

Name	Lehjanny Ann V. Ilao			Date	06/21/2022
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SOURCE CODE

• FORM1

```
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 Library_System;
using Library_System.Forms;
using Library_System.Data_Model;
using Libray_System;
using Libray_System.Forms;
using Libray_System.Data_Model;

namespace Library_System
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
            User.Deserialize();
            Author.Deserialize();
            Student.Deserialize();
            Book.Deserialize();
            Book_Borrowed.Deserialize();
            Book_Category.Deserialize();
            Position.Deserialize();
        }

        private void userToolStripMenuItem_Click(object sender, EventArgs e)
        {
            ShowList<User> s = new ShowList<User>()
            {
                Lists = User.Lists,
                AddEditForm = new AddEditUser(),
                DeleteMethod = User.Delete,
                SearchMethod = User.Search,
                ObjectType = Libray_System.Type.User
            };

            s.Show();
        }

        private void Form1_Load(object sender, EventArgs e) // Kapag nagload na yung form, Una
        itong bubukas, yung LOGIN form
        {
            Login login = new Login();
            if (login.ShowDialog() != DialogResult.OK) //Kapag Hindi OK ang pinili, magkoClose
            ang Application
                Application.Exit();
        }

        private void authorToolStripMenuItem_Click(object sender, EventArgs e)
        {
            ShowList<Author> s = new ShowList<Author>()
            {
                Lists = Author.Lists,
                AddEditForm = new AddEditAuthor(),
                DeleteMethod = Author.Delete,
                SearchMethod = Author.Search,
                ObjectType = Libray_System.Type.Author
            };

            s.Show();
        }

        private void studentsToolStripMenuItem_Click(object sender, EventArgs e)
        {
            ShowList<Student> s = new ShowList<Student>()
            {
```

```
        Lists = Student.Lists,
        AddEditForm = new AddEditStudent(),
        DeleteMethod = Student.Delete,
        SearchMethod = Student.Search,
        ObjectType = Libray_System.Type.Student
    };

    s.Show();
}

private void bOOKToolStripMenuItem_Click(object sender, EventArgs e)
{
    ShowList<Book> s = new ShowList<Book>()
    {
        Lists = Book.Lists,
        AddEditForm = new AddEditBook(),
        DeleteMethod = Book.Delete,
        SearchMethod = Book.Search,
        ObjectType = Libray_System.Type.Book
    };

    s.Show();
}

private void bookBorrowedToolStripMenuItem_Click(object sender, EventArgs e)
{
    ShowList<Book_Borrowed> s = new ShowList<Book_Borrowed>()
    {
        Lists = Book_Borrowed.Lists,
        AddEditForm = new AddEditBookBorrowed(),
        DeleteMethod = Book_Borrowed.Delete,
        SearchMethod = Book_Borrowed.Search,
        ObjectType = Libray_System.Type.Book_Borrowed
    };

    s.Show();
}

private void bookCategoryToolStripMenuItem_Click(object sender, EventArgs e)
{
    ShowList<Book_Category> s = new ShowList<Book_Category>()
    {
        Lists = Book_Category.Lists,
        AddEditForm = new AddEditBookCategory(),
        DeleteMethod = Book_Category.Delete,
        SearchMethod = Book_Category.Search,
        ObjectType = Libray_System.Type.Book_Category
    };

    s.Show();
}

private void positionToolStripMenuItem_Click(object sender, EventArgs e)
{
    ShowList<Position> s = new ShowList<Position>()
    {
        Lists = Position.Lists,
        AddEditForm = new AddEditPosition(),
        DeleteMethod = Position.Delete,
        SearchMethod = Position.Search,
        ObjectType = Libray_System.Type.Position
    };

    s.Show();
}
}
```

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```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Library_System
{
    internal class Utilities
    {
        //Purpose: Open DialogResult then Pick an Image
        public static string BrowseImage(PictureBox pb)
            //Ang naopen niyang image ay iset niya into picture box
        {
            try
            {
                OpenFileDialog dialog = new OpenFileDialog();
                dialog.Filter = "JPEG Files (*.jpeg)|*.jpg|PNG Files (*.png)|*.png| JPG Files (*.jpg)|*.jpg| GIF Files (*.gif) |*.gif| All Files (*.*)| *.* ";
                if (dialog.ShowDialog() == DialogResult.OK)
                {
                    string imagePath = dialog.FileName.ToString();
                    pb.ImageLocation = imagePath; //Yung location na makukuha naten, yun yung Image na iaassign natin kay PictureBox
                    dialog.Dispose();
                    return imagePath;
                }
                else return null;
            }
            catch { return null; }
        }
    }
}
```

• CRUD.CS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization.Formatters.Binary;
using System.IO;
using Library_System.Data_Model;

namespace Libray_System.Data_Model
{
    [Serializable]
    public class CRUD<c> where c : class //GENERIC - pwede mainherit ng ibang class
    {
        public static List<c> Lists = new List<c>();
        public static string FileName { get; set; } = typeof(c).Name; // Kinukuha nito yung pangalan ng Data Model, kung sino man ang mag iinherit nitong CRUD
        public static bool Add(c newData) //Means magpasa ka ng OBJECT na ang Parameter Type is User
        {
            Lists.Add(newData);
            return Serialize();
        }

        public static bool Update(c newData)
        {
            return Serialize();
        }

        public static bool Delete(int id) //Delete is Method
        {
            var x = Lists.First(t => t.GetType().GetProperty("Id").GetValue(t).Equals(id)); // 1. Anong type ba ang ipinasa natin kay c 2. Then, kukunin yung property nung type na yun (like "Meron bang Id si user/author/student?) 3. Get the Value 4. Icompare siya kung equal ba yung Id sa value na pinasa
            Lists.Remove(x);
            return Serialize();
        }
    }
}
```

```
    }

    public static List <c> Search (string name)
    {
        return Lists.Where(t =>
t.GetType().GetProperty("Name").GetValue(t).ToString().Contains(name)).ToList();
    }

    public static bool Serialize()
    {
        try
        {
            FileStream fs = new FileStream(FileName, FileMode.Create, FileAccess.Write,
FileShare.None);
            BinaryFormatter formatter = new BinaryFormatter();
            formatter.Serialize(fs, Lists);
            fs.Dispose();
            fs.Close();
            return true;
        }
        catch { return false; }
    }
    public static bool Deserialize()
    {
        try
        {
            if (System.IO.File.Exists(FileName)) // Is the file exists? if exists it will
deserialize and it will be assigned to the ListofUser
            {
                FileStream fs = new FileStream(FileName, FileMode.Open);
                BinaryFormatter formatter = new BinaryFormatter();
                Lists = ((List<c>)(formatter.Deserialize(fs)));
                fs.Dispose();
                fs.Close();
                return true;
            }
            return false;
        }
        catch { return false; }
    }
}
}

• SHOW LIST.CS

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Library_System.Forms;
using Library_System.Data_Model;
using Libray_System.Forms;

namespace Libray_System
{
    public enum Type { User, Author, Student, Book, Book_Borrowed, Book_Category, Position }
    //List of Data, with no particular data type
    internal class ShowList<c> where c : class
    {

        public delegate bool delDelete(int id);//Kpag tinatawag ito ay parang tinatawag na rin
yung method ng ibang class
        public delegate List<c> delSearch(string name);

        ListForm lf = new ListForm();

        public List<c> Lists { get; set; }

        public Form AddEditForm { get; set; } // Used to call all add edit forms such as author
and student
    }
}
```

```
public delSearch SearchMethod { get; set; }
public delDelete DeleteMethod { get; set; }
public Type ObjectType { get; set; }

public void Show()
{
    lf.btnNew.Click += BtnNew_Click;
    lf.btnDelete.Click += BtnDelete_Click;
    lf.btnEdit.Click += BtnEdit_Click;
    lf.tbSearch.KeyDown += TbSearch_KeyDown;
    Reload();
    lf.ShowDialog();
}

private void TbSearch_KeyDown(object sender, KeyEventArgs e)
{
    if (e.KeyCode == Keys.Enter)
        lf.dg.DataSource = SearchMethod(lf.tbSearch.Text);
}

private void BtnEdit_Click(object sender, EventArgs e)
{
    if (ObjectType == Type.Author)
        EditAuthor();
    else if (ObjectType == Type.User)
        EditUser();
    else if (ObjectType == Type.Student)
        EditStudent();
    else if (ObjectType == Type.Book)
        EditBook();
    else if (ObjectType == Type.Book_Category)
        EditBook_Category();
    else if (ObjectType == Type.Book_Borrowed)
        EditBook_Borrowed();
    else if (ObjectType == Type.Book_Position)
        EditPosition();
}

private void BtnDelete_Click(object sender, EventArgs e)
{
    if (MessageBox.Show("Sigurado ka ba?", "Delete", MessageBoxButtons.YesNo,
        MessageBoxIcon.Warning) == DialogResult.Yes)
    {
        int id = int.Parse(lf.dg.SelectedCells[0].Value.ToString());
        // Yung [0] ito ay tinatawag na index which means ito yung ID , so start siya
        lagi sa UNANG DATA
        if (DeleteMethod(id))
            Reload();
    }
}

private void BtnNew_Click(object sender, EventArgs e)
{
    if (AddEditForm.ShowDialog() == DialogResult.OK)
        Reload();
}

void Reload()
{
    lf.dg.DataSource = null;
    lf.dg.DataSource = Lists;
}

void EditUser()
{
    User selectedUser = User.Lists.First(x => x.Id ==
int.Parse(lf.dg.SelectedCells[0].Value.ToString()));
    //kung ano yung number ang pinili ayun ang ma eedit
    //Ang kinukuha dito ay yung Selected Cells, whichi means yung Isang ROW

    AddEditUser ad = new AddEditUser(selectedUser); //For edit
    if (ad.ShowDialog() == DialogResult.OK)
        Reload();
}
```

```
void EditAuthor()
{
    Author selectedUser = Author.Lists.First(x => x.Id ==
int.Parse(lf.dg.SelectedCells[0].Value.ToString()));

    AddEditAuthor ad = new AddEditAuthor(selectedUser); //For edit
    if (ad.ShowDialog() == DialogResult.OK)
        Reload();
}

void EditStudent()
{
    Student selectedUser = Student.Lists.First(x => x.Id ==
int.Parse(lf.dg.SelectedCells[0].Value.ToString()));

    AddEditStudent ad = new AddEditStudent(selectedUser); //For edit
    if (ad.ShowDialog() == DialogResult.OK)
        Reload();
}

void EditBook()
{
    Book selectedUser = Book.Lists.First(x => x.Id ==
int.Parse(lf.dg.SelectedCells[0].Value.ToString()));

    AddEditBook ad = new AddEditBook(selectedUser); //For edit
    if (ad.ShowDialog() == DialogResult.OK)
        Reload();
}

void EditBook_Category()
{
    Book_Category selectedUser = Book_Category.Lists.First(x => x.Id ==
int.Parse(lf.dg.SelectedCells[0].Value.ToString()));

    AddEditBookCategory ad = new AddEditBookCategory(selectedUser); //For edit
    if (ad.ShowDialog() == DialogResult.OK)
        Reload();
}

void EditBook_Borrowed()
{
    Book_Borrowed selectedUser = Book_Borrowed.Lists.First(x => x.Id ==
int.Parse(lf.dg.SelectedCells[0].Value.ToString()));

    AddEditBookBorrowed ad = new AddEditBookBorrowed(selectedUser); //For edit
    if (ad.ShowDialog() == DialogResult.OK)
        Reload();
}

void EditPosition()
{
    Position selectedUser = Position.Lists.First(x => x.Id ==
int.Parse(lf.dg.SelectedCells[0].Value.ToString()));

    AddEditPosition ad = new AddEditPosition(selectedUser); //For edit
    if (ad.ShowDialog() == DialogResult.OK)
        Reload();
}
}
```

DATA MODELS

1. AUTHOR.CS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization.Formatters.Binary;
using System.IO;
using Libray_System.Data_Model;

namespace Library_System.Data_Model
{
    [Serializable]
```

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```
public class Author:CRUD<Author>
{
    public int Id { get; set; } // Unique Id or Primary Key
    public string Name { get; set; }
    public string About { get; set; }

}
}
```

2. USER.CS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization.Formatters.Binary;
using System.IO;
using Libray_System.Data_Model;

namespace Library_System.Data_Model
{
    [Serializable]

    public class User:CRUD<User> // User is an object
    {
        //PROPERTIES
        public int Id { get; set; } // Unique Id or Primary Key
        public string Name { get; set; }
        public System.Drawing.Image Image { get; set; } = null;
        public string Username { get; set; }
        public string Password { get; set; }
        public int PositionId { get; set; }
        public bool Status { get; set; } = true;

    }
}
```

3. STUDENT.CS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization.Formatters.Binary;
using System.IO;
using Libray_System.Data_Model;

namespace Library_System.Data_Model
{
    [Serializable]
    public class Student:CRUD<Student>
    {
        public int Id { get; set; } // Unique Id or Primary Key

        public System.Drawing.Image Image { get; set; } = null;
        public string Name { get; set; }
        public bool Status { get; set; } = true;

    }
}
```

4. BOOK BORROWED

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization.Formatters.Binary;
using System.IO;
using Libray_System.Data_Model;

namespace Library_System.Data_Model
{
    [Serializable]
```

```
public class Book_Borrowed:CRUD<Book_Borrowed>
{
    public int Id { get; set; } // Unique Id or Primary Key
    public string StudentId { get; set; }
    public string UserId { get; set; } //Kung sino yung gumamit ng system na nagpahiram
                                   //Para malaman rin kung sino ang nagpahiram
    public string BookId { get; set; }
    public string Date { get; set; }
    public string DateReturn { get; set; }
    public string Remarks { get; set; } //To know if there is a damage in the book
}
}
```

5. BOOK CATEGORY.CS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization.Formatters.Binary;
using System.IO;
using Libray_System.Data_Model;

namespace Library_System.Data_Model
{
    [Serializable]
    public class Book_Category:CRUD<Book_Category>
    {
        public int Id { get; set; } // Unique Id or Primary Key
        public string Name { get; set; }
        public string Description { get; set; }
    }
}
```

6. BOOK.CS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization.Formatters.Binary;
using System.IO;
using Libray_System.Data_Model;

namespace Library_System.Data_Model
{
    [Serializable]
    public class Book:CRUD<Book>
    {
        public int Id { get; set; } // Unique Id or Primary Key
        public string Title { get; set; }
        public string AuthorId { get; set; }
        public string DatePublished { get; set; }
        public string Description { get; set; }
        public string CategoryId { get; set; }
        public bool Status { get; set; }
    }
}
```

7. POSITION.CS

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Runtime.Serialization.Formatters.Binary;
using System.IO;
using Libray_System.Data_Model;

namespace Library_System.Data_Model
```



```
{
    [Serializable]
    public class Position:CRUD<Position> //Position of User
    {
        public int Id { get; set; } // Unique Id or Primary Key
        public string Name { get; set; }
        public string Description { get; set; }
    }
}
```

FORMS

1. ADD EDIT AUTHOR.CS

```
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 Library_System.Data_Model;

namespace Libray_System.Forms
{
    public partial class AddEditAuthor : Form
    {
        public AddEditAuthor(Author author = null)
        {
            InitializeComponent();
            this.author = author;
            if (author != null)
                DisplaySelectedObject();
        }

        public Author author;

        int NewId()
        {
            try
            {
                //x => ___ (Anong property ang gusto kunin - edi yung Id sa User)
                return Author.Lists.Max(x => x.Id) + 1; // +1 means everytime na magkecreate ng
bago
            }
            catch { return 0; }
        }

        void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
        {
            tbName.DataBindings.Add("Text", author, "Name");
            tbAbout.DataBindings.Add("Text", author, "About");
        }

        private void btnCancel_Click(object sender, EventArgs e)
        {
            this.DialogResult = DialogResult.Cancel;
        }

        void Clear()
        {
            tbName.Clear();
            tbAbout.Clear();
        }

        private void btnOk_Click(object sender, EventArgs e)
        {
            if (author == null)
            {
                Author a = new Author()
                {
                    Id = NewId(),
```

```
        Name = tbName.Text,
        About = tbAbout.Text

};
if (Author.Add(a))// Add na sa list
{
    Clear(); //Para mawala yung laman sa loob ng form kapag nag add
    DialogResult = DialogResult.OK;
}
}
else
{
    if (Author.Update(author))
    {
        Clear(); //Para mawala yung laman sa loob ng form kapag nag add
        DialogResult = DialogResult.OK;
    }
}
}
}
```

2. ADD EDIT STUDENT.CS

```
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 Library_System;
using Library_System.Data_Model;

namespace Libray_System.Forms
{
    public partial class AddEditStudent : Form
    {
        public AddEditStudent(Student student = null)
        {
            InitializeComponent();
            this.student = student;
            if (student != null)
                DisplaySelectedObject();
        }

        public Student student;

        int NewId()
        {
            try
            {
                //x => ____ (Anong property ang gusto
                kunin - edi yung Id sa User)
                return Student.Lists.Max(x => x.Id) + 1; // +1 means everytime na magkecreate
                ng bago
            }
            catch { return 0; }
        }

        void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
        {
            pictureBox1.Image = student.Image;
            tbName.DataBindings.Add("Text", student, "Name");
            cbActive.DataBindings.Add("Checked", student, "Status");
        }

        void Clear()
        {
            tbName.Clear();
        }

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

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```
{
    if (student == null)
    {
        Student a = new Student()
        {
            Id = NewId(),
            Name = tbName.Text,
            Status = cbActive.Checked,
            Image = pictureBox1.Image

        };
        if (Student.Add(a))// Add na sa list
        {
            Clear(); //Para mawala yung laman sa loob ng form kapag nag add
            DialogResult = DialogResult.OK;
        }

    }
    else
    {
        student.Image = pictureBox1.Image;

        if (Student.Update(student))
        {
            Clear(); //Para mawala yung laman sa loob ng form kapag nag add
            DialogResult = DialogResult.OK;
        }
    }
}

private void btnCancel_Click(object sender, EventArgs e)
{
    this.DialogResult = DialogResult.Cancel;
}

private void pictureBox1_DoubleClick(object sender, EventArgs e)
{
    Utilities.BrowseImage(pictureBox1); //User to Open Dialog Box
}
}
```

3. ADD EDIT USER.CS

```
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 Library_System.Data_Model;

namespace Library_System.Forms
{
    public partial class AddEditUser : Form
    {
        public AddEditUser(User user = null)
        {
            InitializeComponent();
            User = user;
            if (user != null)
                DisplaySelectedObject();
        }
        User User;
        private void btnOk_Click(object sender, EventArgs e)
        {
            if (ComparePassword())
            {
                //Dito na magdadagdag ng info
                if (User == null)
                {
                    User user = new User()
                    {
                        Id = NewId(),
                        Name = tbName.Text,
```

```

        Username = tbUsername.Text,
        Password = tbPassword.Text,
        PositionId = cbPosition.SelectedIndex, //Selected Index siya dahil may
choices,
        Status = cbActive.Checked, //Boolean
        Image = pictureBox1.Image
    };

    if (User.Add(user))
        DialogResult = DialogResult.OK;
    }
    else
    {
        User.Image = pictureBox1.Image; //Para mag update ren yung Image, the sinet
rin yung Iamge na property ni User sa laman ng PictureBox
        if (User.Update(User)) // Mag uupdate
            DialogResult = DialogResult.OK; // Pag nag OK mag coclose na siya
    }
}

private void btnCancel_Click(object sender, EventArgs e)
{
    this.DialogResult = DialogResult.Cancel; //Automatic close
}

int NewId()
{
    try
    {
        //x => ___ (Anong property ang gusto kunin - edi yung Id sa User)
        return User.Lists.Max(x => x.Id) + 1; // +1 means everytime na magkecreate ng
bago
    }
    catch { return 0; }
}

void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
{
    pictureBox1.Image = User.Image;
    tbName.DataBindings.Add("Text", User, "Name");
    tbUsername.DataBindings.Add("Text", User, "Username");
    tbPassword.DataBindings.Add("Text", User, "Password");
    cbPosition.DataBindings.Add("SelectedValue", User, "PositionId");
    cbPosition.SelectedIndex = User.PositionId; //Ginagamit para hindi yung default ang
nag aapper, yung mismong pinili talaga like if Librarian 1, dapat ayun ang lalabas
    cbActive.DataBindings.Add("Checked", User, "Status");
}

bool ComparePassword() // For password
{
    if (tbPassword.Text == tbRetypePassword.Text)
        return true;
    return false;
}

private void pictureBox1_DoubleClick(object sender, EventArgs e)
{
    Utilities.BrowseImage(pictureBox1); //User to Open Dialog Box
}
}
```

4. LIST FORM.CS

```

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 Library_System.Data_Model;
using System.Windows.Forms;
```

```
namespace Library_System.Forms
{
    public partial class ListForm : Form
    {
        public ListForm()
        {
            InitializeComponent();
        }
    }
}
```

5. BOOK.CS

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Library_System;
using Library_System.Data_Model;

namespace Libray_System.Forms
{
    public partial class AddEditBook : Form
    {
        public AddEditBook(Book book = null)
        {
            InitializeComponent();
            this.Book = book;
            if (book != null)
                DisplaySelectedObject();
        }

        public Book Book;

        int NewId()
        {
            try
            {
                //x => ___ (Anong property ang gusto kunin - edi yung Id sa User)
                return Book.Lists.Max(x => x.Id) + 1; // +1 means everytime na magkecreate ng
bago
            }
            catch { return 0; }
        }

        void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
        {
            tbTitle.DataBindings.Add("Text", Book, "Title");
            tbAuthorId.DataBindings.Add("Text", Book, "AuthorId");
            tbCategoryId.DataBindings.Add("Text", Book, "CategoryId");
            tbDatePublished.DataBindings.Add("Text", Book, "DatePublished");
            tbDescription.DataBindings.Add("Text", Book, "Description");
            cbActive.DataBindings.Add("Checked", Book, "Status");
        }

        void Clear()
        {
            tbTitle.Clear();
            tbDescription.Clear();
        }

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

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```
{
    if (Book == null)
    {
        Book a = new Book()
        {
            Id = NewId(),
            AuthorId = tbAuthorId.Text,
            DatePublished = tbDatePublished.Text,
            Title = tbTitle.Text,
            CategoryId = tbCategoryId.Text,
            Description = tbDescription.Text,
            Status = cbActive.Checked
        };
        if (Book.Add(a))// Add na sa list
        {
            Clear();
            DialogResult = DialogResult.OK;
        }
    }
    else
    {
        if (Book.Update(Book))
        {
            Clear();
            DialogResult = DialogResult.OK;
        }
    }
}

private void btnCancel_Click(object sender, EventArgs e)
{
    this.DialogResult = DialogResult.Cancel; //Automatic close
}
}
```

6. BOOK BORROWED. CS

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Library_System;
using Library_System.Data_Model;

namespace Libray_System.Forms
{
    public partial class AddEditBookBorrowed : Form
    {
        public AddEditBookBorrowed(Book_Borrowed bookBorrowed = null)
        {
            InitializeComponent();
            this.BookBorrowed = bookBorrowed;
            if (bookBorrowed != null)
                DisplaySelectedObject();
        }

        public Book_Borrowed BookBorrowed;

        int NewId()
        {
            try
            {
                //x => ____ (Anong property ang gusto kunin - edi yung Id sa User)
                return Book_Borrowed.Lists.Max(x => x.Id) + 1; // +1 means everytime na
magkecreate ng bago
            }
        }
    }
}
```

```
        catch { return 0; }
    }

    void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
    {
        tbStudentId.DataBindings.Add("Text", BookBorrowed, "StudentId");
        tbUserId.DataBindings.Add("Text", BookBorrowed, "UserId");
        tbBookId.DataBindings.Add("Text", BookBorrowed, "BookId");
        tbDate.DataBindings.Add("Text", BookBorrowed, "Date");
        tbDateReturn.DataBindings.Add("Text", BookBorrowed, "DateReturn");
        tbRemarks.DataBindings.Add("Text", BookBorrowed, "Remarks");
    }

    private void btnOk_Click(object sender, EventArgs e)
    {
        if (BookBorrowed == null)
        {
            Book_Borrowed a = new Book_Borrowed()
            {
                Id = NewId(),
                StudentId = tbStudentId.Text,
                UserId = tbUserId.Text,
                BookId = tbBookId.Text,
                Date = tbDate.Text,
                DateReturn = tbDateReturn.Text,
                Remarks = tbRemarks.Text
            };

            if (Book_Borrowed.Add(a))// Add na sa list
            {
                Clear(); //Para mawala yung laman sa loob ng form kapag nag add
                DialogResult = DialogResult.OK;
            }
        }
        else
        {
            if (Book_Borrowed.Update(BookBorrowed))
            {
                Clear();
                DialogResult = DialogResult.OK;
            }
        }
    }

    void Clear()
    {
        tbStudentId.Clear();
        tbUserId.Clear();
        tbBookId.Clear();
        tbDate.Clear();
        tbDateReturn.Clear();
        tbRemarks.Clear();
    }

    private void btnCancel_Click(object sender, EventArgs e)
    {
        this.DialogResult = DialogResult.Cancel; //Automatic close
    }
}
```

7. BOOK CATEGORY. CS

```
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 Library_System.Data_Model;

namespace Libray_System.Forms
{
    public partial class AddEditBookCategory : Form
```

```
{
    public AddEditBookCategory(Book_Category book_Category = null)
    {
        InitializeComponent();

        this.Book_Category = book_Category;
        if (book_Category != null)
            DisplaySelectedObject();
    }

    public Book_Category Book_Category;

    int NewId()
    {
        try
        {
            //x => ___ (Anong property ang gusto kunin - edi yung Id sa User)
            return Book_Category.Lists.Max(x => x.Id) + 1; // +1 means everytime na
magkecreate ng bago
        }
        catch { return 0; }
    }

    void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
    {
        tbName.DataBindings.Add("Text", Book_Category, "Name");
        tbDescription.DataBindings.Add("Text", Book_Category, "Description");
    }

    void Clear()
    {
        tbName.Clear();
        tbDescription.Clear();
    }

    private void btnOk_Click(object sender, EventArgs e)
    {
        if (Book_Category == null)
        {
            Book_Category a = new Book_Category()
            {
                Id = NewId(),
                Name = tbName.Text,
                Description = tbDescription.Text
            };
            if (Book_Category.Add(a))// Add na sa list
            {
                Clear(); //Para mawala yung laman sa loob ng form kapag nag add
                DialogResult = DialogResult.OK;
            }
        }
        else
        {
            if (Book_Category.Update(Book_Category))
            {
                Clear(); //Para mawala yung laman sa loob ng form kapag nag add
                DialogResult = DialogResult.OK;
            }
        }
    }

    private void btnCancel_Click(object sender, EventArgs e)
    {
        this.DialogResult = DialogResult.Cancel;
    }
}
```


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8. POSITION. CS

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Library_System;
using Library_System.Data_Model;

namespace Libray_System.Forms
{
    public partial class AddEditPosition : Form
    {
        public AddEditPosition(Position Position = null)
        {
            InitializeComponent();
            this.position = Position;
            if (Position != null)
                DisplaySelectedObject();
        }

        public Position position;

        int NewId()
        {
            try
            {
                //x => ___ (Anong property ang gusto kunin - edi yung Id sa User)
                return Position.Lists.Max(x => x.Id) + 1; // +1 means everytime na magkecreate
            }
            catch { return 0; }
        }

        void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
        {
            tbName.DataBindings.Add("Text", position, "Name");
            tbDescription.DataBindings.Add("Text", position, "Description");
        }

        void Clear()
        {
            tbName.Clear();
            tbDescription.Clear();
        }

        private void btnOk_Click(object sender, EventArgs e)
        {
            if (position == null)
            {
                Position a = new Position()
                {
                    Id = NewId(),
                    Name = tbName.Text,
                    Description = tbDescription.Text
                };
                if (Position.Add(a))// Add na sa list
                {
                    Clear(); //Para mawala yung laman sa loob ng form kapag nag add
                    DialogResult = DialogResult.OK;
                }
            }
            else
            {

```

```
        if (Position.Update(position))
        {
            Clear(); //Para mawala yung laman sa loob ng form kapag nag add
            DialogResult = DialogResult.OK;
        }
    }

    private void btnCancel_Click(object sender, EventArgs e)
    {
        this.DialogResult = DialogResult.Cancel;
    }
}
```

9. LOGIN .CS

```
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 Library_System.Data_Model;

namespace Library_System.Forms
{
    public partial class Login : Form
    {
        public Login()
        {
            InitializeComponent();
        }

        private void btnOk_Click(object sender, EventArgs e)
        {
            if (CheckUser()) // Ichecheck kung nag eexist si User, if nag eexist at tama
password, mag 0-OK
                DialogResult = DialogResult.OK;
        }

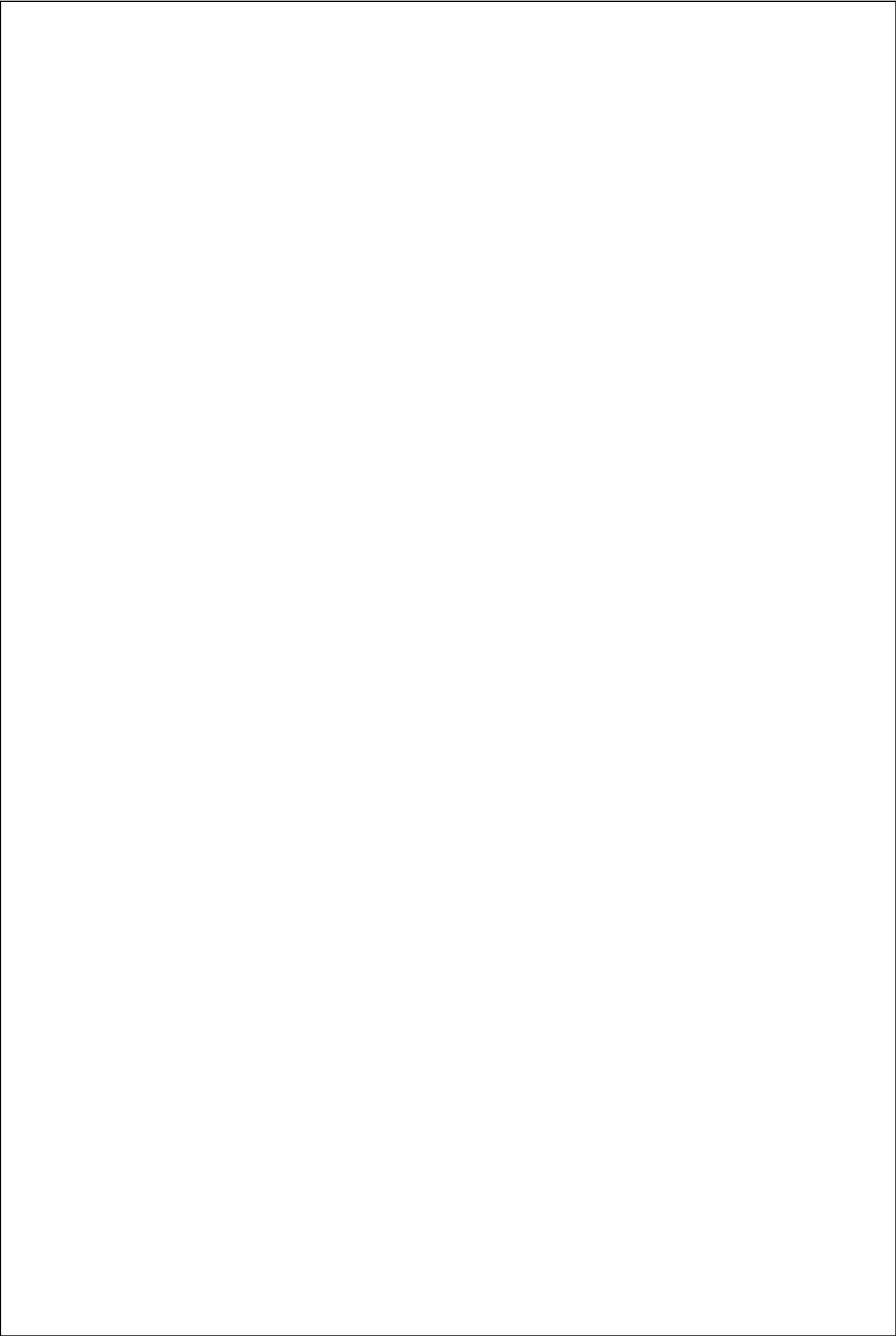
        private void btnCancel_Click(object sender, EventArgs e)
        {
            DialogResult = DialogResult.Cancel;
        }

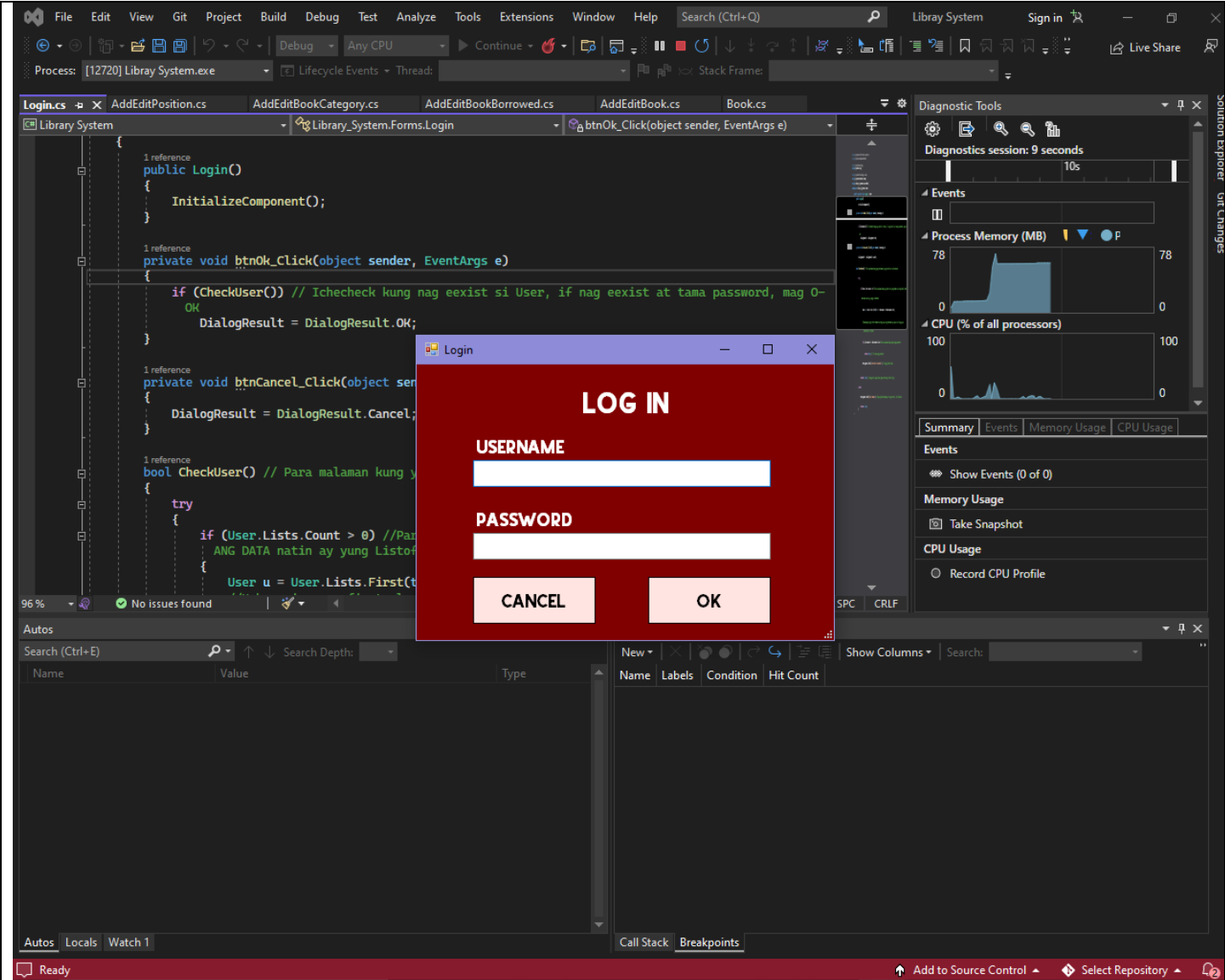
        bool CheckUser() // Para malaman kung yung username ay nag eexist na sa database
        {
            try
            {
                if (User.Lists.Count > 0) //Para malaman kung nag eexist na yung Name sa ating
DATA, AND ANG DATA natin ay yung ListofUser
                {
                    User u = User.Lists.First(t => t.Username == tbUsername.Text);
                    //Hahanapin yung first element na kung saan ang Username ay equal sa
linagay na Username sa TEXTBOX

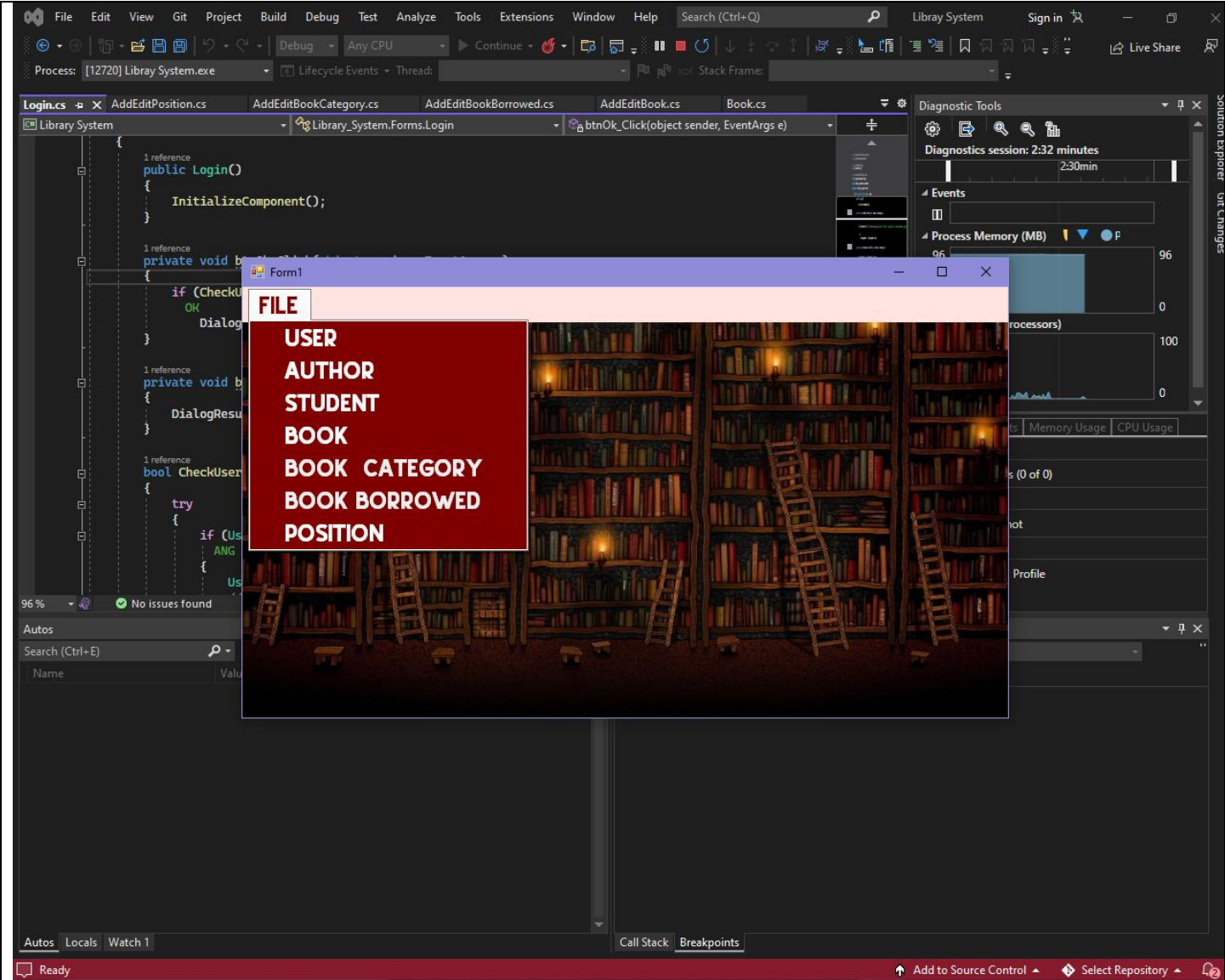
                    if (u.Password == tbPassword.Text) //Para malaman kung same yung password
return true; // if same ang password

                    MessageBox.Show("Incorrect Password"); // Kapag hindi same
                }
                return false; // kapag wala pang laman yung User mag fafalse siya
            }
            catch
            {
                MessageBox.Show("Wala Naman"); //Kapag hindi mahanap or nag eexist, ito lalabas
return false;
            }
        }
    }
}
```

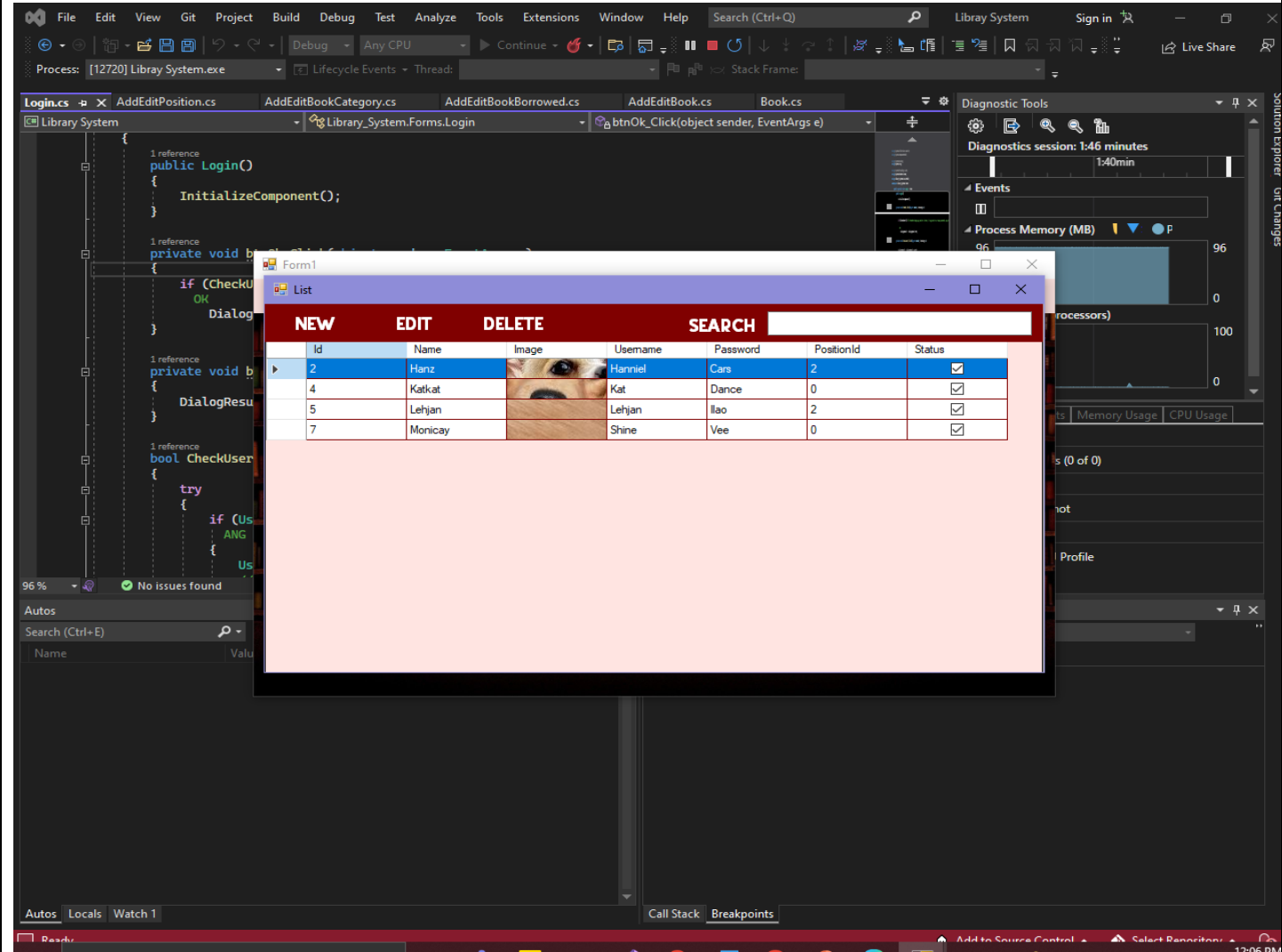
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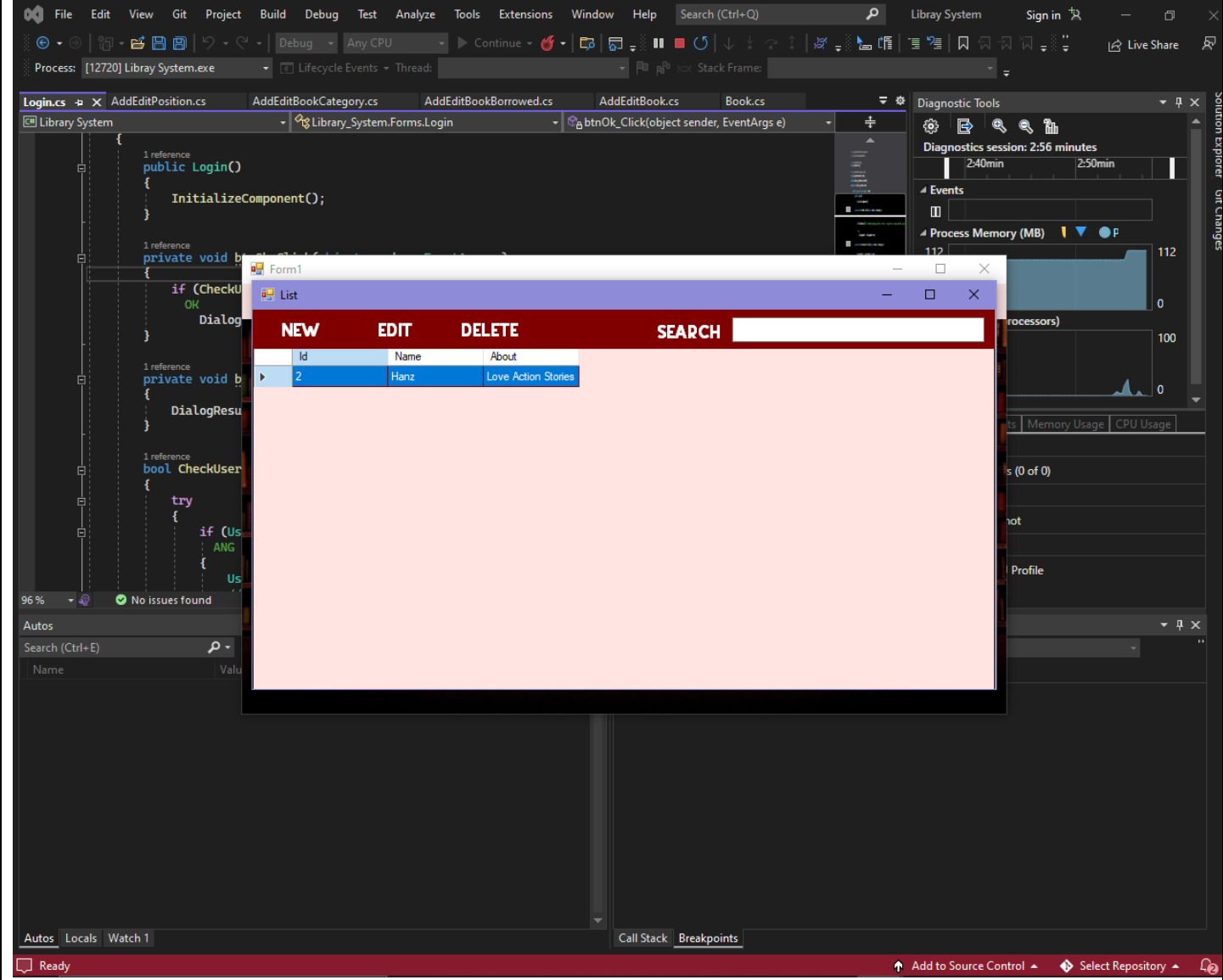
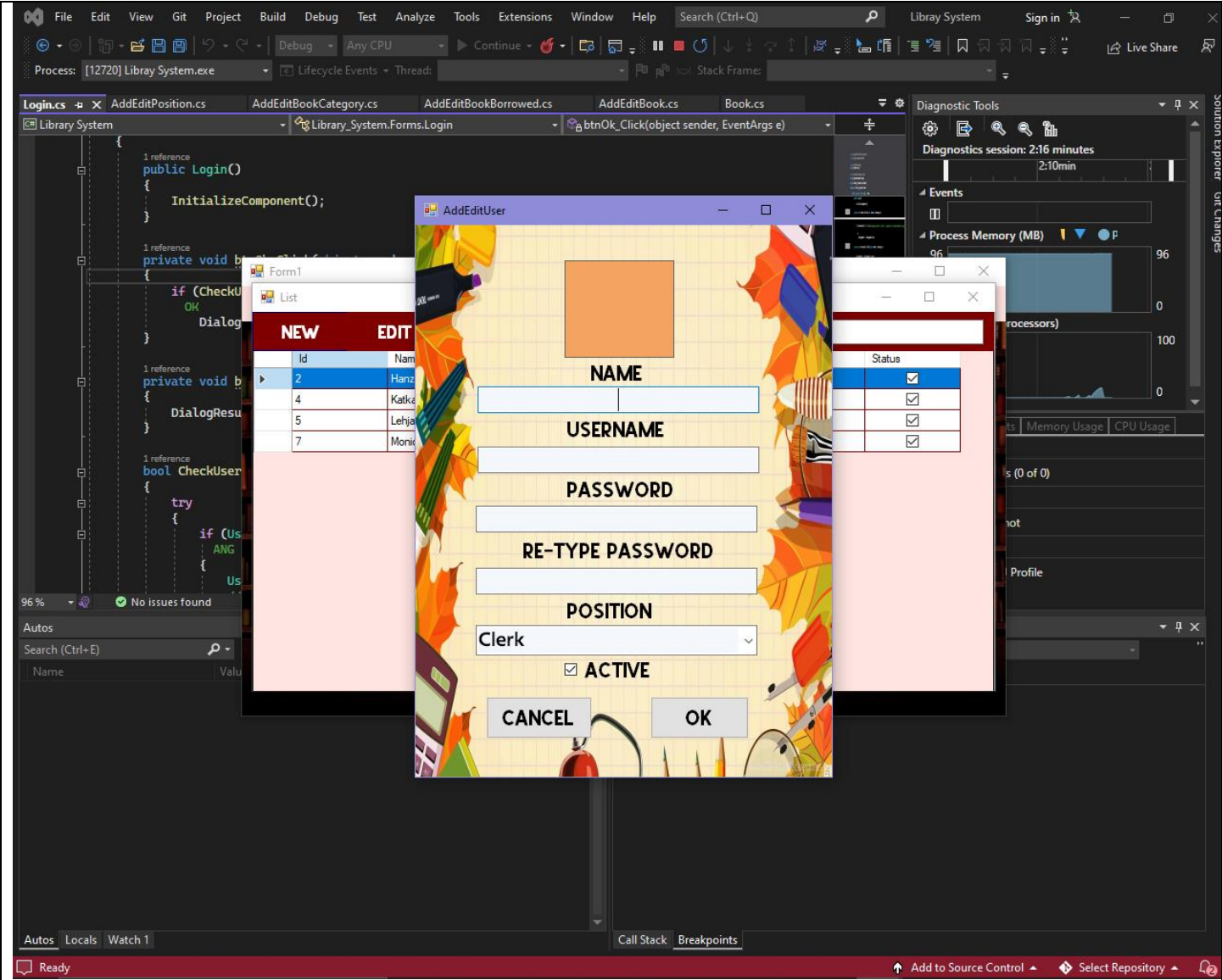


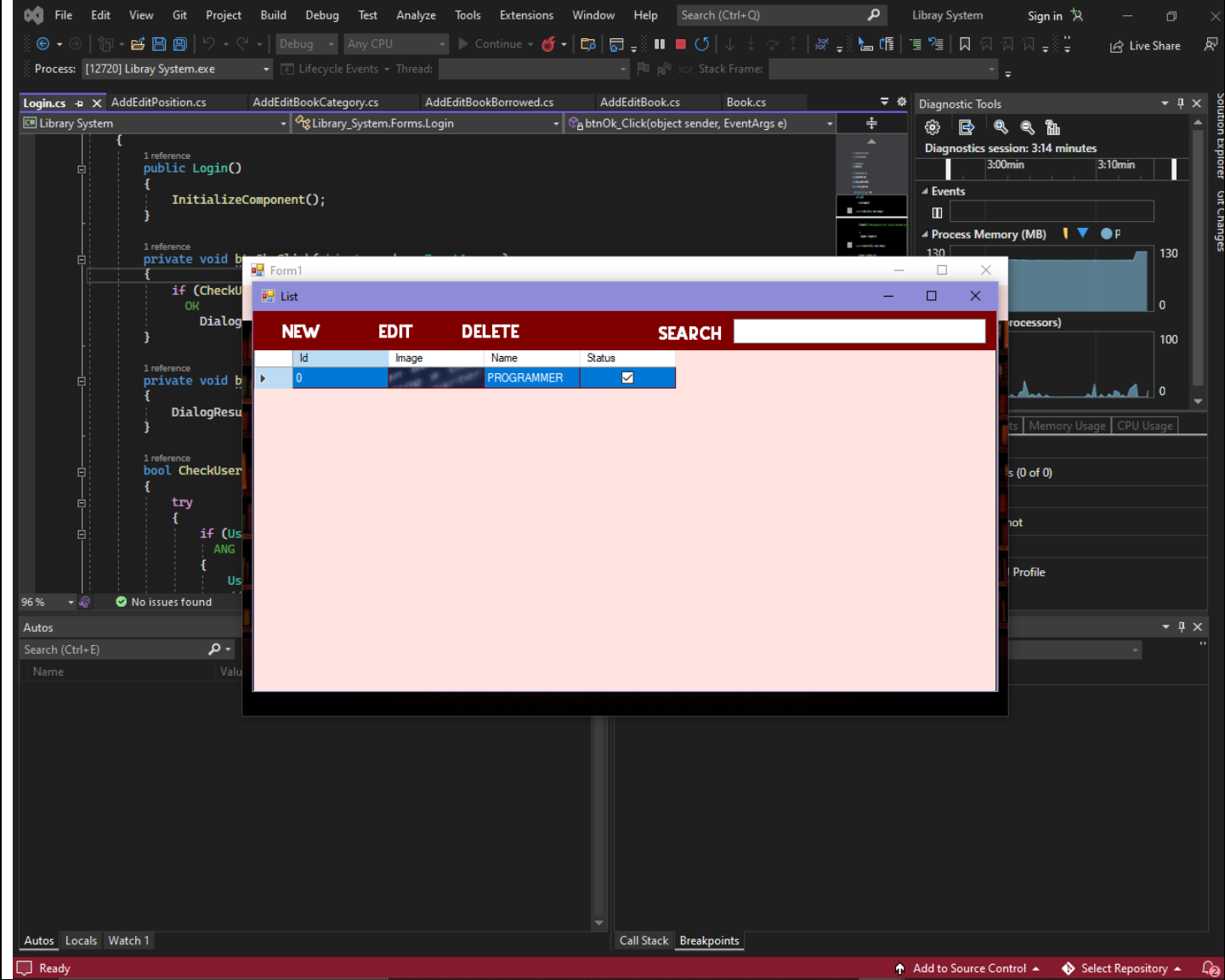
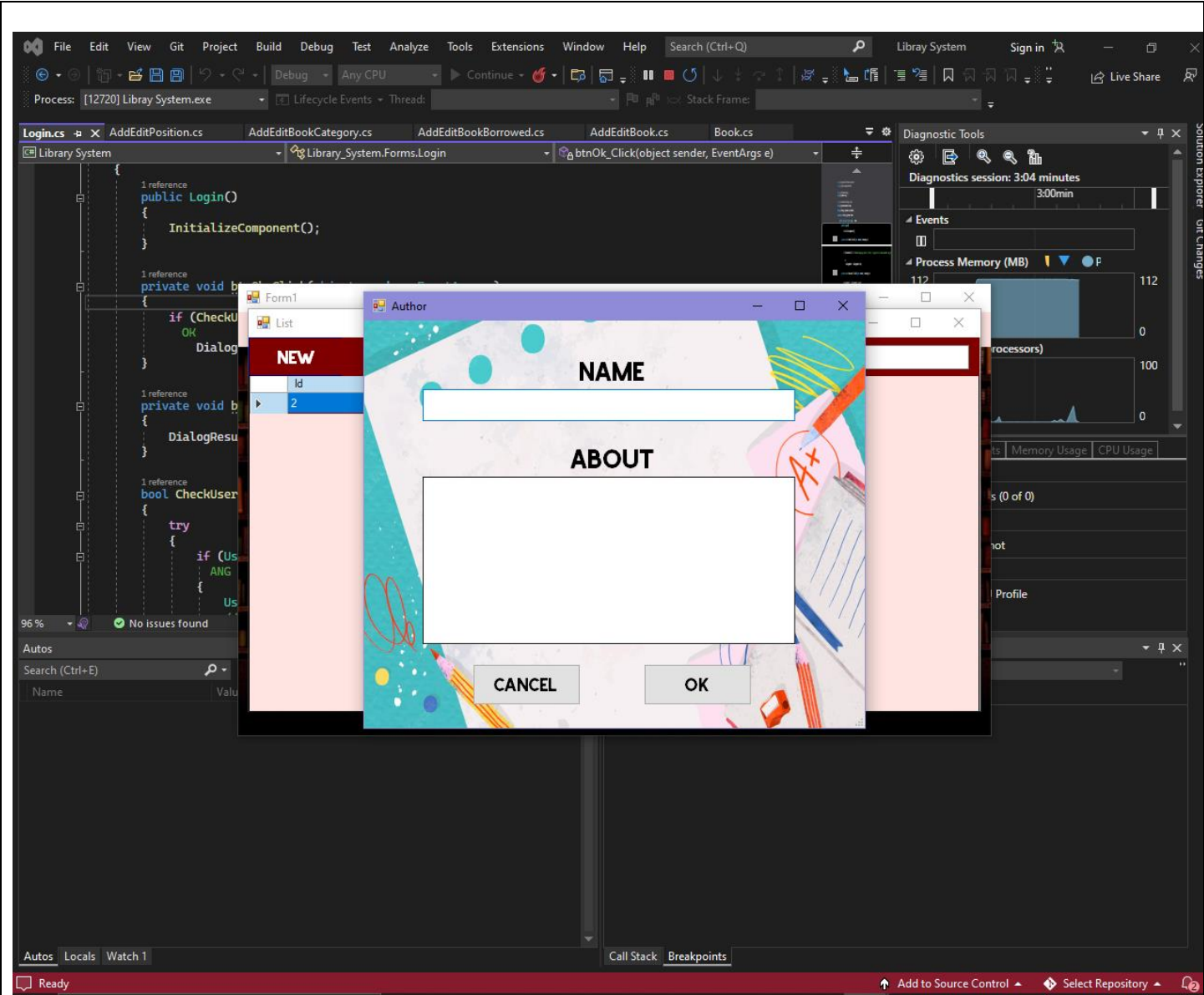


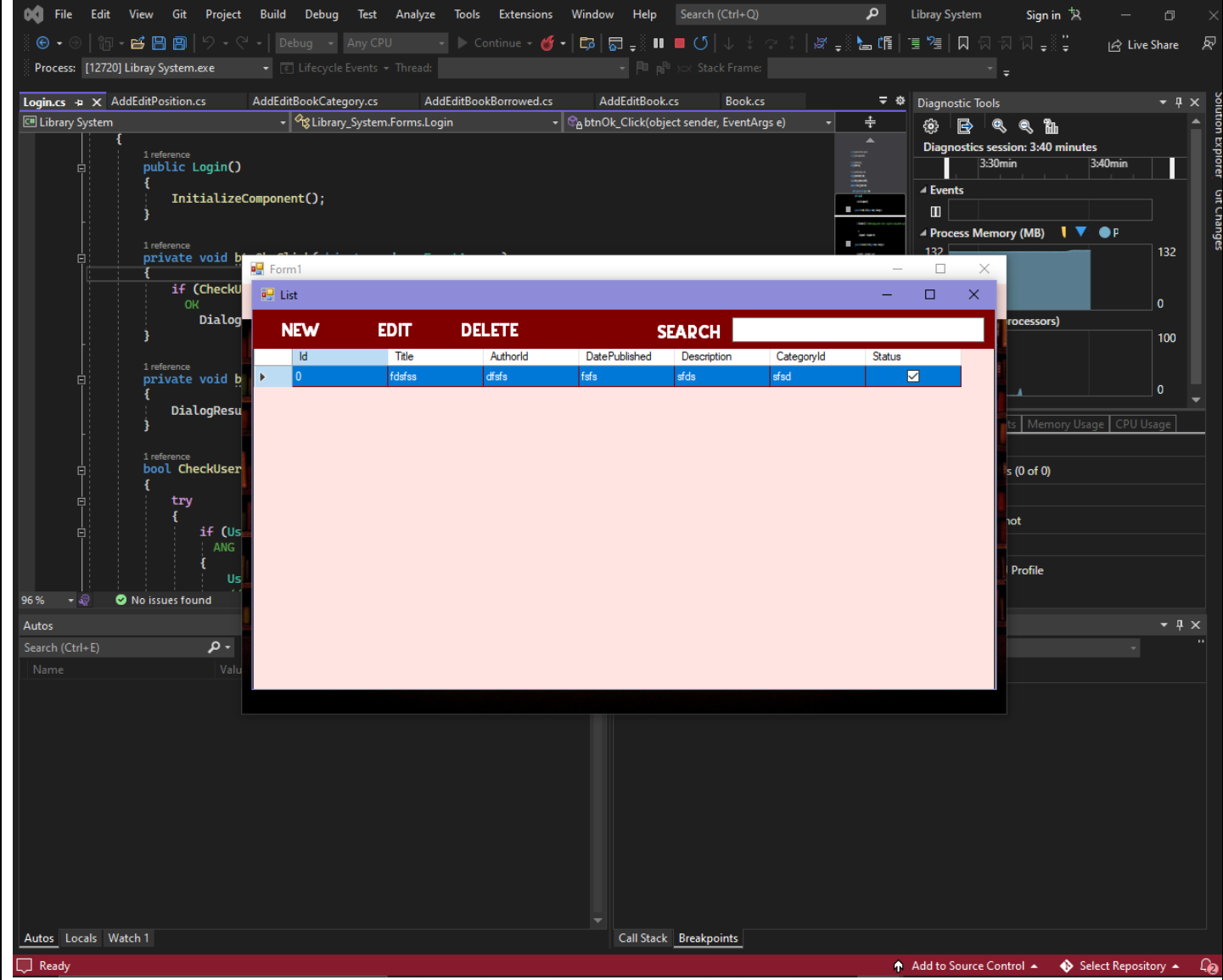
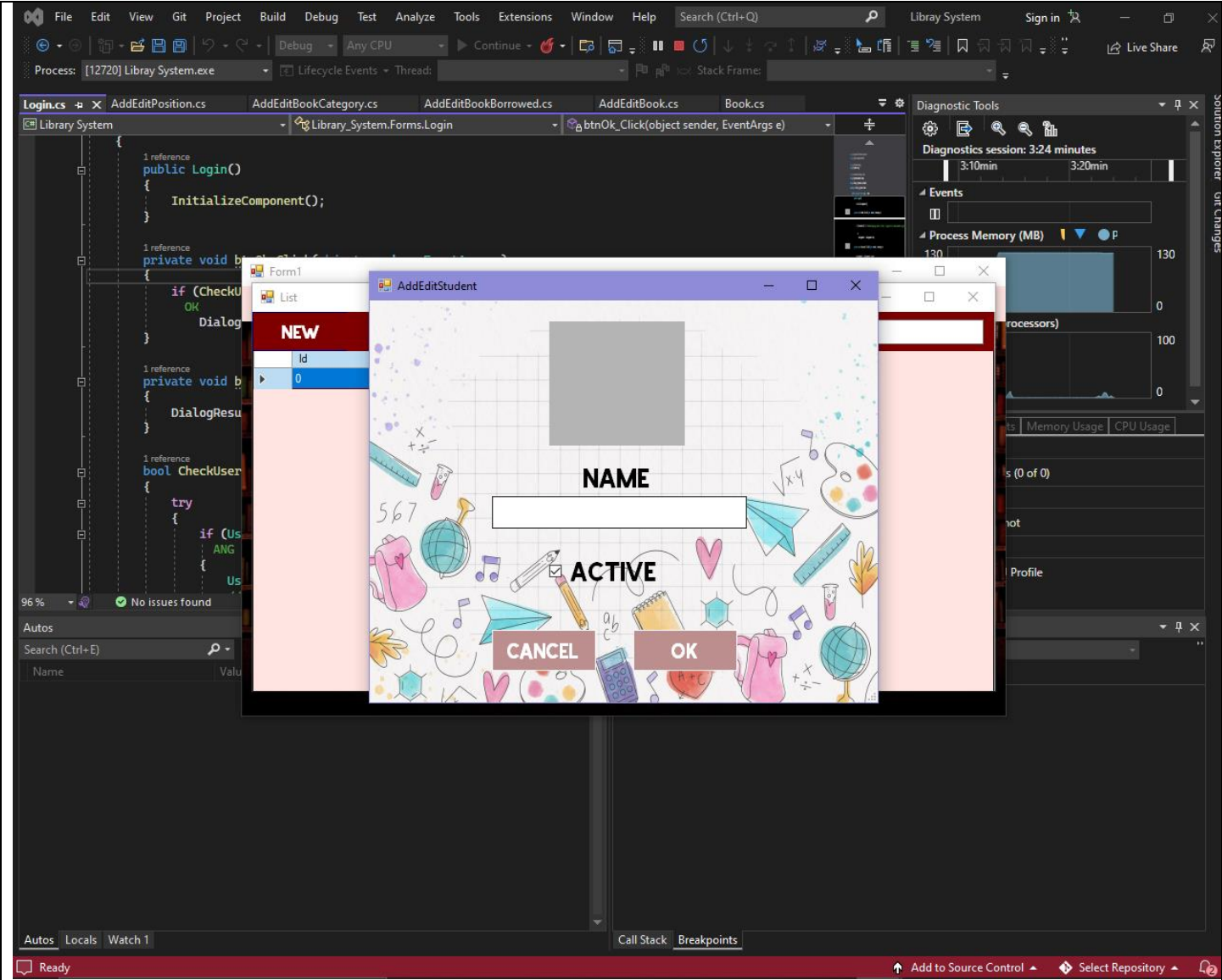


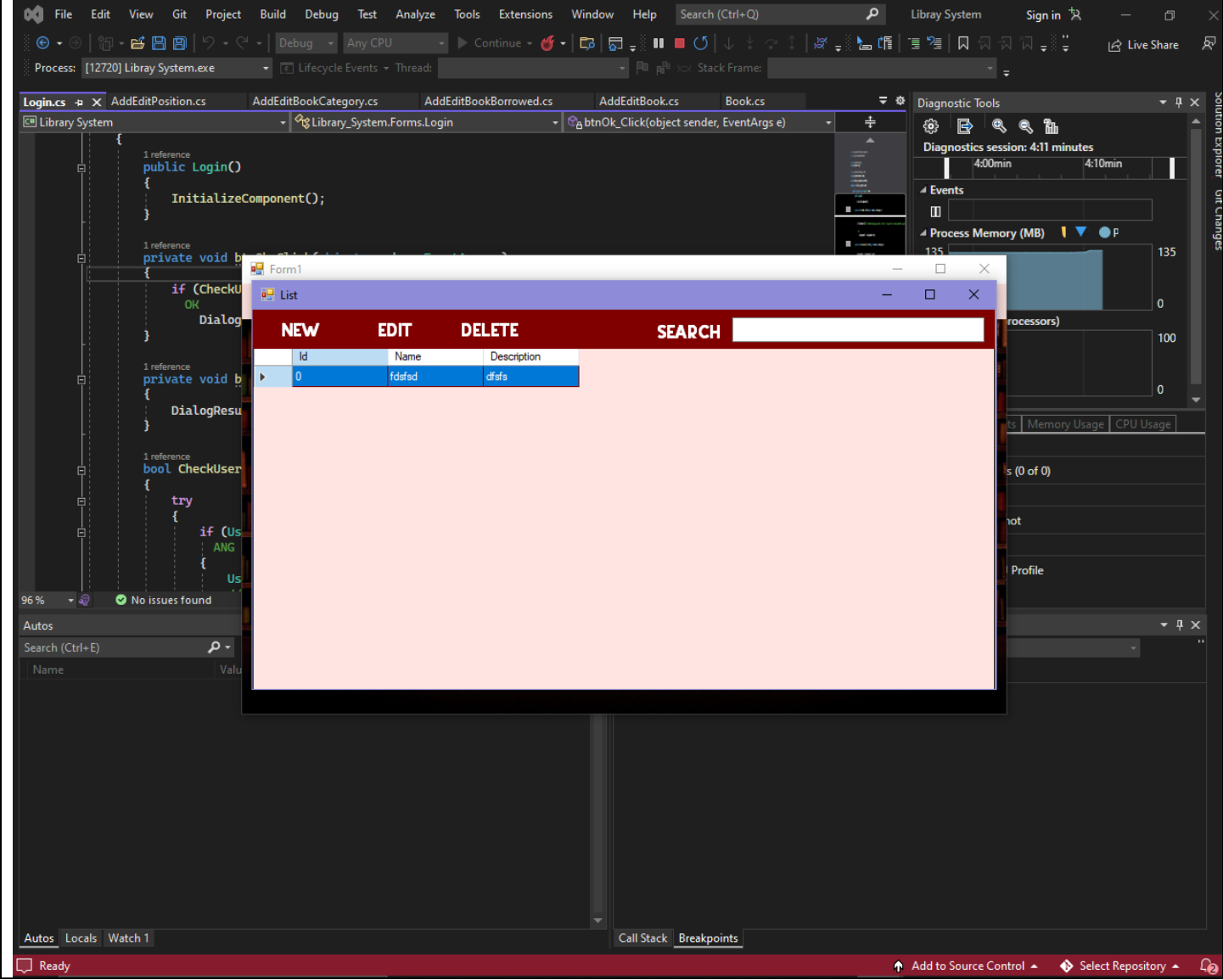
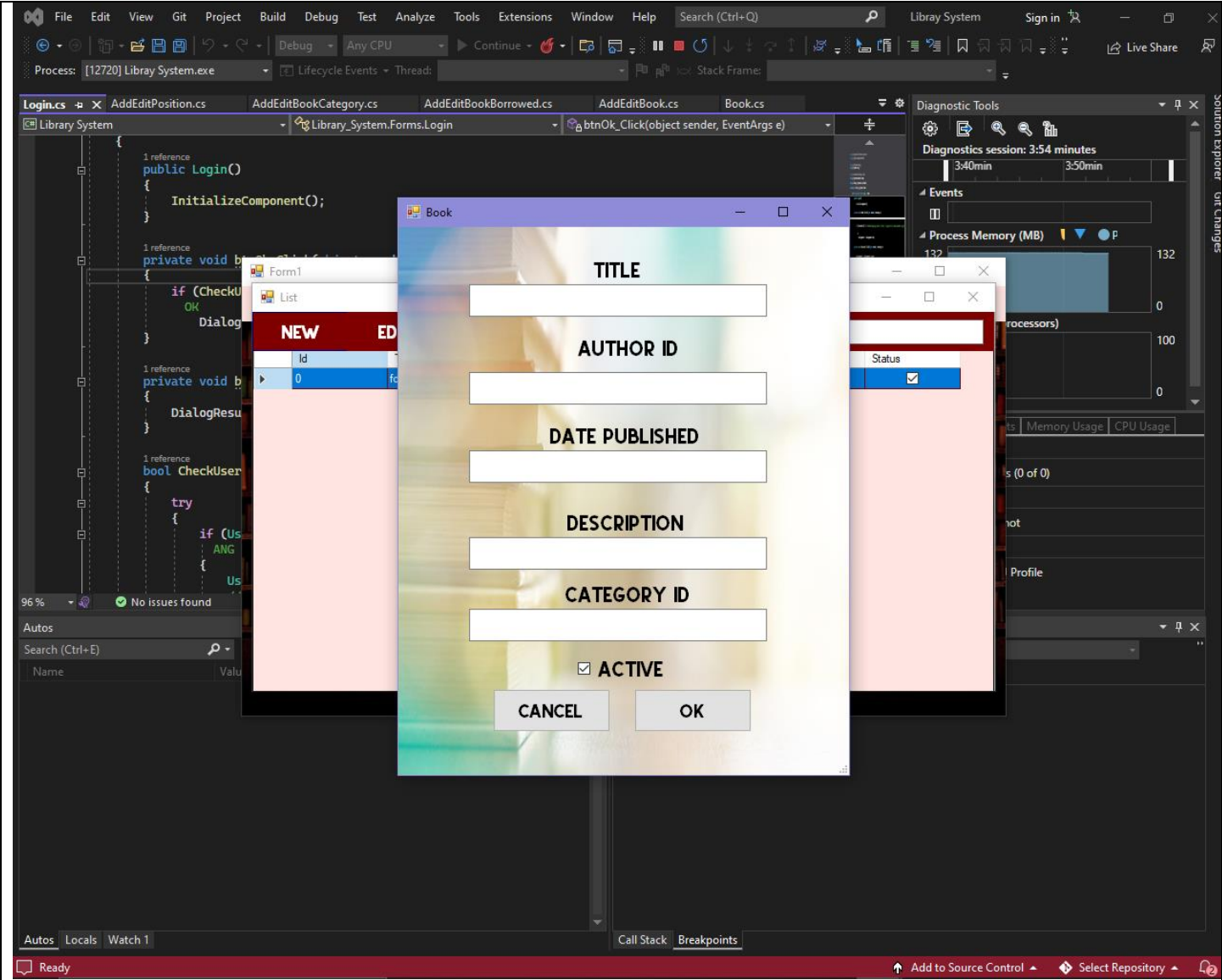
USER

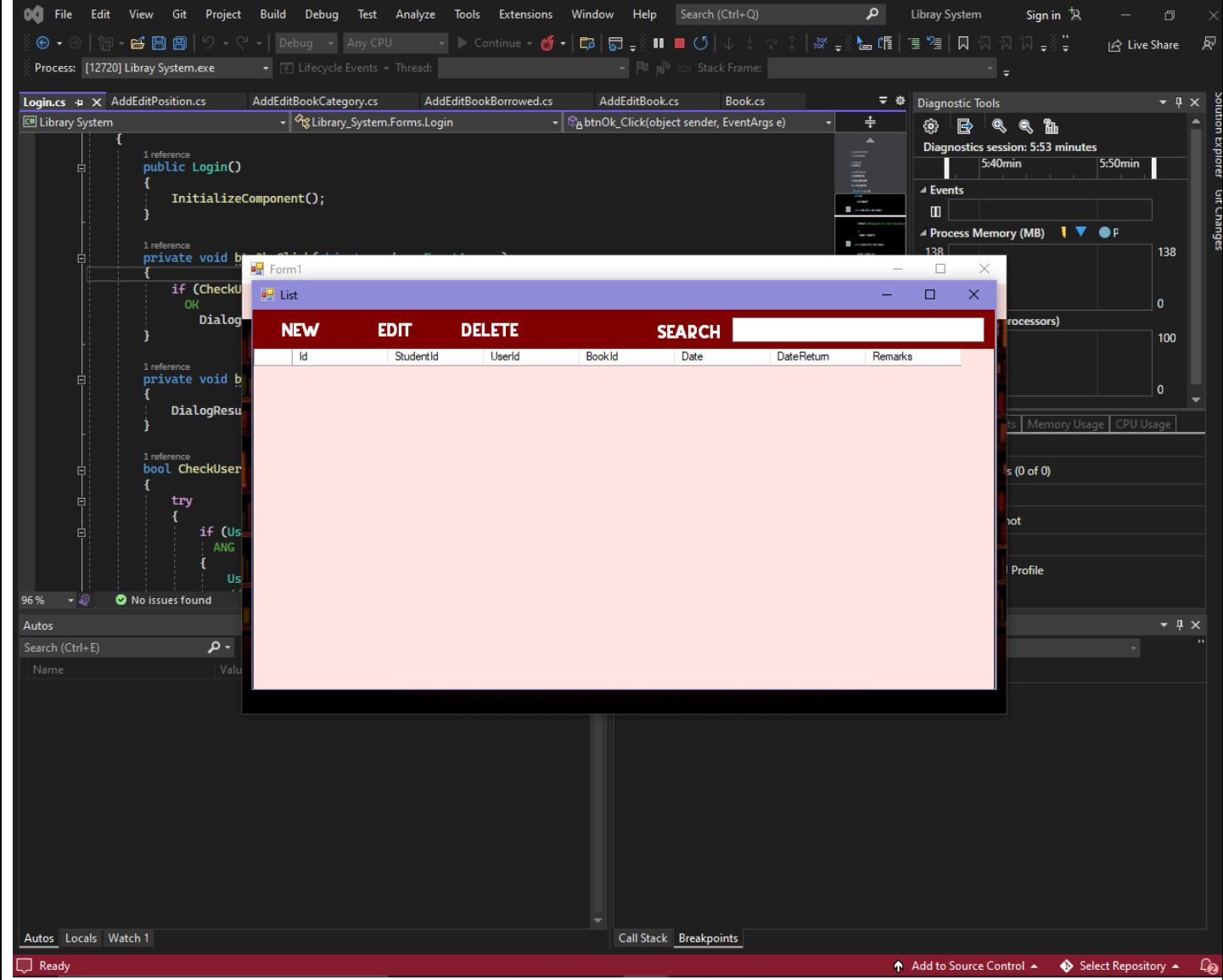
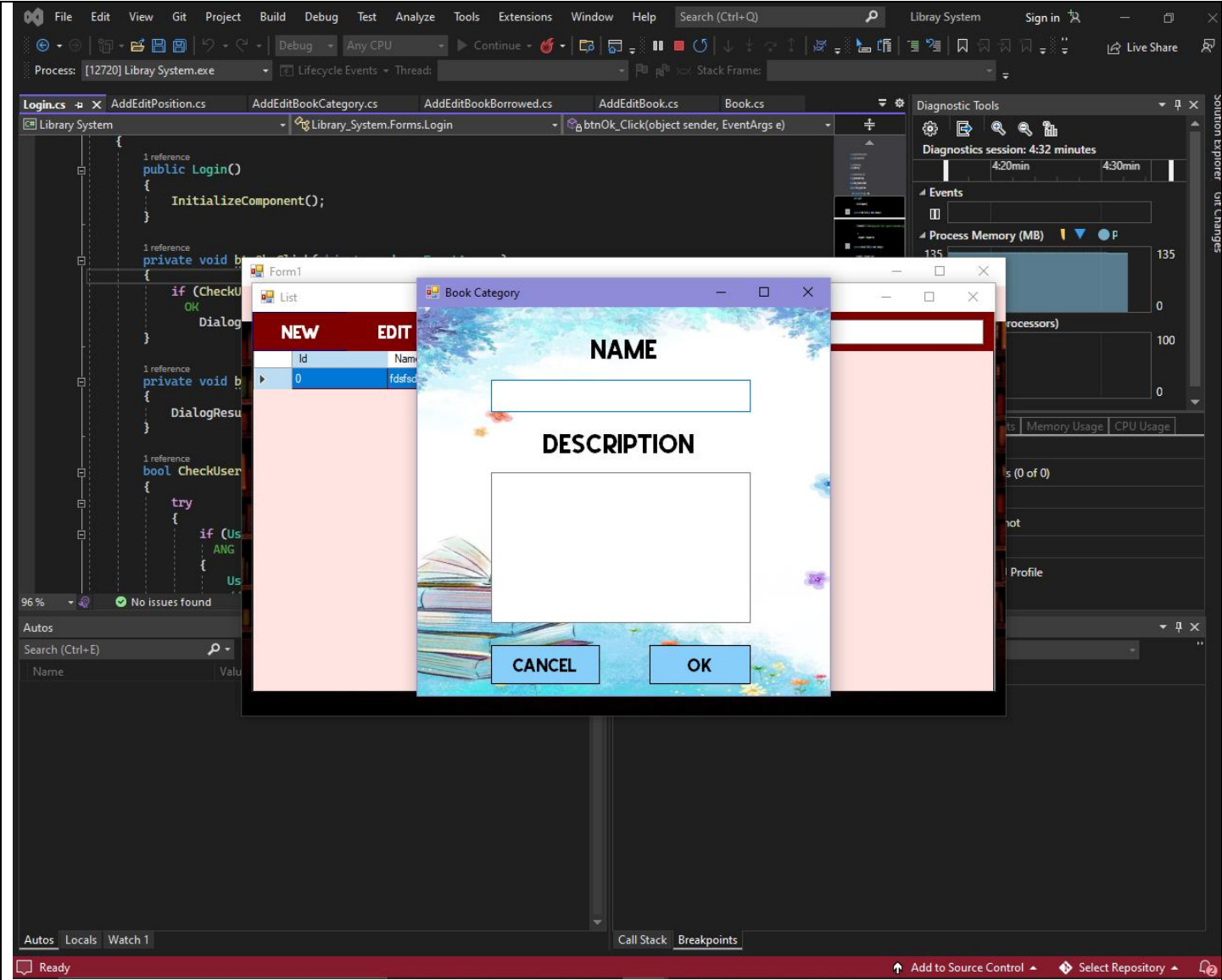


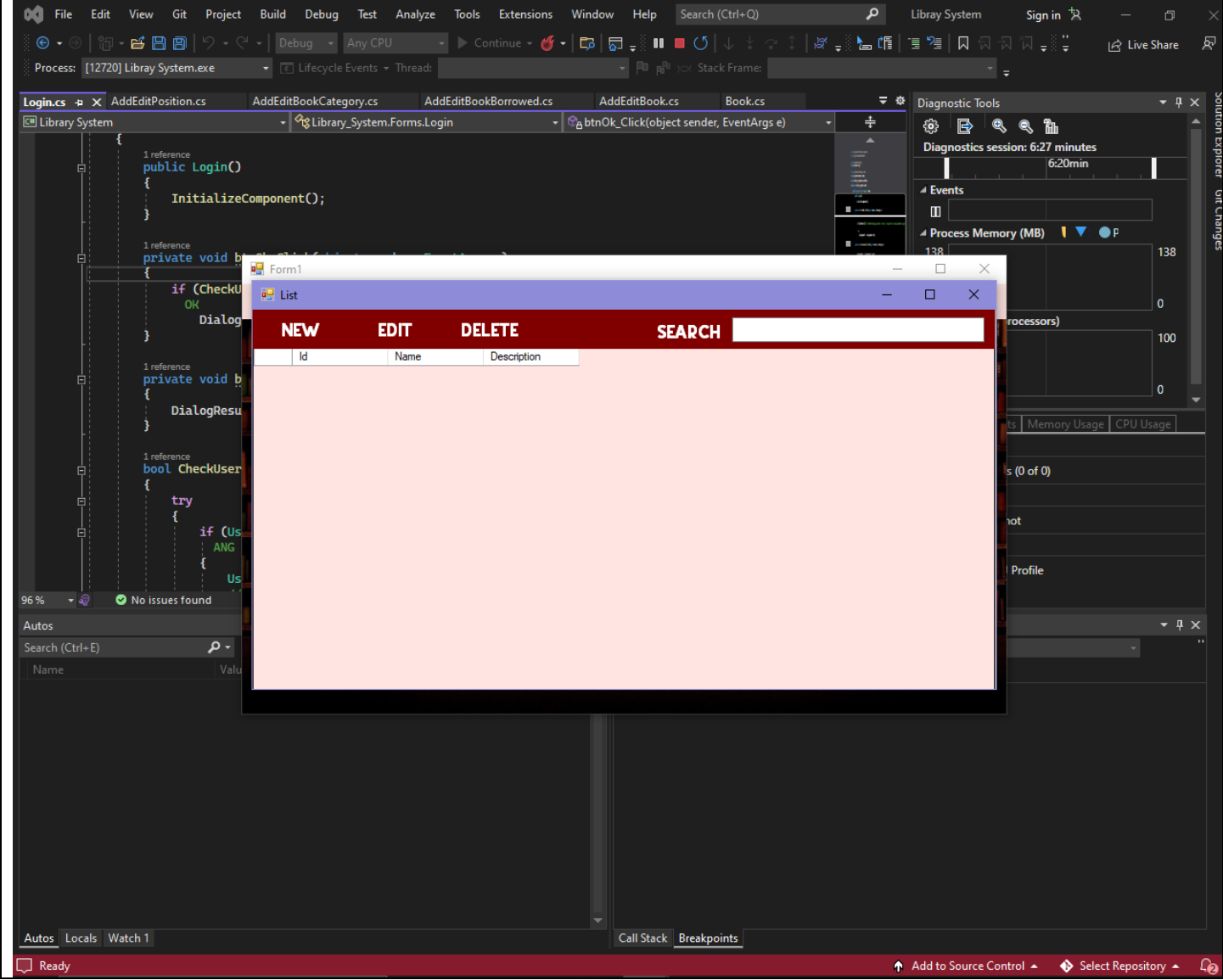
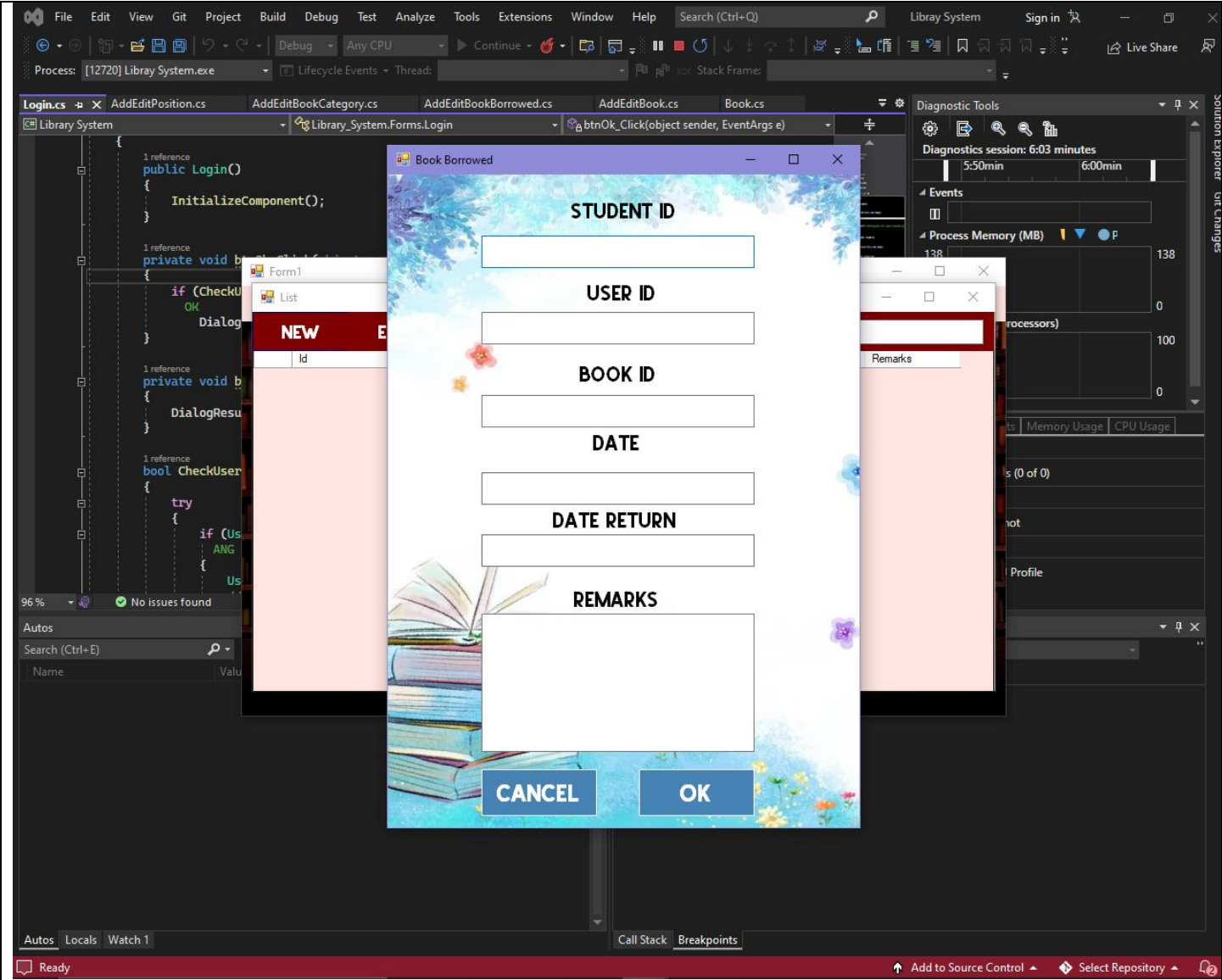


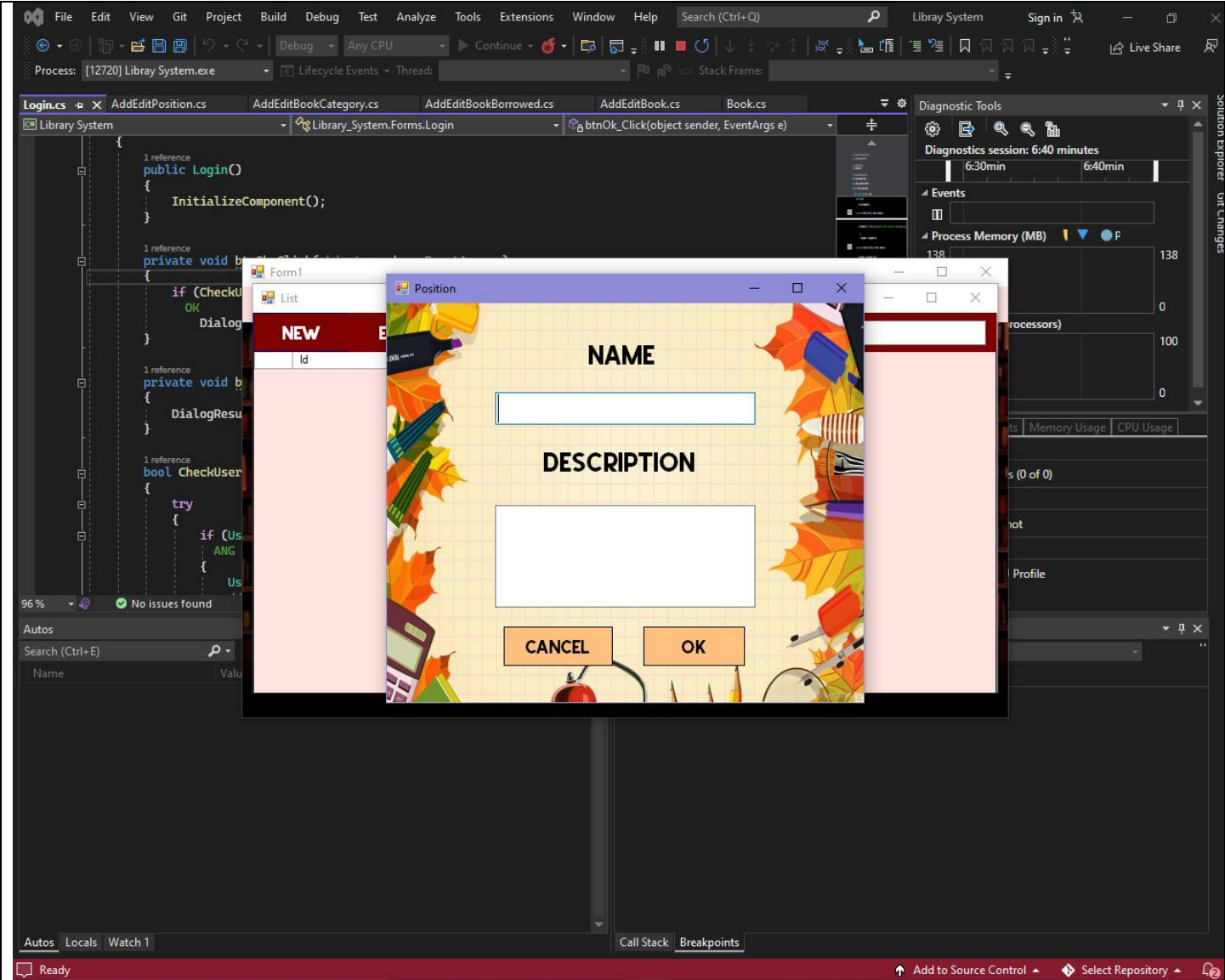














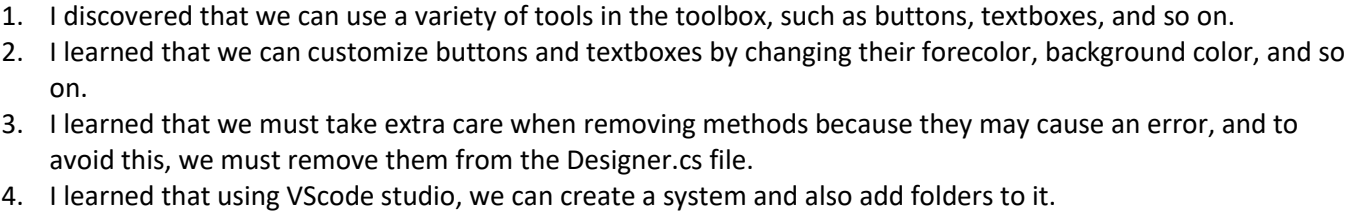



NEW ERROR ENCOUNTERED AND SOLUTION (if any)

Error/s Encountered	Solution
1. N/A	1. N/A



WHAT I LEARNED
It could be new code, terms, techniques, procedures, and/or tips in programming.





SELF-EVALUATION

PROGRAM INDICATORS (90 Points)					
Programming Logic / Algorithmic Analysis	45	33.75	22.5	11.25	Points
	The program compilers have no I/O or logic errors and meets specifications.	The program compiles and has no I/O or logic errors and meets most specifications.	The program compiles, some minimal I/O or logic errors and meets most specifications.	The program produces incorrect results and/or does not compile at and fails to meet majority of specifications.	45
Documentation	10 Points	7.5 Points	5 Points	2.25 Point	10
	The documentation is well written and clearly explains what the code is accomplishing and how.	The documentation is terse but gives a brief overview of what the code is accomplishing and how.	The documentation is vague or does not give a brief overview of what the code is accomplishing and how.	The documentation is vague and does not give a brief overview of what the code is accomplishing and how.	
Delivery	15 Points	11.25 Points	7.5 Points	3.75 Points	15
	The program was delivered on time	The program was delivered within 24 hours of the due date.	The program was delivered within 72 hours of the due date.	The program was delivered within 48 hours of the due date.	
Efficiency	20 Points	15 Points	10 Points	5 Points	20
	The code is extremely efficient without sacrificing readability and understanding	The code is fairly efficient without sacrificing readability and understanding.	The code is brute force and unnecessary long.	The code is huge and appears to be patched together	
RATING					90

LEARNED INDICATORS (10 Points)

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What I learned.	10 Points	7.5 Points	5 Points	2.5 Points	Points
	I learned 4 or more new Code, Terms, Techniques, Procedure, and/or Tips in Programming	I learned 3 new Code, Terms, Techniques, Procedures, and/or Tips in Programming	I learned 2 new Code, Terms, Techniques, Procedures, and/or Tips in Programming	I learned 1 new Code, Term, Technique, Procedures, and/or Tips in Programming	10
RATING					10
FINAL RATING					100