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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;
using Libray_System.Views;
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();
            var book = Book.Lists;
            var aut = Author.Lists;
            var cat = Book_Category.Lists;
            //Language Integrated Query
            var newEntity = from b in book
                             join a in aut on b.AuthorId equals a.Id
                             join c in cat on b.CategoryId equals c.Id
                            select new Books
                                Id = b.Id,
                                 //Names based in Id
                                Title = b.Name,
                                 AuthorName = a.Name,
                                 Category = c.Name,
                                 DatePublished = b.DatePublished,
                                Status = b.Status
                            };
            dataGridView1.DataSource = newEntity.ToList();
        private void userToolStripMenuItem_Click(object sender, EventArgs e)
            ShowList<Users> s = new ShowList<Users>()
                Lists = Users.View,
                AddEditForm = new AddEditUser(),
                DeleteMethod = User.Delete,
                SearchMethod = Users.SearchView,
                ObjectType = Libray_System.Type.User,
                RefreshView = Users.RefreshMethod,
                isView = true
            };
            s.Show();
        }
```

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```
private void Form1_Load(object sender, EventArgs e)// LOGIN form
    Login login = new Login();
    if (login.ShowDialog() != DialogResult.OK)
    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 b00KToolStripMenuItem_Click(object sender, EventArgs e)
    ShowList<Books> s = new ShowList<Books>()
    {
        Lists = Books.View,
        AddEditForm = new AddEditBook(),
        DeleteMethod = Book.Delete,
        SearchMethod = Books.SearchView,
        ObjectType = Libray_System.Type.Book,
        RefreshView = Books.RefreshMethod,
        isView = true
    };
    s.Show();
private void bookBorrowedToolStripMenuItem_Click(object sender, EventArgs e)
    ShowList<BookBorrowed> s = new ShowList<BookBorrowed>()
    {
        Lists = BookBorrowed. View,
        AddEditForm = new AddEditBookBorrowed(),
        DeleteMethod = Book_Borrowed.Delete
        SearchMethod = BookBorrowed.SearchView,
        ObjectType = Libray_System.Type.Book_Borrowed,
        RefreshView = BookBorrowed.RefreshMethod,
        isView = true
    };
    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();
```

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```
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();
        }
   }
}

    UTILITIES

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 DialogBox then Pick an Image
        public static string BrowseImage(PictureBox pb)
            //Ang naopen niyang image ay iseset 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
```

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```
{
             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. Icocompare 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 int NewId()
             try
             {
                 if(File.Exists(FileName))
                     string id = Lists.Max(x=>
x.GetType().GetProperty("Id").GetValue(x)).ToString();
                     return int.Parse(id) + 1;
                 return 0;
             catch (Exception) { return 0; }
        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; }
```

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```
}

    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);
        public delegate List<c> delRefreshView();
        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 delRefreshView RefreshView { get; set; }
        public bool isView { get; set; } = false;
        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.Position)
                EditPosition();
        private void BtnDelete_Click(object sender, EventArgs e)
```

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```
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;
            if (isView)
                lf.dg.DataSource = RefreshView(); //Used to refresh data
                lf.dg.DataSource = Lists;
        ļ
        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();
```

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```

```
}
        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();
        }
    }
}

    IADDEDIT.CS

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Libray_System
    internal interface IAddEdit
        void DisplaySelectedObject();
        void Clear();
    }
}
                                            DATA MODELS

    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]
    public class Author:CRUD<Author>
        public int Id { get; set; } = NewId();
public string Name { get; set; }
        public string About { get; set; }
    }
}
   USER.CS
using System;
```

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```
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; } = NewId();
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;
    }
}
   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; } = NewId();
         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; } = NewId();
public int StudentId { get; set; }
         public int UserId { get; set; }
         public int BookId { get; set;
         public DateTime Date { get; set; }
        public DateTime DateReturn { get; set; }
public string Remarks { get; set; } //To know if there is a damage in the book
    }
}
      BOOK CATEGORY.CS
```

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```
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; } = NewId();
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; } = NewId();
         public string Name { get; set; }
        public int AuthorId { get; set; }
public DateTime DatePublished { get; set; }
        public string Description { get; set; }
public int CategoryId { get; set; }
        public bool Status { get; set; }
    }
}
   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; } = NewId();// Unique Id or Primary Key
public string Name { get; set; }
        public string Description { get; set; }
    }
}
```

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```
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, IAddEdit
        public AddEditAuthor(Author author = null)
            InitializeComponent();
            this.author = author;
            if (author != null)
                 DisplaySelectedObject();
        }
        public Author author;
        public 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;
        public void Clear()
            tbName.Clear()
            tbAbout.Clear();
        private void btnOk_Click(object sender, EventArgs e)
            if (author == null)
                 Author a = new Author()
                     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;
                 }
            }
        }
    }
```

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```
}
   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, IAddEdit
        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; }
        }
        public void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
            pictureBox1.Image = student.Image;
            tbName.DataBindings.Add("Text", student, "Name");
            cbActive.DataBindings.Add("Checked", student, "Status");
        public void Clear()
            tbName.Clear();
        private void btnOk_Click(object sender, EventArgs e)
            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;
```

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```
if (Student.Update(student))
                    Clear(); //Para mawala yung laman sa loob ng form kapag nag add
                    DialogResult = DialogResult.OK;
            }
        ļ
        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;
using Libray_System;
namespace Library_System.Forms
    public partial class AddEditUser : Form, IAddEdit
        public AddEditUser(User user = null)
            InitializeComponent();
            cbPosition.ValueMember = "Id"; //Yung value member ng Data Source manggagaling kay
Ιd
            cbPosition.DisplayMember = "Name"; // Nandito yung name property ng list of
position
            cbPosition.DataSource = Position.Lists;
            User = user;
            if (user != null)
                DisplaySelectedObject();
        User User;
        private void btn0k_Click(object sender, EventArgs e)
            if (ComparePassword())
                if (User == null)
                    User user = new User()
                        Name = tbName.Text,
                        Username = tbUsername.Text,
                        Password = tbPassword.Text
                        PositionId = int.Parse(cbPosition.SelectedValue.ToString()),//Isasave
na yung Value, hindi na yung Text property
                        Status = cbActive.Checked, //Boolean
                         Image = pictureBox1.Image
                    };
                    if (User.Add(user))
                        DialogResult = DialogResult.OK;
                }
                else
```

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```
User.Image = pictureBox1.Image; //Image Update
                      if (User.Update(User)) // Update data
                          DialogResult = DialogResult.OK;
             }
        ļ
        private void btnCancel_Click(object sender, EventArgs e)
             this.DialogResult = DialogResult.Cancel; //Automatic close
        public void DisplaySelectedObject()
             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;
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
        public void Clear()
             pictureBox1.Image = null;
             tbName.Clear();
             tbUsername.Clear();
             tbPassword.Clear();
             cbPosition.SelectedIndex = 0;
             tbPassword.Clear();
             tbRetypePassword.Clear();
             cbActive.Checked = true;
        private void AddEditUser_FormClosing(object sender, FormClosingEventArgs e)
             Clear();
    }
}
   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. ADD EDIT 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, IAddEdit
        Book book;
        bool isNew = true;
        public AddEditBook(Book book = null)
            InitializeComponent();
            cbAuthor.ValueMember = "Id"; //Yung value member ng Data Source manggagaling kay Id
            cbAuthor.DisplayMember = "Name"; // Nandito yung name property ng list of position
            cbAuthor.DataSource = Author.Lists;
            cbAuthor.AutoCompleteMode = AutoCompleteMode.SuggestAppend; //Para macomplete yung
laman ng Authors comboBox
            cbAuthor.AutoCompleteSource = AutoCompleteSource.ListItems;
            cbCategory.ValueMember = "Id"; //Yung value member ng Data Source manggagaling kay
Id
            cbCategory.DisplayMember = "Name"; // Nandito yung name property ng list of
position
            cbCategory.DataSource = Book_Category.Lists;
            cbCategory.AutoCompleteMode = AutoCompleteMode.SuggestAppend; //Para macomplete
yung laman ng Authors comboBox
            cbCategory.AutoCompleteSource = AutoCompleteSource.ListItems;
            this.book = book;
            if (book != null)
                isNew = false;
                DisplaySelectedObject();
            }
        }
        public void Clear()
            tbTitle.Clear();
            cbAuthor.Text = string.Empty;
            cbCategory.Text = string.Empty;
            tbDescription.Clear();
            tbDate.Value = DateTime.Now;
            tbDescription.Clear();
            cbActive.Checked = true;
        }
        public void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
            tbTitle.Text = book.Name;
            cbAuthor.SelectedValue = book.AuthorId;
```

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```
tbDate.Value = DateTime.Now;
            tbDescription.Text = book.Description;
            cbCategory.SelectedValue = book.CategoryId;
            cbActive.Checked = book.Status;
        }
        private void btnOk_Click(object sender, EventArgs e)
            if (isNew)
                book = new Book();
            book.Name = tbTitle.Text;
            book.AuthorId = int.Parse(cbAuthor.SelectedValue.ToString());
            book.DatePublished = tbDate.Value;
            book.Description = tbDescription.Text;
            book.CategoryId = int.Parse(cbCategory.SelectedValue.ToString());
            book.Status = cbActive.Checked;
            if (isNew)
                if (Book.Add(book))
                    DialogResult = DialogResult.OK;
            }
            else
               if (Book.Update(book))
                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, IAddEdit
        Book_Borrowed BookBorrowed;
        bool isNew = true;
        public AddEditBookBorrowed(Book_Borrowed bookBorrowed = null)
            InitializeComponent();
            cbStudent.ValueMember = "Id";
            cbStudent.DisplayMember = "Name";
            cbStudent.DataSource = Student.Lists;
            cbStudent.AutoCompleteMode = AutoCompleteMode.SuggestAppend;
            cbStudent.AutoCompleteSource = AutoCompleteSource.ListItems;
            cbUser.ValueMember = "Id";
            cbUser.DisplayMember = "Name";
            cbUser.DataSource = User.Lists;
            cbUser.AutoCompleteMode = AutoCompleteMode.SuggestAppend;
            cbUser.AutoCompleteSource = AutoCompleteSource.ListItems;
            cbBook.ValueMember = "Id";
```

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```
cbBook.DisplayMember = "Name";
            cbBook.DataSource = Book.Lists;
            cbBook.AutoCompleteMode = AutoCompleteMode.SuggestAppend;
            cbBook.AutoCompleteSource = AutoCompleteSource.ListItems;
            this.BookBorrowed = bookBorrowed;
            if (BookBorrowed != null)
                isNew = false;
                DisplaySelectedObject();
            }
        }
        public void DisplaySelectedObject()
            cbStudent.SelectedValue = BookBorrowed.StudentId;
            cbUser.SelectedValue = BookBorrowed.UserId;
            cbBook.SelectedValue = BookBorrowed.BookId;
            dtDate.Value = DateTime.Now;
            dtDateReturn.Value = DateTime.Now;
            tbRemarks.Text = BookBorrowed.Remarks;
        }
        private void btn0k_Click(object sender, EventArgs e)
            if (isNew)
                BookBorrowed = new Book_Borrowed();
            BookBorrowed.StudentId = int.Parse(cbStudent.SelectedValue.ToString());
            BookBorrowed.UserId = int.Parse(cbUser.SelectedValue.ToString());
            BookBorrowed.BookId = int.Parse(cbBook.SelectedValue.ToString());
            BookBorrowed.Date = dtDate.Value;
            BookBorrowed.DateReturn = dtDateReturn.Value;
            BookBorrowed.Remarks = tbRemarks.Text;
            if (isNew)
                if (Book_Borrowed.Add(BookBorrowed))
                    DialogResult = DialogResult.OK;
            }
                if (Book_Borrowed.Update(BookBorrowed))
                DialogResult = DialogResult.OK;
        }
        public void Clear()
            cbStudent.Text = string.Empty;
            cbUser.Text = string.Empty;
            cbBook.Text = string.Empty;
            dtDate.Value = DateTime.Now;
            dtDateReturn.Value = DateTime.Now;
            tbRemarks.Clear();
        private void btnCancel_Click(object sender, EventArgs e)
            this.DialogResult = DialogResult.Cancel; //Automatic close
        private void AddEditBookBorrowed_FormClosing(object sender, FormClosingEventArgs e)
            Clear();
        }
    }
}
   7. BOOK CATEGORY. CS
using System;
using System.Collections.Generic;
```

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```
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;
using Libray_System;
namespace Libray_System.Forms
    public partial class AddEditBookCategory : Form, IAddEdit
        public Book_Category category;
        bool isNew = true;
        public AddEditBookCategory(Book_Category category = null)
            InitializeComponent();
            this.category = category;
            if (category != null)
                isNew = false;
                DisplaySelectedObject();
       }
        public void Clear()
            tbName.Clear();
            tbDescription.Clear();
        private void btn0k_Click(object sender, EventArgs e)
            if (isNew)
                category = new Book_Category();
            category.Name = tbName.Text;
            category.Description = tbDescription.Text;
            if(isNew)
            {
                if(Book_Category.Add(category))
                    DialogResult = DialogResult.OK;
            }
            else
               if(Book_Category.Update(category))
                DialogResult = DialogResult.OK;
        }
        public void DisplaySelectedObject() // Kapag Mag EEDIT, tatawagin ito ---->
            tbName.Text = category.Name;
            tbDescription.Text = category.Description;
        private void btnCancel_Click(object sender, EventArgs e)
            this.DialogResult = DialogResult.Cancel;
        private void AddEditBookCategory_FormClosing(object sender, FormClosingEventArgs e)
            Clear();
        }
    }
}
```

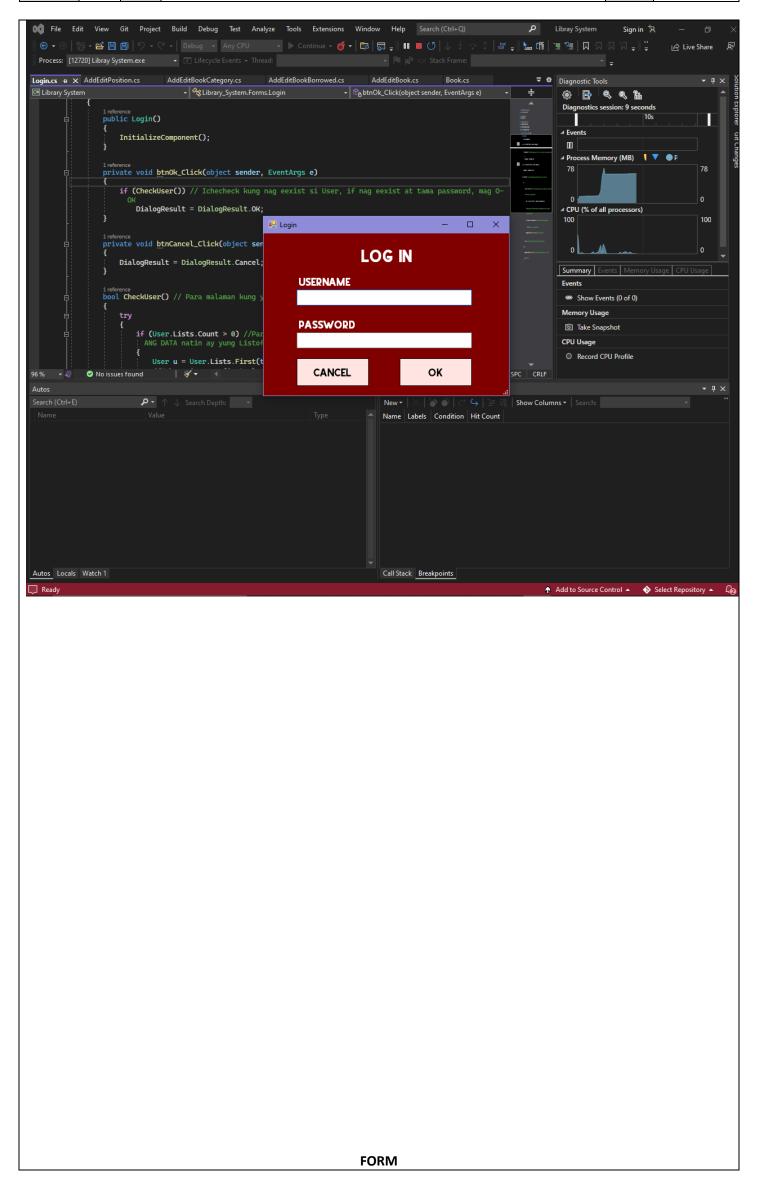
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```
8. POSITION. CS
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Library_System;
using Library_System.Data_Model;
using Libray_System;
namespace Libray_System.Forms
    public partial class AddEditPosition : Form, IAddEdit
        Position position;
        bool isNew = true;
        public AddEditPosition(Position position = null)
            InitializeComponent();
            this.position = position;
            if(position != null)
                isNew = false;
                DisplaySelectedObject();
            }
        }
        public void Clear()
            tbName.Clear();
            tbDescription.Clear();
        public void DisplaySelectedObject()
            tbName.Text = position.Name;
            tbDescription.Text = position.Description;
        private void btnOk_Click(object sender, EventArgs e)
            if (isNew)
                position = new Position();
            position.Name = tbName.Text;
            position.Description = tbDescription.Text;
            if (isNew)
            {
                if (Position.Add(position))
                    DialogResult = DialogResult.OK;
            else
               if (Position.Update(position))
                DialogResult = DialogResult.OK;
        private void AddEditPosition_FormClosing(object sender, FormClosingEventArgs e)
            Clear();
        }
    }
}
   9. LOGIN .CS
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
```

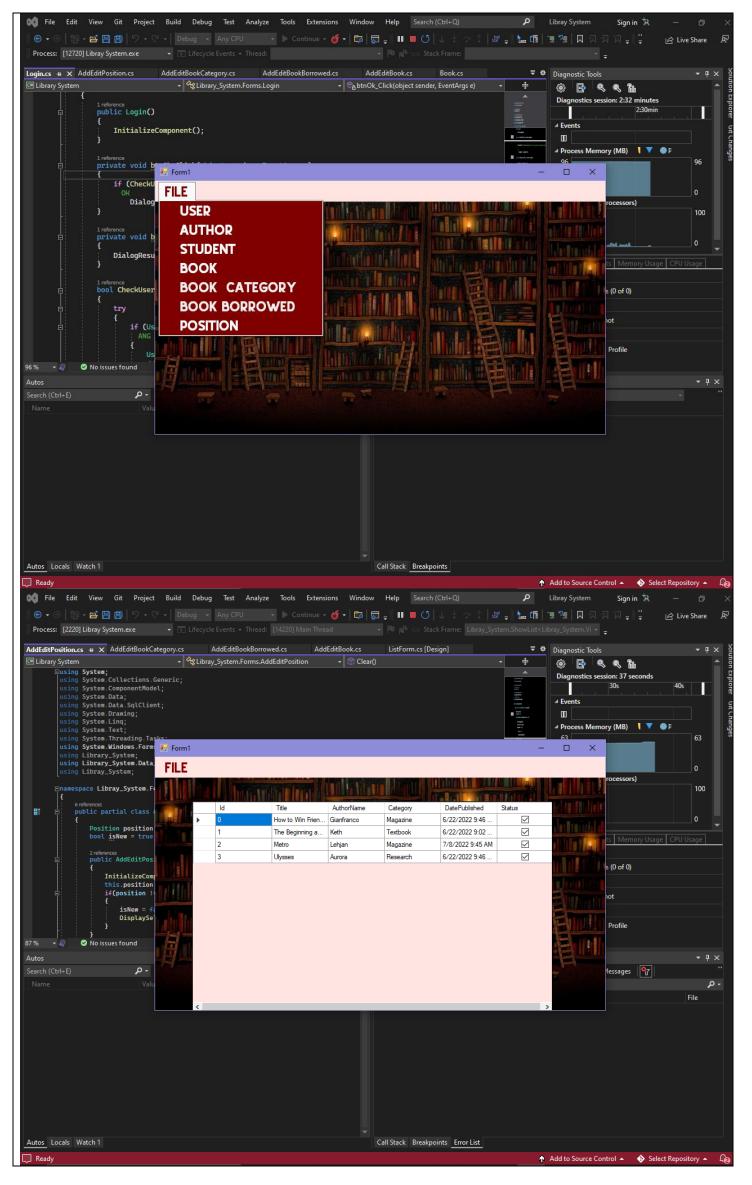
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```
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Library_System.Data_Model;
namespace Library_System.Forms
   public partial class Login : Form
        public Login()
            InitializeComponent();
        private void btnOk_Click(object sender, EventArgs e)
            if (CheckUser()) // Ichecheck kung nag eexist si User, if nag eexist at tama
password, mag 0-0K
                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;
            }
       }
   }
}
```

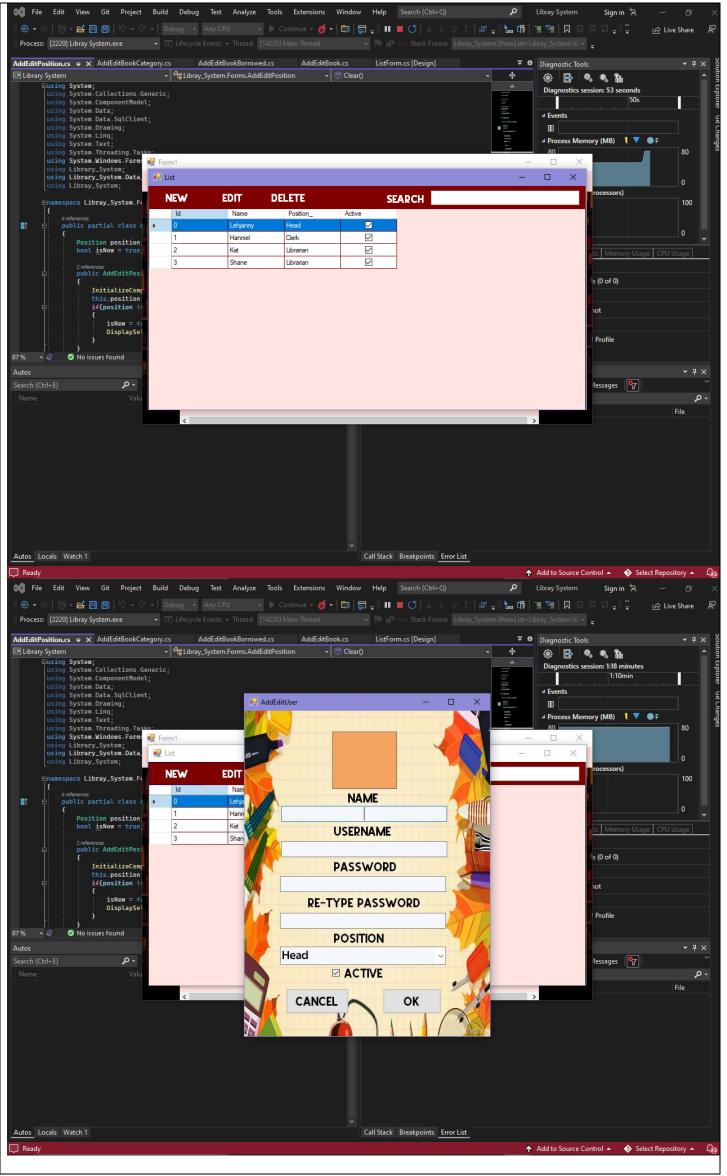
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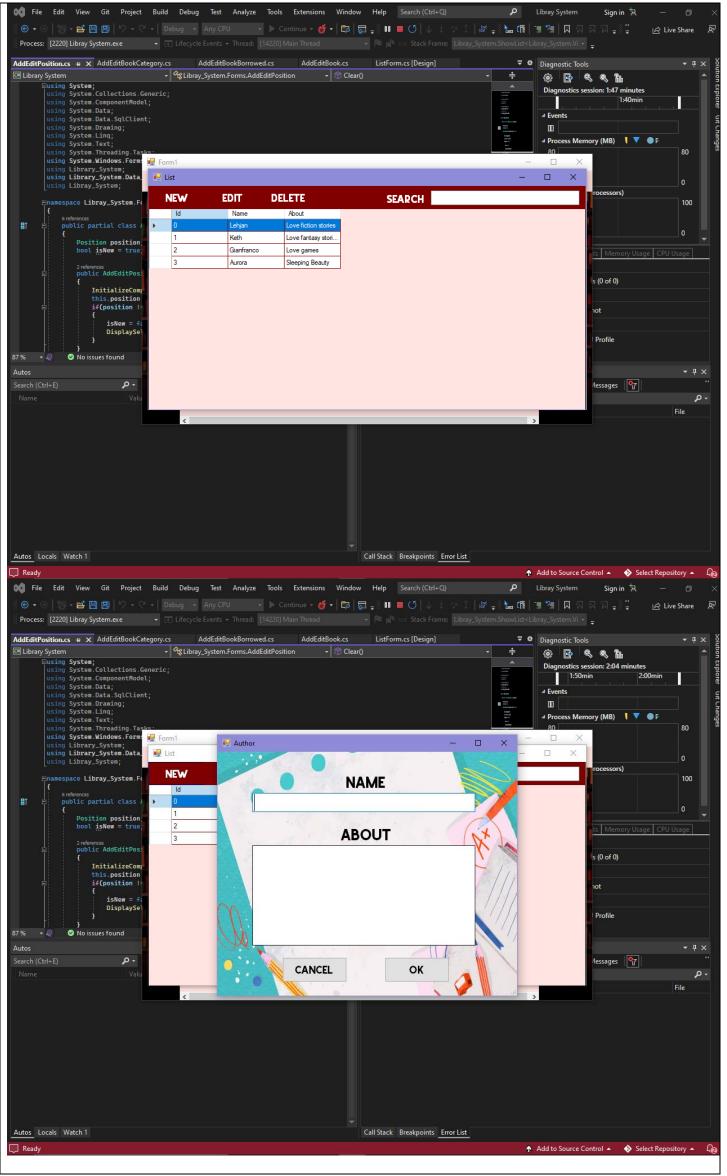
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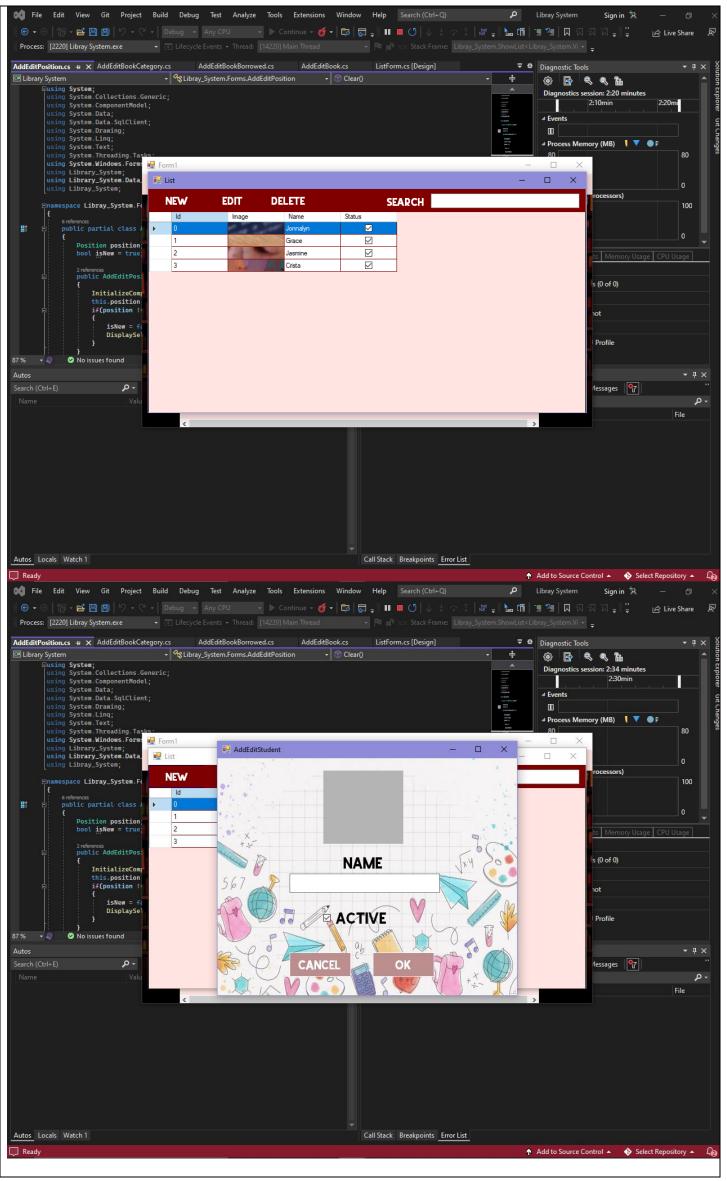
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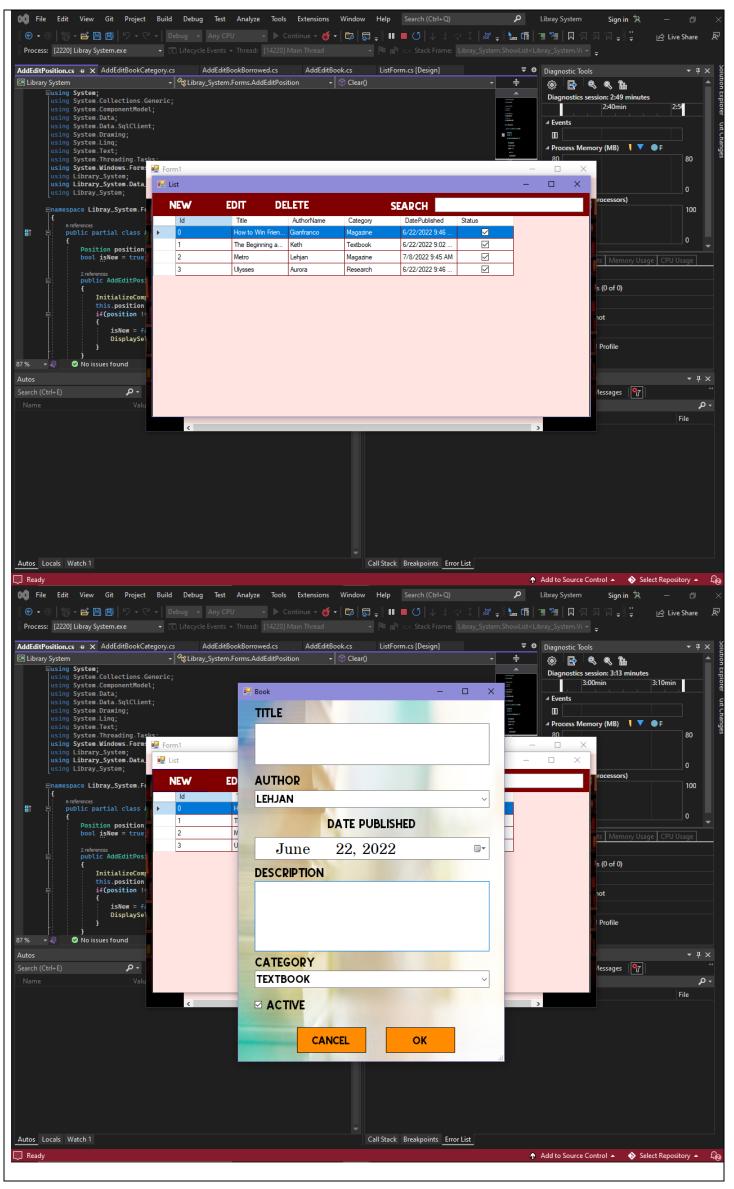
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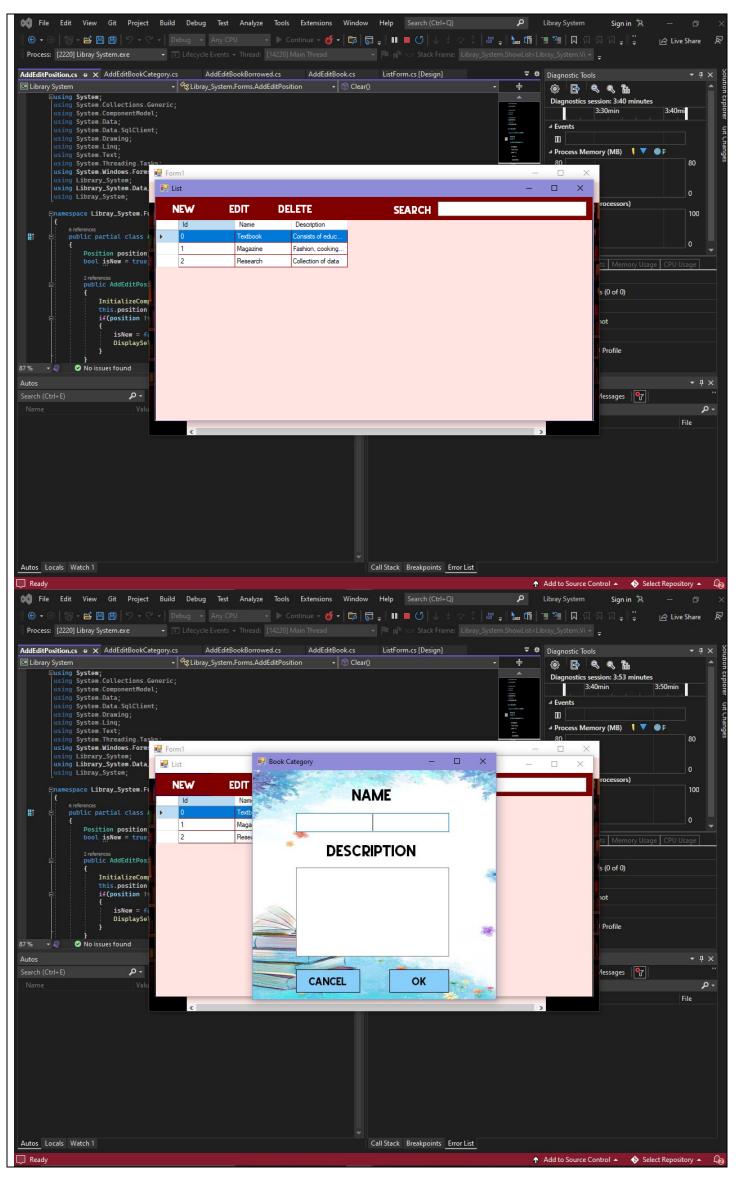
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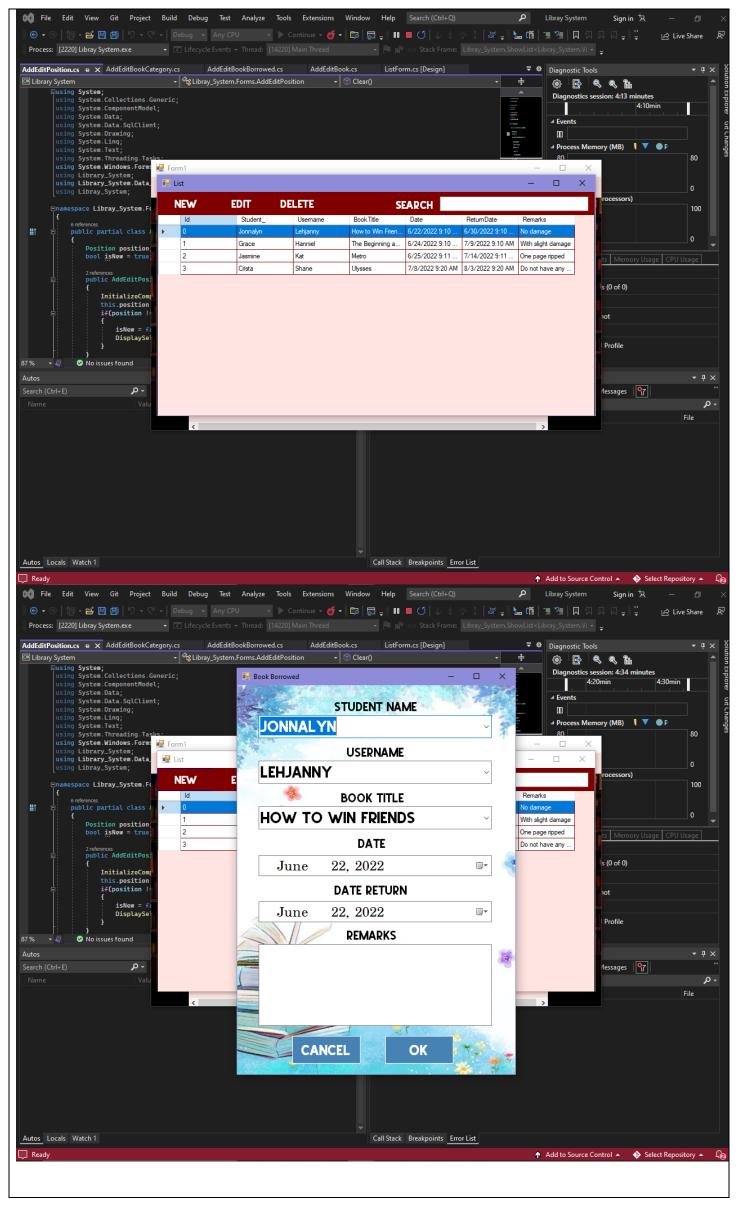
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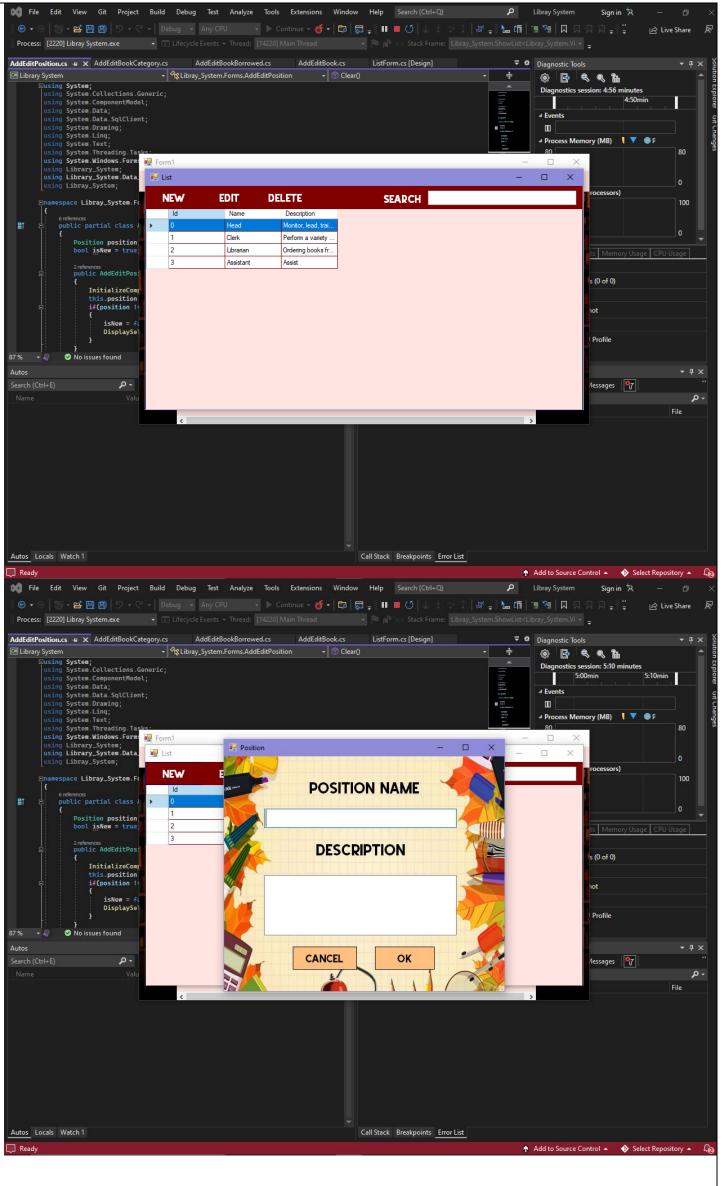
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Name Lehjanny Ann V. Ilao

Date 06/22/2022

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## **WHAT I LEARNED**

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

- 1. I discovered that we can use a variety of tools in the toolbox, such as buttons, textboxes, and so on.
- 2. I learned that we can customize buttons and textboxes by changing their forecolor, background color, and so on.
- 3. I learned that we must take extra care when removing methods because they may cause an error, and to avoid this, we must remove them from the Designer.cs file.
- 4. I learned that using VScode studio, we can create a system and also add folders to it.



## **SELF-EVALUATION**

PROGRAM INDIC	ATORS (90 Points)				
Programming	45	33.75	22.5	11.25	Points
Logic / Algorithmic Analysis  Documentation	The program compilers have no I/O or logic errors and meets specifications.  10 Points The documentation is	The program compiles and has no I/O or logic errors and meets most specifications.  7.5 Points The documentation is	The program compiles, some minimal I/O or logic errors and meets most specifications.  5 Points The documentation is vague or does	The program produces incorrect results and/or does not compile at and fails to meet majority of specifications.  2.25 Point  The documentation is vague and does	45
Delivery	well written and clearly explains what the code is accomplishing and how.  15 Points	terse but gives a brief overview of what the code is accomplishing and how.  11.25 Points	not give a brief overview of what the code is accomplishing and how.  7.5 Points	not give a brief overview of what the code is accomplishing and how.  3.75 Points	15
Delivery	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.	15
Efficiency	20 Points  The code is extremely efficient without sacrificing readability and understanding	15 Points  The code is fairly efficient without sacrificing readability and understanding.	10 Points  The code is brute force and unnecessary long.	5 Points  The code is huge and appears to be patched together	20
LEARNED INDICA	TORS (10 Points)			RATING	90
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	Code, Terms, Techniques,		I learned 1 new Code, Term, Technique, Procedures, and/or Tips in Programming	10
				RATING	10
				FINAL RATING	100