Solution:

S.NO	Test Description	Intended output	Actual Output	Remarks / Action
1	Null Space Validation	When any input field is left blank, the Process becomes unsuccessful.	The process was successful when fields were left blank.	The null Validation test was not successful.
2	Null Space Validation	When all information was added then the process got success.	The process got success when all the input fields were filled.	The null Validation test was successful.



bugsolution

Bug Solution

Enter the following Information

Bug Solved By:

Date: 5/13/2019

Project: Bug Tracking System

Bug Details: txtline doesnot exist in context

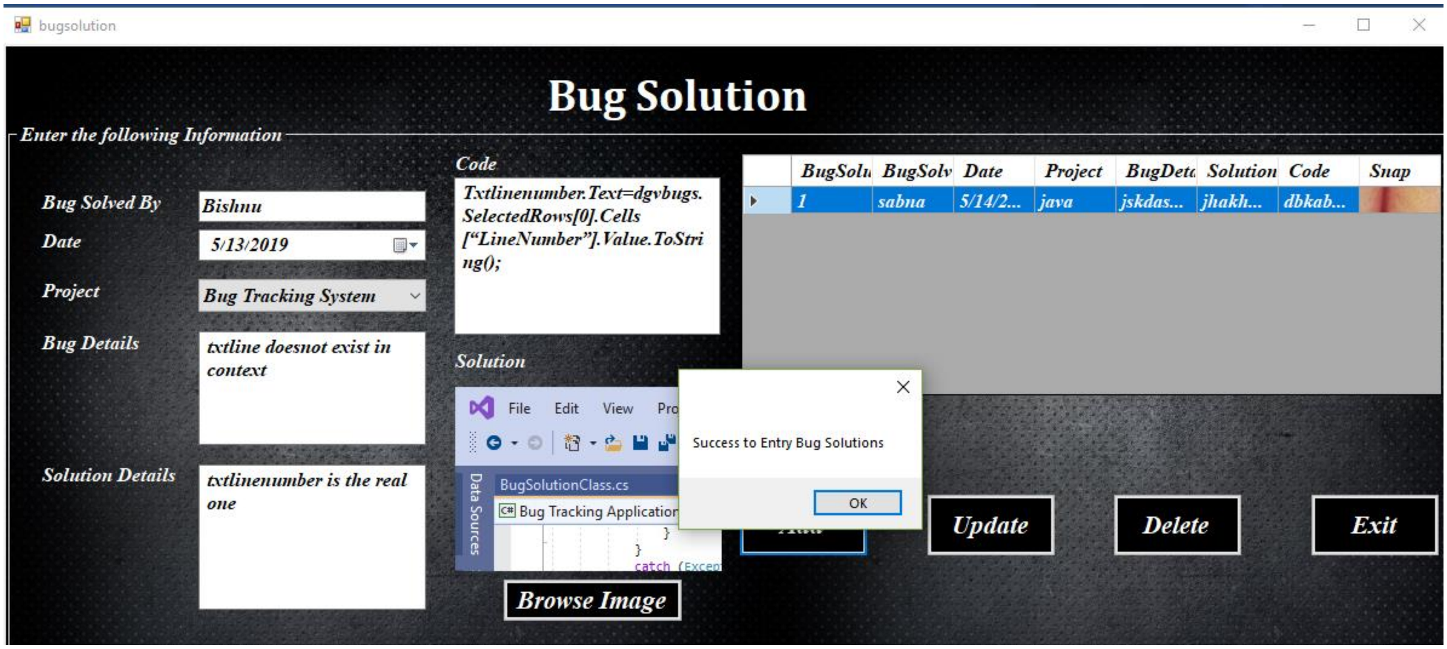
Solution Details: txtlinenumber is the real one

Code:

```
Txtlinenumber.Text=dgvbugs.SelectedRows[0].Cells["LineNumber"].Value.ToString();
```

	BugSolu	BugSolv	Date	Project	BugDeta	Solution	Code	Snap
▸	2	Bishnu	5/13/2...	Bug T...	txtline...	txtline...	Txtlin...	

Provide Bug Solved By: Full information required



Bug Solved By: Bishnu

Date: 5/13/2019

Project: Bug Tracking System

Bug Details: txtline doesnot exist in context

Solution Details: txtlinenumber is the real one

Code: Txtlinenumber.Text=dgvbugs.SelectedRows[0].Cells["LineNumber"].Value.ToString();

BugSolu	BugSolv	Date	Project	BugDeta	Solution	Code	Snap
1	sabna	5/14/2...	java	jskdas...	jhakh...	dbkab...	

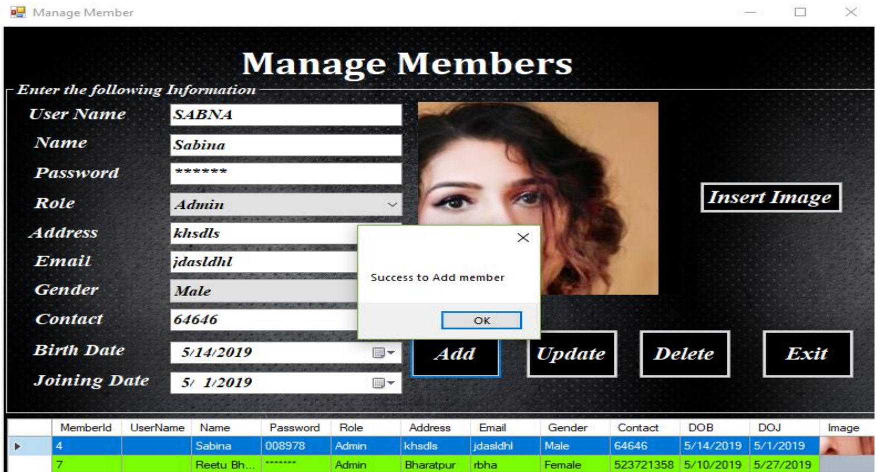
Success to Entry Bug Solutions

Integrated Testing:

For checking the proper working of the save, update and delete buttons which is used in the form is done through integrated testing. The given table shows success or failure of the integration testing done from project.

Manage Member Form:

S.NO	Test Description	Intended output	Actual Output	Action / Remarks
1	The working of Add button	After clicked on save button, member need to be added and saved in the database.	As per expected result Member is added and saved in the database.	The test was successful.
2	The working of Update button	After clicked on update button, member need to be updated.	As per expected result member is updated.	The test result was successful.
3	The working of Delete button	After clicked on delete button, member need to be deleted.	As per expected result member deleted.	The test result was successful.



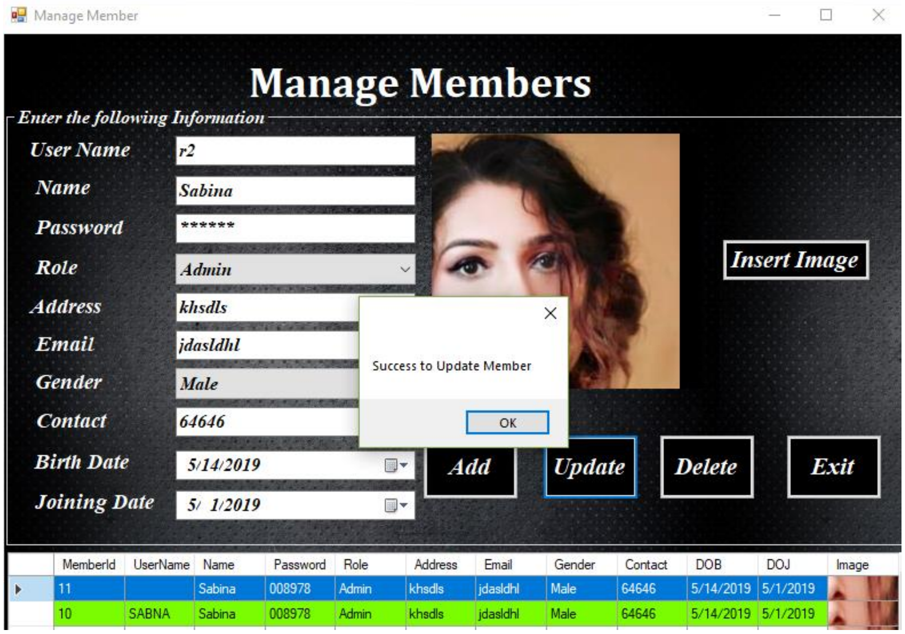
Manage Members

Enter the following Information

User Name: SABNA
Name: Sabina
Password: ******
Role: Admin
Address: khsdls
Email: jdasldhl
Gender: Male
Contact: 64646
Birth Date: 5/14/2019
Joining Date: 5/ 1/2019

Success to Add member

	MemberId	UserName	Name	Password	Role	Address	Email	Gender	Contact	DOB	DOJ	Image
▸	4		Sabina	008978	Admin	khsdls	jdasldhl	Male	64646	5/14/2019	5/1/2019	
	7		Reetu Bh...	*******	Admin	Bharatpur	rbha	Female	523721358	5/10/2019	5/27/2019	



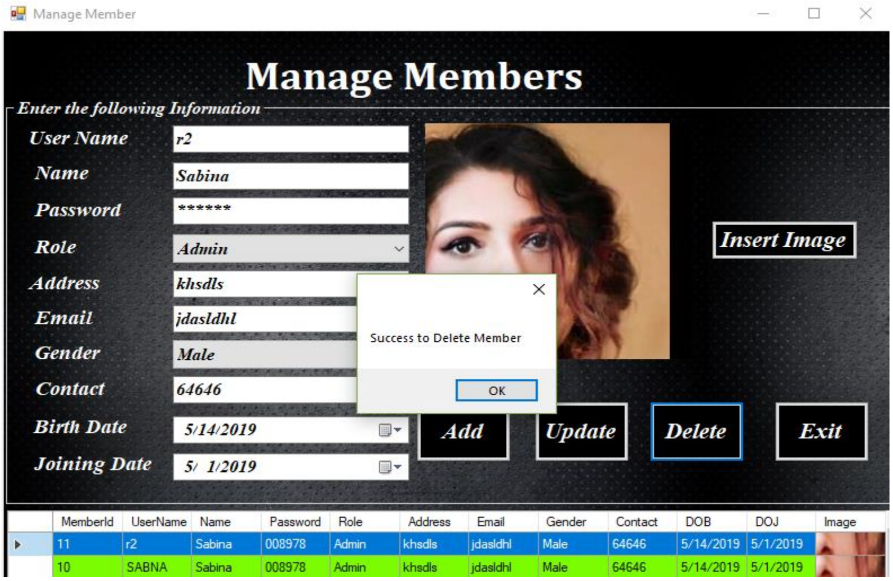
Manage Members

Enter the following Information

User Name: r2
Name: Sabina
Password: ******
Role: Admin
Address: khsdls
Email: jdasldhl
Gender: Male
Contact: 64646
Birth Date: 5/14/2019
Joining Date: 5/ 1/2019

Success to Update Member

	MemberId	UserName	Name	Password	Role	Address	Email	Gender	Contact	DOB	DOJ	Image
▸	11		Sabina	008978	Admin	khsdls	jdasldhl	Male	64646	5/14/2019	5/1/2019	
	10	SABNA	Sabina	008978	Admin	khsdls	jdasldhl	Male	64646	5/14/2019	5/1/2019	



Manage Members

Enter the following Information

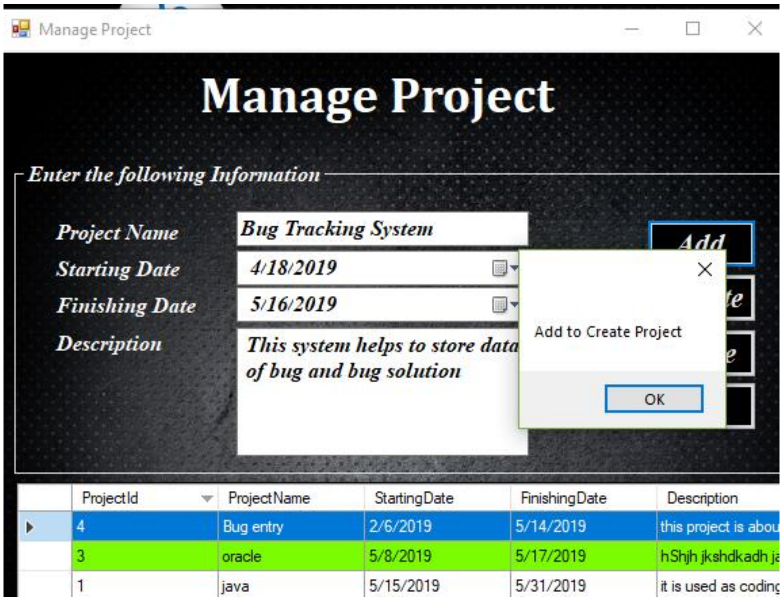
User Name: r2
Name: Sabina
Password: ******
Role: Admin
Address: khsdls
Email: jdasldhl
Gender: Male
Contact: 64646
Birth Date: 5/14/2019
Joining Date: 5/ 1/2019

Success to Delete Member

	MemberId	UserName	Name	Password	Role	Address	Email	Gender	Contact	DOB	DOJ	Image
▸	11	r2	Sabina	008978	Admin	khsdls	jdasldhl	Male	64646	5/14/2019	5/1/2019	
	10	SABNA	Sabina	008978	Admin	khsdls	jdasldhl	Male	64646	5/14/2019	5/1/2019	

Integrated Testing of Manage project Form:

S. N	Test Description	Intended Output	Actual Output	Action / Remarks
1.	The working of Add button	After clicked on save button, project need to be added and saved in the database.	As per expected result project is added and saved in the database.	Tested successfully.
2.	The working of Update button	After clicked on update button, project need to be updated.	As per expected result project is updated.	Tested successfully.
3.	The working of Delete button	After clicked on delete button, project need to be deleted.	As per expected result project deleted.	Tested successfully.



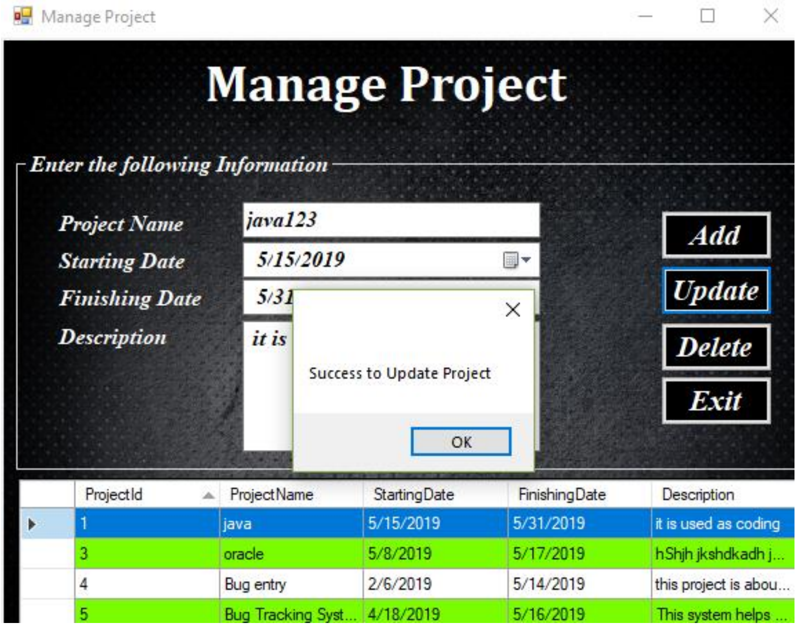
Manage Project

Enter the following Information

Project Name: Bug Tracking System
Starting Date: 4/18/2019
Finishing Date: 5/16/2019
Description: This system helps to store data of bug and bug solution

Add to Create Project

ProjectId	ProjectName	StartingDate	FinishingDate	Description
4	Bug entry	2/6/2019	5/14/2019	this project is abou
3	oracle	5/8/2019	5/17/2019	hShjh jkshdkadh ja
1	java	5/15/2019	5/31/2019	it is used as coding



Manage Project

Enter the following Information

Project Name: java123

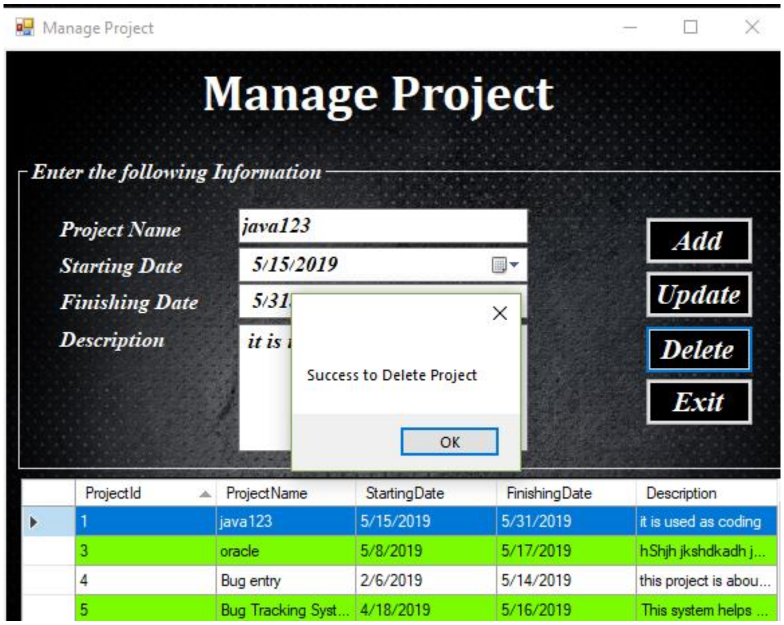
Starting Date: 5/15/2019

Finishing Date: 5/31

Description: it is

Success to Update Project

	ProjectId	ProjectName	StartingDate	FinishingDate	Description
▶	1	java	5/15/2019	5/31/2019	it is used as coding
	3	oracle	5/8/2019	5/17/2019	hShjh jkshdkadh j...
	4	Bug entry	2/6/2019	5/14/2019	this project is abou...
	5	Bug Tracking Syst...	4/18/2019	5/16/2019	This system helps ...



Manage Project

Enter the following Information

Project Name: java123

Starting Date: 5/15/2019

Finishing Date: 5/31

Description: it is i

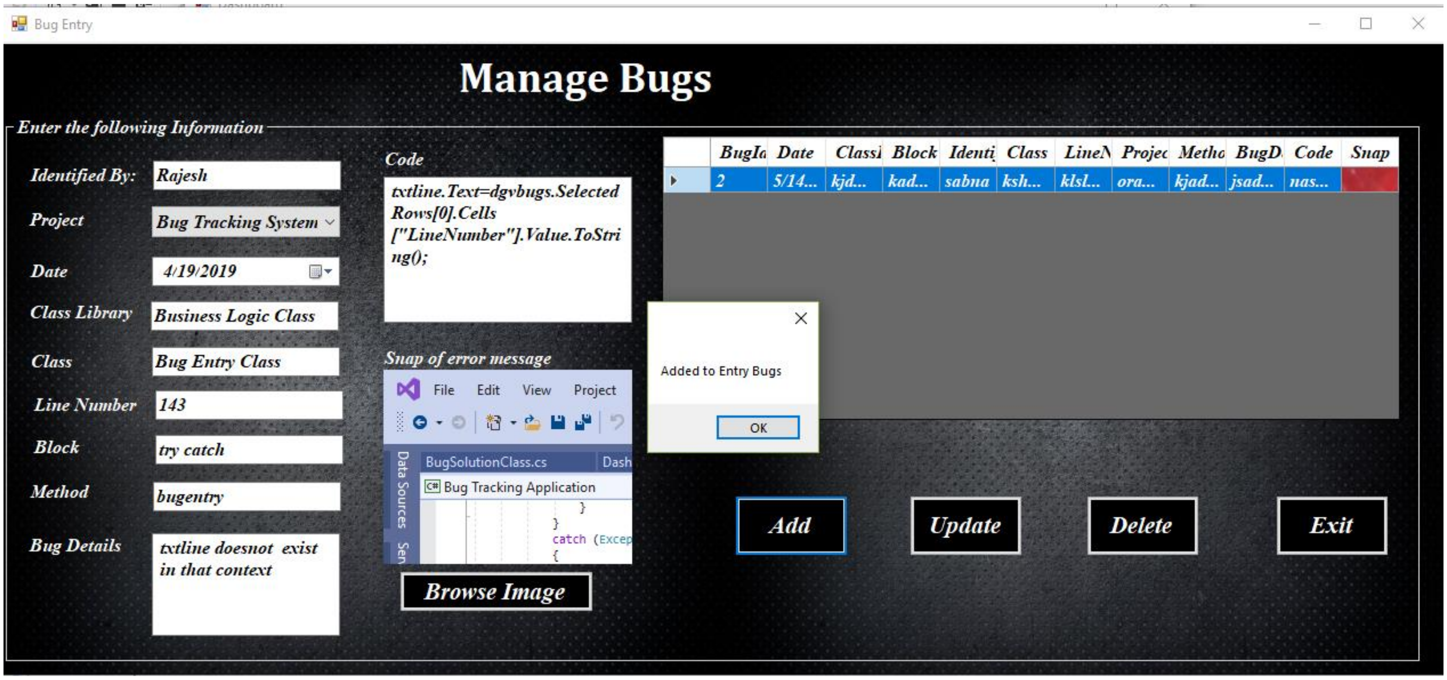
Success to Delete Project

	ProjectId	ProjectName	StartingDate	FinishingDate	Description
▶	1	java123	5/15/2019	5/31/2019	it is used as coding
	3	oracle	5/8/2019	5/17/2019	hShjh jkshdkadh j...
	4	Bug entry	2/6/2019	5/14/2019	this project is abou...
	5	Bug Tracking Syst...	4/18/2019	5/16/2019	This system helps ...

Integrated Testing for Manage bug:

S. N	Test Description	Intended Output	Actual Output	Action / Remarks
1.	The working of Add button	After clicked on save button, Bug need to be added and saved in the database.	As per expected result Bug is added and saved in the database.	Tested successfully.

2.	The working of Update button	After clicked on update button, Bug need to be updated.	As per expected result Bug is updated.	Tested successfully.
3.	The working of Delete button	After clicked on delete button, Bug need to be deleted.	As per expected result Bug deleted.	Tested successfully.



Identified By:	Rajesh
Project	Bug Tracking System
Date	4/19/2019
Class Library	Business Logic Class
Class	Bug Entry Class
Line Number	143
Block	try catch
Method	bugentry
Bug Details	txtline doesnot exist in that context

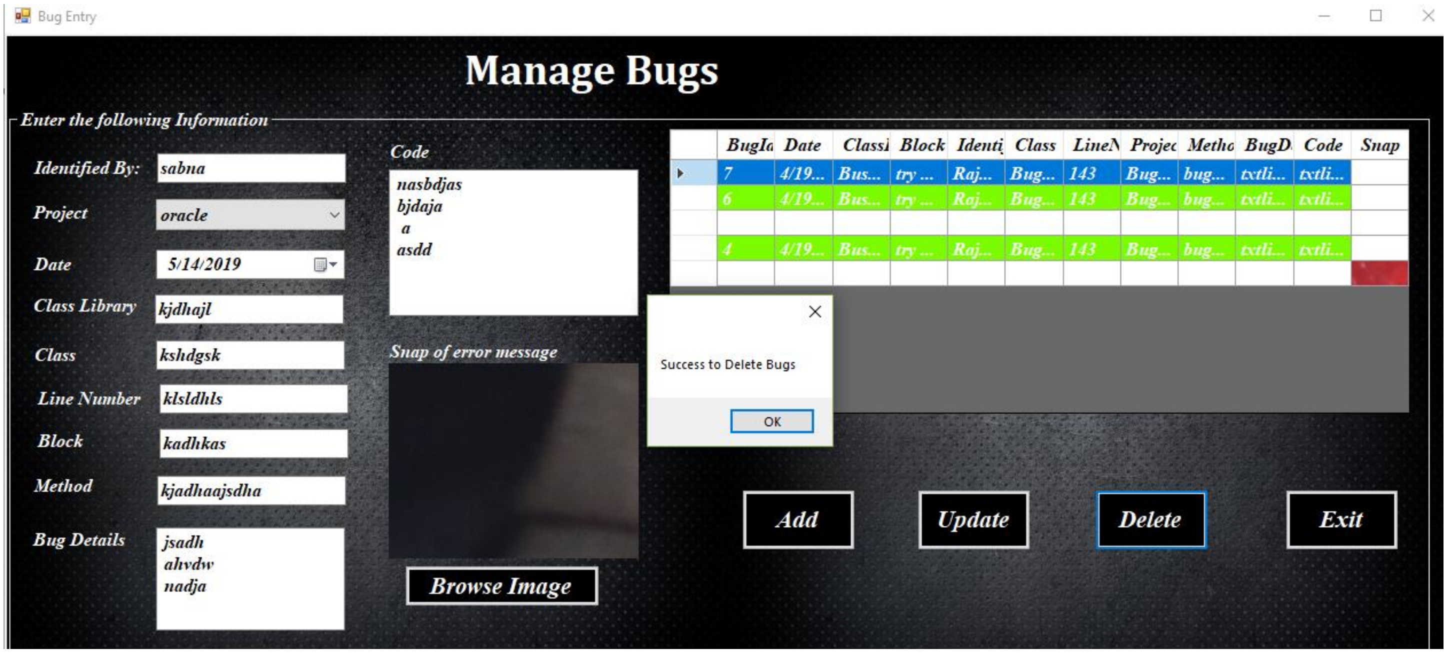
Code

```
txtline.Text=dgvbugs.Selected
Rows[0].Cells
["LineNumber"].Value.ToStri
ng();
```

```
            }
        }
        catch (Excep
        {
```

Added to Entry Bugs

	BugIa	Date	ClassI	Block	Identi	Class	LineN	Projec	Metho	BugD	Code	Snap
▶	2	5/14...	kjd...	kad...	sabna	ksh...	klsl...	ora...	kjad...	jsad...	nas...	🟥



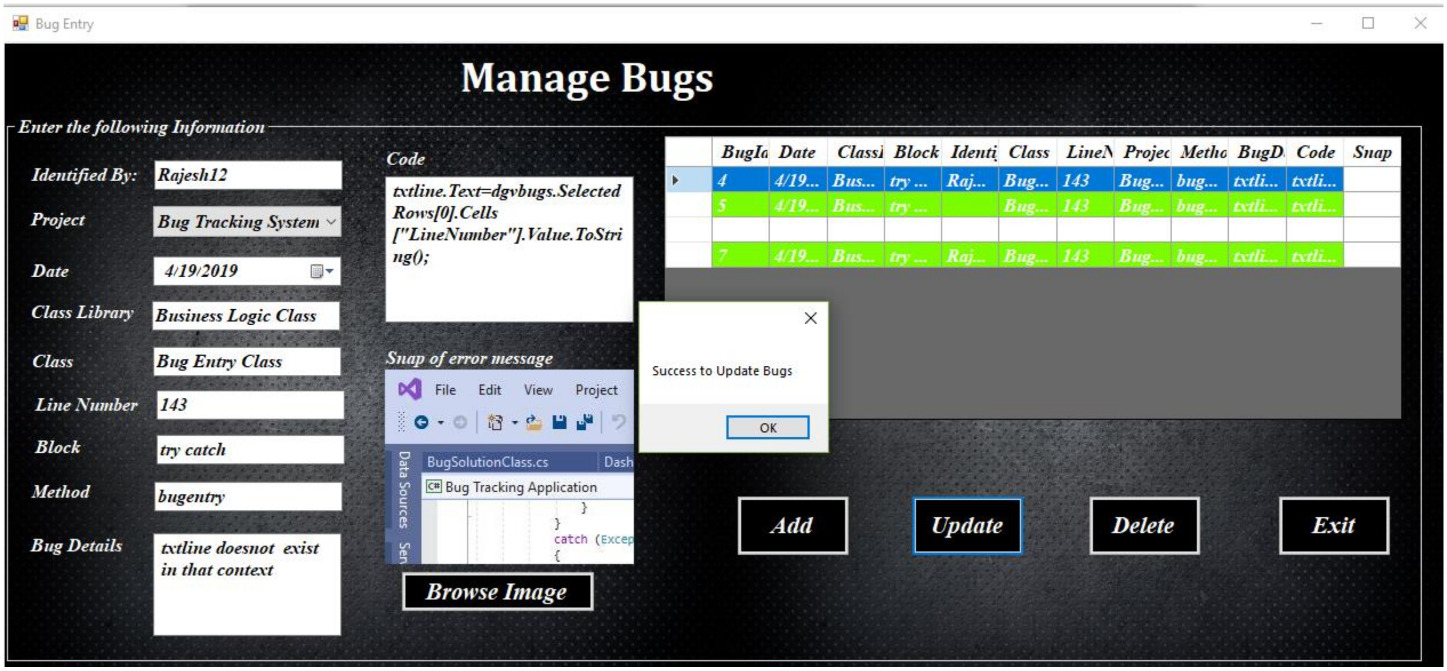
Identified By:	sabna
Project	oracle
Date	5/14/2019
Class Library	kjdhajl
Class	kshdgsk
Line Number	klsldhls
Block	kadhkas
Method	kjadhaajsdha
Bug Details	jsadh ahvdw nadja

Code

```
nasbdjas
bjdaja
 a
asdd
```

Success to Delete Bugs

	BugIa	Date	ClassI	Block	Identi	Class	LineN	Projec	Metho	BugD	Code	Snap
▶	7	4/19...	Bus...	try ...	Raj...	Bug...	143	Bug...	bug...	txtli...	txtli...	
	6	4/19...	Bus...	try ...	Raj...	Bug...	143	Bug...	bug...	txtli...	txtli...	
	4	4/19...	Bus...	try ...	Raj...	Bug...	143	Bug...	bug...	txtli...	txtli...	
												🟥



Manage Bugs

Enter the following Information

Identified By: Rajesh12

Project: Bug Tracking System

Date: 4/19/2019

Class Library: Business Logic Class

Class: Bug Entry Class

Line Number: 143

Block: try catch

Method: bugentry

Bug Details: txtline doesnot exist in that context

Code

```
txtline.Text=dgvbugs.Selected
Rows[0].Cells
["LineNumber"].Value.ToStri
ng();
```

Snap of error message

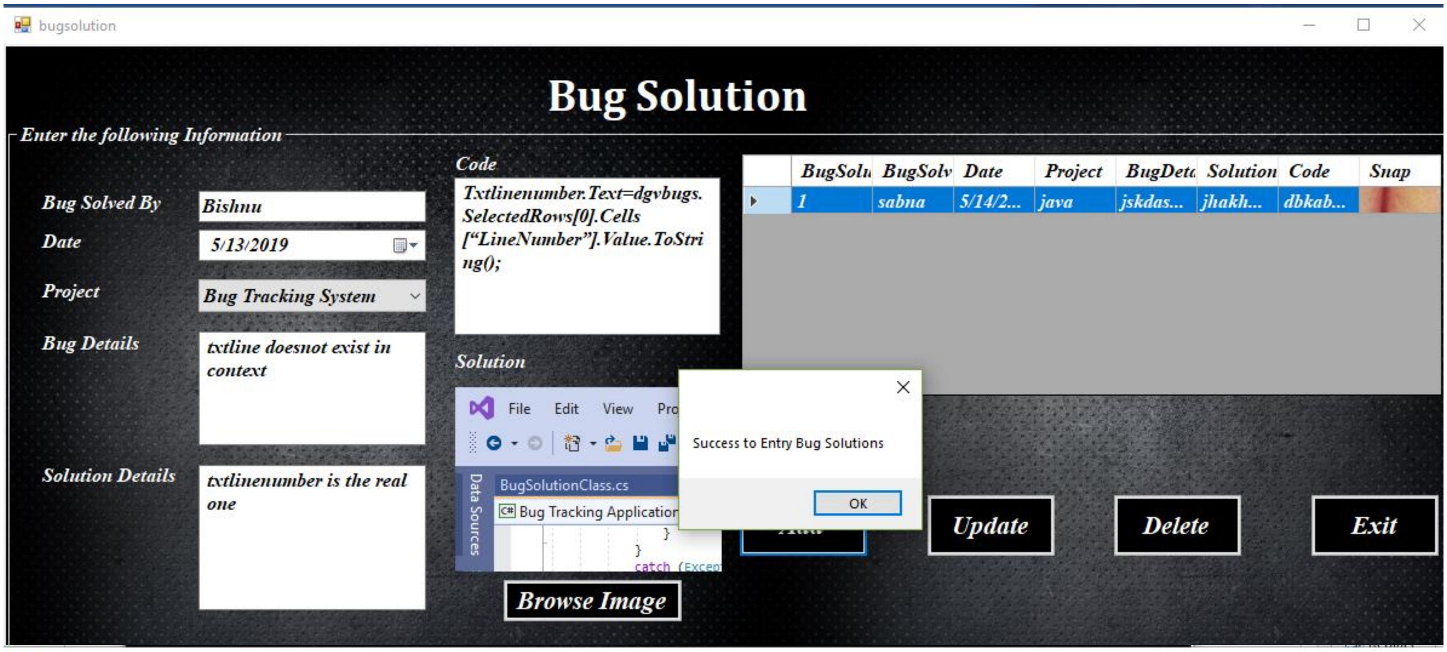
```
                    }
                }
                catch (Excep
                {
```

	BugIa	Date	ClassI	Block	Identi	Class	LineN	Projec	Metho	BugD	Code	Snap
▶	4	4/19...	Bus...	try ...	Raj...	Bug...	143	Bug...	bug...	txtli...	txtli...	
	5	4/19...	Bus...	try ...		Bug...	143	Bug...	bug...	txtli...	txtli...	
	7	4/19...	Bus...	try ...	Raj...	Bug...	143	Bug...	bug...	txtli...	txtli...	

Success to Update Bugs

Integrated Testing for Manage bug solution:

S. N	Test Description	Intended Output	Actual Output	Action / Remarks
1.	The working of Add button	After clicked on save button, Bug solution need to be added and saved in the database.	As per expected result Bug solution is added and saved in the database.	Tested successfully.
2.	The working of Update button	After clicked on update button, Bug solution need to be updated.	As per expected result Bug solution is updated.	Tested successfully.
3.	The working of Delete button	After clicked on delete button, Bug solution need to be deleted.	As per expected result Bug solution deleted.	Tested successfully.



Bug Solution

Enter the following Information

Bug Solved By: Bishnu

Date: 5/13/2019

Project: Bug Tracking System

Bug Details: txtline doesnot exist in context

Solution Details: txtlinenumber is the real one

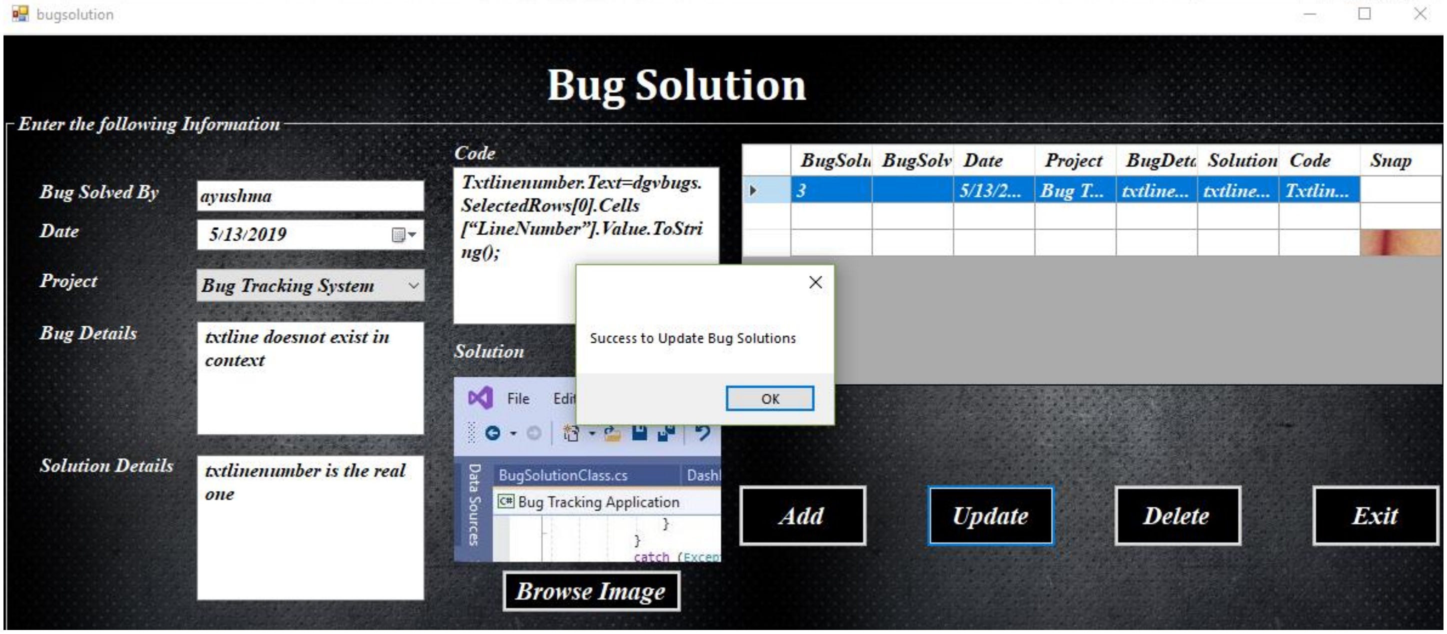
Code:

```
Txtlinenumber.Text=dgvbugs.
SelectedRows[0].Cells
[“LineNumber”].Value.ToStri
ng();
```

Solution:

BugSolu	BugSolv	Date	Project	BugDeta	Solution	Code	Snap
1	sabna	5/14/2...	java	jskdas...	jhakh...	dbkab...	

Success to Entry Bug Solutions



Bug Solution

Enter the following Information

Bug Solved By: ayushma

Date: 5/13/2019

Project: Bug Tracking System

Bug Details: txtline doesnot exist in context

Solution Details: txtlinenumber is the real one

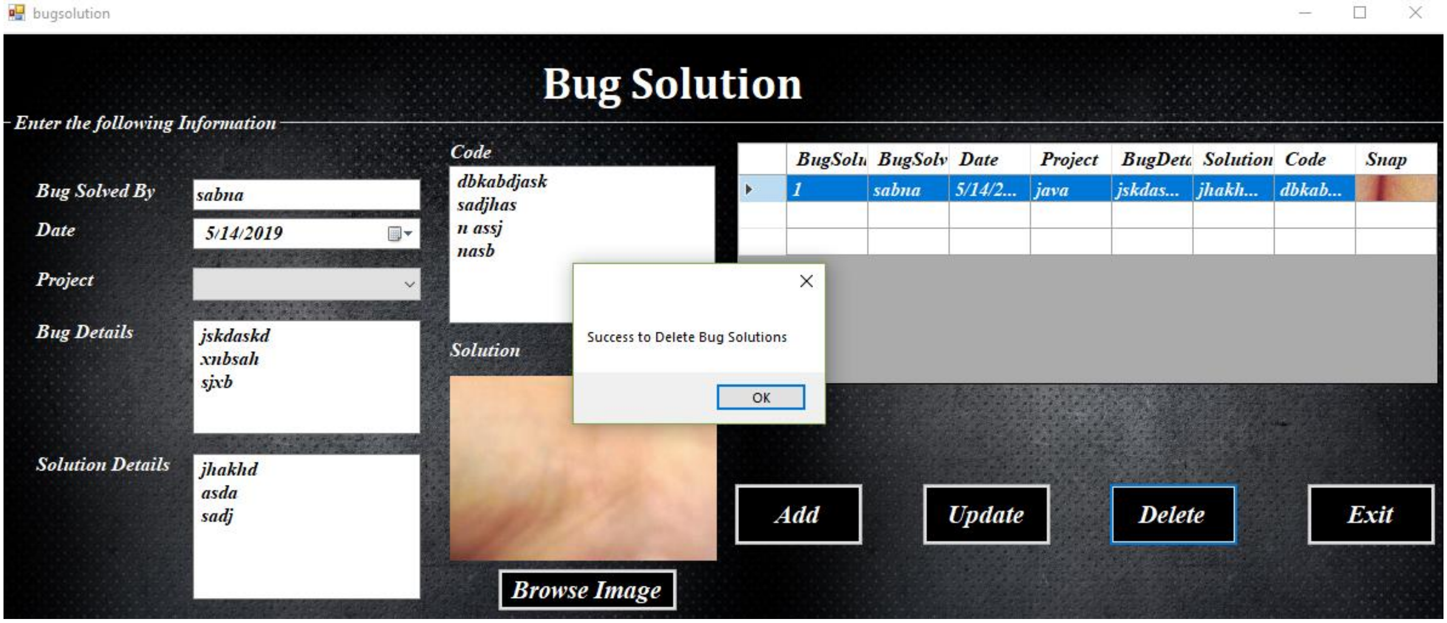
Code:

```
Txtlinenumber.Text=dgvbugs.
SelectedRows[0].Cells
[“LineNumber”].Value.ToStri
ng();
```

Solution:

BugSolu	BugSolv	Date	Project	BugDeta	Solution	Code	Snap
3		5/13/2...	Bug T...	txtline...	txtline...	Txtlin...	

Success to Update Bug Solutions



Bug Solution

Enter the following Information

Bug Solved By: sabna

Date: 5/14/2019

Project:

Bug Details:
jskdaskd
xnbsah
sjxb

Solution Details:
jhakhd
asda
sadj

Code:
dbkabdjask
sadjhas
n assj
nasb

Solution

BugSolu	BugSolv	Date	Project	BugDeta	Solution	Code	Snap
1	sabna	5/14/2...	java	jskdas...	jhakh...	dbkab...	

Success to Delete Bug Solutions