הסברים קצרים :

Form close open

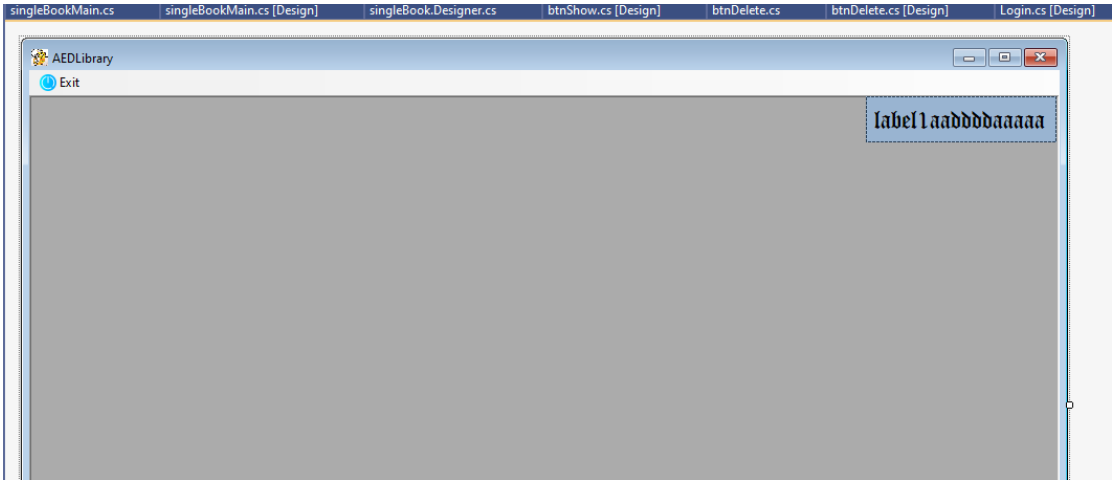
```
public partial class programForm : Form
    {
        private Rectangle[] controlerOriginalRectangle;
        // save pointer to controls
        private Control[] controls;
        private Rectangle originalFormSize;

        public programForm()
        {
            InitializeComponent();
        }

        private void programForm_Load(object sender, EventArgs e)
        {
            Login login = new Login();
            login.MdiParent = this;
            login.Location = new Point(0, 0);
            login.Dock = DockStyle.Fill;
            login.Show();

            HelpFunc.Form_LoadCreateRectangles(ref originalFormSize, ref
controls, ref controlerOriginalRectangle, this);
        }

        private void ProgramForm_Resize(object sender, EventArgs e)
        {
            // loop over controls and updates values
            HelpFunc.Form_Resize(controls,
controlerOriginalRectangle,originalFormSize,this);

        }
                                                                                    }
```

```
  public partial class Login : Form
    {
        // save values
        private Rectangle[] controlerOriginalRectangle;
        // save pointer to controls
        private Control[] controls;
        private Rectangle originalFormSize;

        private UserLogic userLogic;

        public Login()
        {
            InitializeComponent();
            userLogic = new UserLogic();
        }

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

```
            HelpFunc.addImgCursor("Move.png", new Size(80, 80),
specialButton1);
            HelpFunc.Form_LoadCreateRectangles(ref originalFormSize, ref
controls, ref controlerOriginalRectangle, this);

        }

        private void Form1_Resize(object sender, EventArgs e)
        {
            HelpFunc.Form_Resize(controls, controlerOriginalRectangle,
originalFormSize, this);
        }

        private void specialButton1_Click(object sender, EventArgs e)
        {
            string? checkValues;
            checkValues = Validation_CheckUser.checkId(id.Text);
            HelpFunc.checkAndSetError(id,checkValues,errorId);

            checkValues = Validation_CheckUser.checkEmail(email.Text);
            HelpFunc.checkAndSetError(email, checkValues, errorEmail);

            checkValues =
Validation_CheckUser.checkPassword(password.Text);
            HelpFunc.checkAndSetError(password, checkValues,
errorPassword);

            if (checkValues == null)
            {
                object resFun =
userLogic.ShowFromUser_UserFromSpecific_Id_Email_Password(id.Text,
email.Text, password.Text);
                if (resFun.GetType() != typeof(DataTable))
                {
                    MessageBox.Show(resFun.ToString());
                }
                else
                {
                    DataTable dt = (DataTable)resFun;
                    User user = new User();
                    foreach (DataRow row in dt.Rows)
                    {
                        user = new User()
                        {
                            Id = row["id"].ToString()!,
                            Email = row["email"].ToString()!,
                            Password = row["password"].ToString()!,
                            FirstName = row["FirstName"].ToString()!,
                            LastName = row["LastName"].ToString()!,
                            Type = (bool)row["type"]
                        };

                    }
                    Main main = new Main(user);
                    main.Location = new Point((this.MdiParent.Width) / 2,
(this.MdiParent.Height) / 2);
                    main.Activate();
                    main.Show();
                    this.MdiParent.Hide();
                }

            }
```

}


WELCOME TO THE LIBRARY MANAGEMENT SYSTEM OF AED
ENTER USER DETAILS
Id :
Your id
Email :
Your email
Password :
Your password
LOGIN


singleBookMain.cs
singleBookMain.cs [Design]
singleBook.Designer.cs
btnShow.cs [Design]
btnDelete.cs
btnDelete.cs [Design]
Login.cs [Design]
AEDLibrary
Exit
label1aaddddaaaaa

Tool strip

```
public Main(User _user)
        {
            InitializeComponent();
            HelpFunc.Form_LoadCreateRectangles(ref originalFormSize, ref
controls, ref controlerOriginalRectangle, this);
            user = _user;
        }

        private void Main_Load(object sender, EventArgs e)
        {

            nameUser.Text = user.FirstName+ " " + user.LastName;
            HelpFunc.playSound(@"appSong.wav");

            // rules -
            // Library employees can access everything
            //// A library subscriber can access:
            //Book : show
            //Borrow : show only of him

            #region createBasicMenu

            #region createMenuApp
            //
            // menuApp
            //
            menuApp.Items.AddRange(new
System.Windows.Forms.ToolStripItem[] {
            showToolStripMenuItem,
            showToolStripMenuItem1});
            #endregion

            #region ToolStripMenu - Book
            //
            // ToolStripMenu - Book
            //
            this.showToolStripMenuItem.Image =
global::AppLayer.Properties.Resources.BookIcon;
            this.showToolStripMenuItem.Name = "showToolStripMenuItem";
            this.showToolStripMenuItem.Size = new System.Drawing.Size(67,
20);
            this.showToolStripMenuItem.Text = "Books";

this.showToolStripMenuItem.DropDownItems.Add(this.showToolStripMenuItem5);
            //
            // Show
            //
            this.showToolStripMenuItem5.Name = "showToolStripMenuItem5";
            this.showToolStripMenuItem5.Size = new
System.Drawing.Size(180, 22);
            this.showToolStripMenuItem5.Text = "Show";
```

```
            this.showToolStripMenuItem5.DropDownItems.AddRange(new
System.Windows.Forms.ToolStripItem[] {
                this.showAllToolStripMenuItem1,
                this.showSearchToolStripMenuItem1}); ;
                                                                    //




if (true)
            {
                #region createAdvanceMenu

                #region addToMenu
                //
                // menuApp
                //
                menuApp.Items.AddRange(new
System.Windows.Forms.ToolStripItem[] {
                showToolStripMenuItem2,
                showToolStripMenuItem3});
                #endregion

                #region ToolStripMenu - Book
                //
                // ToolStripMenu - Book
                //
                this.showToolStripMenuItem.DropDownItems.AddRange(new
System.Windows.Forms.ToolStripItem[] {
                this.addToolStripMenuItem,
                this.showToolStripMenuItem4,
                this.showToolStripMenuItem5,
                this.updateToolStripMenuItem});

                //
                // Add
                //
                this.addToolStripMenuItem.Name = "addToolStripMenuItem";
                this.addToolStripMenuItem.Size = new
System.Drawing.Size(180, 22);
                this.addToolStripMenuItem.Text = "Add";
                this.addToolStripMenuItem.Click += new
System.EventHandler(this.MenuItem_Click);
                //
                // Delete
                //
                this.showToolStripMenuItem4.Name =
"showToolStripMenuItem4";
                this.showToolStripMenuItem4.Size = new
System.Drawing.Size(180, 22);
                this.showToolStripMenuItem4.Text = "Delete";
                this.showToolStripMenuItem4.Click += new
System.EventHandler(this.MenuItem_Click);
                //
                // Update
                //
                this.updateToolStripMenuItem.Name =
"updateToolStripMenuItem";
                this.updateToolStripMenuItem.Size = new
System.Drawing.Size(180, 22);
                this.updateToolStripMenuItem.Text = "Update";
```

```
                this.updateToolStripMenuItem.Click += new
System.EventHandler(this.MenuItem_Click);
                #endregion

                #region ToolStripMenu - Borrow

                //
                // ToolStripMenu - Borrow
                //
                this.showToolStripMenuItem1.DropDownItems.AddRange(new
System.Windows.Forms.ToolStripItem[] {
                this.addToolStripMenuItem1,
                this.showToolStripMenuItem6,
                this.showToolStripMenuItem7,
                                            this.updateToolStripMenuItem1});









private void MenuItem_Click(object sender, EventArgs e)
        {

            FormCollection FormsOpen = Application.OpenForms;
            for (int i = 0; i < FormsOpen.Count; i++)
            {
                if (FormsOpen[i].Name != "Main")
                    FormsOpen[i].Close();
            }

            ToolStripMenuItem menuStrip = (ToolStripMenuItem)sender;
            ToolStripItem parent = menuStrip.OwnerItem;
            // show all example in show
            if (parent.Text != "Books" && parent.Text != "Borrow" &&
parent.Text != "Categories" && parent.Text != "Users")
            {
                parent = parent.OwnerItem;
            }


                switch (parent.Text)
            {
                case "Books":
                    AreaBook book = new AreaBook(menuStrip.Text,null);
                    book.MdiParent = this;
                    book.Activate();
                    book.Show();
                    book.Size = new Size(this.Width - 100, this.Height -
150);
                    book.Location = new Point((this.Width - book.Width) /
2 - 10, (this.Height - book.Height) / 2 - 30);
                    break;

                case "Borrow":
                    AreaBorrow borrow = new AreaBorrow(menuStrip.Text);
                    borrow.MdiParent = this;
                    borrow.Activate();
                    borrow.Show();
```

```
                    borrow.Size = new Size(this.Width - 100, this.Height -
150);
                    borrow.Location = new Point((this.Width -
borrow.Width) / 2 - 10, (this.Height - borrow.Height) / 2 - 30);
                    break;

                case "Categories":
                    AreaExistingCategories existingCategories = new
AreaExistingCategories(menuStrip.Text);
                    existingCategories.MdiParent = this;
                    existingCategories.Activate();
                    existingCategories.Show();
                    existingCategories.Size = new Size(this.Width - 100,
this.Height - 150);
                    existingCategories.Location = new Point((this.Width -
existingCategories.Width) / 2 - 10, (this.Height -
existingCategories.Height) / 2 - 30);
                    break;

                case "Users":
                    AreaUser user = new AreaUser(menuStrip.Text);
                    user.MdiParent = this;
                    user.Activate();
                    user.Show();
                    user.Size = new Size(this.Width - 100, this.Height -
150);
                    user.Location = new Point((this.Width - user.Width) /
2 - 10, (this.Height - user.Height) / 2 - 30);
                    break;
            }


        }


        private void Main_Resize(object sender, EventArgs e)
        {
            HelpFunc.Form_Resize(controls, controlerOriginalRectangle,
originalFormSize, this);
        }

        private void exitToolStripMenuItem_Click(object sender, EventArgs
e)
        {
            Application.Exit();
                                                                        }
```

SpecialButton

```
using System.Windows.Forms;
using System.Drawing;
using System.Drawing.Drawing2D;
using System.ComponentModel;

namespace AppLayer.SpecialComponents
{
    public class SpecialButton : Button
    {
        //Fields
        private int borderSize = 0;
        private int borderRadius = 20;
        private Color borderColor = Color.PaleVioletRed;

        //Constructor
        public SpecialButton()
        {
            this.FlatStyle = FlatStyle.Flat;
            this.FlatAppearance.BorderSize = 0;
            this.Size = new Size(150, 40);
            this.BackColor = Color.MediumSlateBlue;
            this.ForeColor = Color.White;
            this.Resize += new EventHandler(Button_Resize);
        }
        private void Button_Resize(object sender, EventArgs e)
        {
            if (borderRadius > this.Height)
                borderRadius = this.Height;
        }

        //Properties
        [Category("SpecialButton Get_Set_Fun")]
        public int BorderSize
        {
            get { return borderSize; }
            set
            {
                borderSize = value;
                // Invalidates the entire surface of the control and
causes the control to be redrawn.
                this.Invalidate();
            }
        }
        [Category("SpecialButton Get_Set_Fun")]
        public int BorderRadius
        {
            get { return borderRadius; }
            set
            {
                borderRadius = value;
                this.Invalidate();
            }
        }
        [Category("SpecialButton Get_Set_Fun")]
        public Color BorderColor
        {
            get { return borderColor; }
            set
```

```
            {
                borderColor = value;
                this.Invalidate();
            }
        }
        [Category("SpecialButton Get_Set_Fun")]
        public Color BackgroundColor
        {
            get { return this.BackColor; }
            set { this.BackColor = value; }
        }
        [Category("SpecialButton Get_Set_Fun")]
        public Color TextColor
        {
            get { return this.ForeColor; }
            set { this.ForeColor = value; }
        }


        //Methods
        private GraphicsPath GetFigurePath(Rectangle rect, float radius)
        {
            GraphicsPath path = new GraphicsPath();
            float curveSize = radius * 2F;
            path.StartFigure();
            path.AddArc(rect.X, rect.Y, curveSize, curveSize, 180, 90);
            path.AddArc(rect.Right - curveSize, rect.Y, curveSize,
curveSize, 270, 90);
            path.AddArc(rect.Right - curveSize, rect.Bottom - curveSize,
curveSize, curveSize, 0, 90);
            path.AddArc(rect.X, rect.Bottom - curveSize, curveSize,
curveSize, 90, 90);
            path.CloseFigure();
            return path;
        }

        protected override void OnPaint(PaintEventArgs pevent)
        {
            base.OnPaint(pevent);

            Rectangle rectSurface = this.ClientRectangle;
            Rectangle rectBorder = Rectangle.Inflate(rectSurface, -
borderSize, -borderSize);
            int smoothSize = 2;
            if (borderSize > 0)
                smoothSize = borderSize;

            if (borderRadius > 2) //Rounded button
            {
                using (GraphicsPath pathSurface =
GetFigurePath(rectSurface, borderRadius))
                using (GraphicsPath pathBorder = GetFigurePath(rectBorder,
borderRadius - borderSize))
                using (Pen penSurface = new Pen(this.Parent.BackColor,
smoothSize))
                using (Pen penBorder = new Pen(borderColor, borderSize))
                {
                    pevent.Graphics.SmoothingMode =
SmoothingMode.AntiAlias;
                    //Button surface
                    this.Region = new Region(pathSurface);
                    //Draw surface border for HD result
                    pevent.Graphics.DrawPath(penSurface, pathSurface);
```

```
                    //Button border
                    if (borderSize >= 1)
                        //Draw control border
                        pevent.Graphics.DrawPath(penBorder, pathBorder);
                }
            }
            else //Normal button
            {
                pevent.Graphics.SmoothingMode = SmoothingMode.None;
                //Button surface
                this.Region = new Region(rectSurface);
                //Button border
                if (borderSize >= 1)
                {
                    using (Pen penBorder = new Pen(borderColor,
borderSize))
                    {
                        penBorder.Alignment = PenAlignment.Inset;
                        pevent.Graphics.DrawRectangle(penBorder, 0, 0,
this.Width - 1, this.Height - 1);
                    }
                }
            }
        }

        protected override void OnHandleCreated(EventArgs e)
        {
            base.OnHandleCreated(e);
            this.Parent.BackColorChanged += new
EventHandler(Container_BackColorChanged);
        }

        private void Container_BackColorChanged(object sender, EventArgs
e)
        {
            this.Invalidate();
        }

    }
}
```

CheckComboBox

```
using System.Windows.Forms.VisualStyles;

namespace AppLayer.SpecialComponents
{

    /// <summary>
    /// as ComboBox
    /// Create functions to DrawItem and SelectedIndexChanged events
    /// Creates the combo box drop-down
    /// The contents of the dropdown are rendered using the
    /// CheckBoxRenderer class.
    /// The information of the combo box  is updated according to the
CheckComboBox_DrawItem() in our class
    /// </summary>
    public partial class CheckComboBox : ComboBox
    {

        public CheckComboBox()
        {
            this.DrawMode = DrawMode.OwnerDrawFixed;
            this.DrawItem += new
DrawItemEventHandler(CheckComboBox_DrawItem);
            this.SelectedIndexChanged += new
EventHandler(CheckComboBox_SelectedIndexChanged);
        }

        void CheckComboBox_SelectedIndexChanged(object sender, EventArgs
e)
        {
            CheckComboBoxItem item = (CheckComboBoxItem)SelectedItem;
            item.CheckState = !item.CheckState;
            if (CheckStateChanged != null)
                CheckStateChanged(item, e);
        }

        //Will fire when the list updates its content
        void CheckComboBox_DrawItem(object sender, DrawItemEventArgs e)
        {
            // make sure the index is valid (sanity check)
            if (e.Index == -1)
            {
                return;
            }

            // test the item to see if its a CheckComboBoxItem
            if (!(Items[e.Index] is CheckComboBoxItem))
            {
                // it's not, so just render it as a default string
                e.Graphics.DrawString(
                    Items[e.Index].ToString(),
                    this.Font,
                    Brushes.Black,
                    new Point(e.Bounds.X, e.Bounds.Y));
                return;
            }

            // get the CheckComboBoxItem from the collection
            CheckComboBoxItem box = (CheckComboBoxItem)Items[e.Index];
```

```
            // render it
            CheckBoxRenderer.RenderMatchingApplicationState = true;
            CheckBoxRenderer.DrawCheckBox(
                e.Graphics,
                new Point(e.Bounds.X, e.Bounds.Y),
                e.Bounds,
                box.Text,
                this.Font,
                (e.State & DrawItemState.Focus) == 0,
                box.CheckState ? CheckBoxState.CheckedNormal :
CheckBoxState.UncheckedNormal);
        }

        /// will run when we change the check box item in the drop-down
list
        public event EventHandler CheckStateChanged;

    }
}


using System.ComponentModel;

namespace AppLayer.SpecialComponents
{
    /// <summary>
    /// from list items to combo box
    /// </summary>
    public class CheckComboBoxItem
    {

        public CheckComboBoxItem(string text, bool initialCheckState)
        {
            _checkState = initialCheckState;
            _text = text;
        }

        #region Get and Set to Properties

        //Properties - CheckState

        [Category("CheckComboBoxItem Get_Set_Fun")]
        private bool _checkState = false;
        public bool CheckState
        {
            get { return _checkState; }
            set { _checkState = value; }
        }

        //Properties - Text

        [Category("CheckComboBoxItem Get_Set_Fun")]
        private string _text = "";
        public string Text
        {
            get { return _text; }
            set { _text = value; }
        }

        //Properties - Tag

        [Category("CheckComboBoxItem Get_Set_Fun")]
```

```
        private object _tag = null;
        public object Tag
        {
            get { return _tag; }
            set { _tag = value; }
        }

        // Happens after selecting CheckComboBoxItem from the list items
        public override string ToString()
        {
            //return Text;
            return "Select Search Options";
        }

        #endregion

    }

}
```

DB

```
public class UserFunc
    {
        private static UserLogic userLogic = new UserLogic();

        public static void deleteSelectedUser(string id)
        {
            MessageBox.Show(userLogic.deleteSelectedUser(id));
        }
}
```

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

using System.Data;
using BusinessLogicLayer.StoredProceduresLogic;

namespace AppLayer.SpecialComponents
{
    public static class ExistingCategoriesFun
    {
        private static ExistingCategorylogic existingCategorylogic = new
ExistingCategorylogic();
        public static void createCategories(List<string> categories,
ComboBox category)
        {
            object resFun = existingCategorylogic.getExistingCategories();
            if (resFun.GetType() != typeof(DataTable))
            {
                MessageBox.Show(resFun.ToString());
            }
            else
            {
                DataTable dt = (DataTable)resFun;
```

```
                foreach (DataRow row in dt.Rows)
                {
                    categories.Add((string)row["Category"]);

                }
            }
            category.DataSource = categories;

        }

        public static void category_SelectedIndexChanged(List<string>
secondaryCategorySelect, ComboBox secondaryCategory, string choose)
        {

            secondaryCategory.DataSource = null;
            secondaryCategorySelect.Clear();
            object resFun =
existingCategorylogic.ShowFromExistingCategories_SubcategoryFromCategory(c
hoose);
            if (resFun.GetType() != typeof(DataTable))
            {
                MessageBox.Show(resFun.ToString());
            }
            else
            {
                secondaryCategorySelect.Add("No secondary category");
                DataTable dt = (DataTable)resFun;
                foreach (DataRow row in dt.Rows)
                {

secondaryCategorySelect.Add((string)row["secondaryCategory"]);
                }

            }

            secondaryCategory.DataSource = secondaryCategorySelect;
        }

        public static void
deleteSelectedExistingCategory(DataAccessLayer.Entities.ExistingCategory
existingCategory)
        {

MessageBox.Show(existingCategorylogic.deleteSelectedExistingCategory(exist
ingCategory));
        }
    }
}
```

Display

```
      public static void playSound(string urlSound)
        {
            SoundPlayer simpleSound = new SoundPlayer(urlSound);
            simpleSound.Stop();
            simpleSound.PlayLooping();
        }


        private static void resizeControl(Rectangle r, Control c,
Rectangle originalFormSize, object thisObj)
        {
            float xRatio;
            float yRatio;
            if(thisObj == null)
            {
                return;
            }
            else if (thisObj.GetType().BaseType.Name == "Form")
            {
                Form thisForm = (Form)thisObj;
                xRatio  = (float)(thisForm.Width) /
(float)(originalFormSize.Width);
                yRatio = (float)(thisForm.Height) /
(float)(originalFormSize.Height);
            }
            else if (thisObj.GetType().BaseType.Name == "UserControl")
            {
                UserControl thisUC = (UserControl)thisObj;
                xRatio = (float)(thisUC.Width) /
(float)(originalFormSize.Width);
                yRatio = (float)(thisUC.Height) /
(float)(originalFormSize.Height);
            }
            else
            {
                return;
            }


            int newX = (int)(r.Location.X * xRatio);
            int newY = (int)(r.Location.Y * yRatio);

            int newWidth = (int)(r.Width * xRatio);
            int newHeight = (int)(r.Height * yRatio);

            c.Location = new Point(newX, newY);
            c.Size = new Size(newWidth, newHeight);
        }

        public  static void Form_Resize(Control[] controls , Rectangle []
controlerOriginalRectangle,Rectangle originalFormSize,object thisObj)
        {
            if(controls != null)
            {
                // loop over controls and updates values
                foreach (var (control, index) in controls.Select((value,
i) => (value, i)))
                {
```

```
                    resizeControl(controlerOriginalRectangle[index],
control, originalFormSize, thisObj);
                }
            }


        }


        public static void addImgCursor(string url, Size size, Control
control)
        {
            Bitmap bitmap = new Bitmap(new Bitmap(url), size);
            control.Cursor = new Cursor(bitmap.GetHicon());
        }

        public static void Form_LoadCreateRectangles(ref Rectangle
originalFormSize, ref Control[] controls, ref Rectangle[]
controlerOriginalRectangle, object thisObj)
        {


            if (thisObj.GetType().BaseType.Name == "Form")
            {
                Form  thisForm = (Form)thisObj;
                originalFormSize = new Rectangle(thisForm.Location.X,
thisForm.Location.Y, thisForm.Size.Width, thisForm.Size.Height);

                controlerOriginalRectangle = new
Rectangle[thisForm.Controls.Count];
                controls = new Control[thisForm.Controls.Count];
                // copy all collection to array from 0
                thisForm.Controls.CopyTo(controls, 0);
            }

            else if(thisObj.GetType().BaseType.Name == "UserControl")
            {
                UserControl thisForm = (UserControl)thisObj;
                originalFormSize = new Rectangle(thisForm.Location.X,
thisForm.Location.Y, thisForm.Size.Width, thisForm.Size.Height);

                controlerOriginalRectangle = new
Rectangle[thisForm.Controls.Count];
                controls = new Control[thisForm.Controls.Count];
                // copy all collection to array from 0
                thisForm.Controls.CopyTo(controls, 0);

            }

            else
            {
                return ;
            }


            //// Loop over tuples with the item and its index
            foreach (var (control, index) in controls.Select((value, i) =>
(value, i)))
            {
                controlerOriginalRectangle[index] = new
Rectangle(control.Location.X, control.Location.Y, control.Width,
control.Height);
            }
```

```
        }
```

```
   public static void cbxDesign_DrawItem(ref object sender, ref
DrawItemEventArgs e)
        {
            // By using Sender, one method could handle multiple
ComboBoxes
            ComboBox cbx = sender as ComboBox;
            if (cbx != null)
            {
                // Always draw the background
                e.DrawBackground();

                // Drawing one of the items?
                if (e.Index >= 0)
                {
                    // Set the string alignment.  Choices are Center, Near
and Far
                    StringFormat sf = new StringFormat();
                    sf.LineAlignment = StringAlignment.Center;
                    sf.Alignment = StringAlignment.Center;

                    // Set the Brush to ComboBox ForeColor to maintain any
ComboBox color settings
                    // Assumes Brush is solid
                    Brush brush = new SolidBrush(cbx.ForeColor);

                    // If drawing highlighted selection, change brush
                    if ((e.State & DrawItemState.Selected) ==
DrawItemState.Selected)
                        brush = SystemBrushes.HighlightText;

                    // Draw the string
                    e.Graphics.DrawString(cbx.Items[e.Index].ToString(),
cbx.Font, brush, e.Bounds, sf);
                }
            }
        }
```

UCS

```
        public static void hideAndShowUC(UserControl[] ucs, string
kindAction,Form form)
        {
            if(ucs.Length != 5)
            {
                MessageBox.Show("The array must contain 4 UC (add, delete,
showSearch, showAll, update)");
                return;
            }
            foreach (UserControl uc in ucs)
            {
                uc.Size = new Size(uc.Parent.Width - 50, uc.Height);
                uc.Location = new Point((form.Width - uc.Width) / 2 - 10,
(form.Height - uc.Height) / 2 - 30);
                uc.Hide();
            }

            switch (kindAction)
            {
                case "Add":
                    ucs[0].Show();
                    break;

                case "Delete":
                    ucs[1].Show();
                    break;

                case "Show All":
                    ucs[2].Show();
                    break;

                case "Show Search":
                    ucs[3].Show();
                    break;

                case "Update":
                    ucs[4].Show();
                    break;
            }
                                                                        }


public static void createCheckComboBoxList(string[]
fieldsName,CheckComboBox checkComboBox1,Control[] controls, Control
panelShow)
        {
            CheckComboBoxItem[] checkComboBoxItems = new
CheckComboBoxItem[fieldsName.Length];
            foreach (var (field, index) in fieldsName.Select((field,
index) => (field, index)))
            {
                checkComboBoxItems[index] = new CheckComboBoxItem(field,
false);
            }
            checkComboBox1.Items.AddRange(checkComboBoxItems);

            //// wire up the check state changed event
```

```
            checkComboBox1.CheckStateChanged += new
System.EventHandler((sender, e) =>
checkComboBox1_CheckStateChanged(sender,e,controls,checkComboBox1.Items.Ca
st<CheckComboBoxItem>().ToArray(),panelShow));

        }

        private static void showAll(CheckComboBoxItem[] checkComboBox,
Boolean showAll)
        {
            foreach (CheckComboBoxItem item in checkComboBox)
            {
                if (item.Text.ToLower() != "all")
                {
                    switch (showAll)
                    {

                        case true:
                            {
                                item.CheckState = true;
                            }

                            break;
                        case false:
                            item.CheckState = false;
                            break;
                    }
                }

            }
        }

        private static void checkComboBox1_CheckStateChanged(object
sender, EventArgs e,Control[] controls, CheckComboBoxItem[]
checkComboBoxItems, Control panelShow)
        {
            if (sender is CheckComboBoxItem)
            {
                CheckComboBoxItem item = (CheckComboBoxItem)sender;
                MessageBox.Show(item.Text);
                MessageBox.Show(item.CheckState.ToString());
                if(item.Text.ToLower() == "all")
                {
                    showAll(checkComboBoxItems,item.CheckState);
                }
                foreach(Control control in controls)
                {
                    if (item.Text.ToLower() == "all")
                    {
                        switch (item.CheckState)
                        {
                            case true:
                                control.Show();
                                control.Tag = "show";
                                break;
                            case false:
                                control.Hide();
                                control.Tag = "hide";
                                break;
                        }
                    }
                    // name control must start with panel
                    // name CheckComboBoxItem maybe have space
```

```
                    else if (control.Name.ToLower().Split("panel")[1] ==
item.Text.Replace(" ", "").ToLower())
                    {
                        if (item.CheckState)
                        {
                            control.Show();
                            control.Tag = "show";
                        }
                        if (!item.CheckState)
                        {
                            control.Hide();
                            control.Tag = "hide";
                        }

                        foreach (CheckComboBoxItem removeMark in
checkComboBoxItems)
                        {
                            if (removeMark.Text.ToLower() == "all" &&
removeMark.CheckState)
                            {
                                removeMark.CheckState = false;
                            }
                        }
                    }
                }
                //foreach
                //switch (item.Text)
                //{
                //    case "One":
                //        //checkBox1.Checked = item.CheckState;
                //        break;
                //    case "Two":
                //        //checkBox2.Checked = item.CheckState;
                //        break;
                //    case "Three":
                //        //checkBox3.Checked = item.CheckState;
                //        break;
                //}

                int countControlShow = 0;
                foreach(Control control in controls)
                {
                    if(control.Name.ToLower() != "panelaction" &&
control.Tag.ToString() == "show")
                    {
                        countControlShow++;
                    }
                }
                if(countControlShow > 0)
                {
                    panelShow.Show();
                }
                else
                {
                    panelShow.Hide();
                }
            }
        }


        public static void checkAndSetError(Control insertErrNext, string?
checkRes,ErrorProvider err)
        {
```

```
            if (checkRes != null)
            {
                err.SetError(insertErrNext, checkRes);
            }
            else
            {
                err.SetError(insertErrNext, String.Empty);
            }
                                                                        }
```

DGet Data

```
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 System.Data.SqlClient;
using DataAccessLayer.Entities;

namespace AppLayer.Components.Single
{
    public partial class getData : Form
    {
        string conStrin = @"Data Source=.;Initial
Catalog=Library;Integrated Security=True";

        SqlDataAdapter sda;
        SqlCommandBuilder scb;
        DataTable dt;

        public getData()
        {
            InitializeComponent();
            sda = new SqlDataAdapter();

            using (SqlConnection sqlConnection = new
SqlConnection(conStrin))
            {
                SqlCommand cmd = new SqlCommand("getUsers",
sqlConnection);
                try
                {

                    if (sqlConnection.State != ConnectionState.Open)
                        sqlConnection.Open();
                    // call to procedure that get books
                    //cmd.Parameters.Add(new SqlParameter("@newDay_Date",
dayAdd.date));
                    cmd.CommandType = CommandType.StoredProcedure;
```

```
                    cmd.Parameters.Add("@ERROR", SqlDbType.NVarChar, 500);
                    cmd.Parameters["@ERROR"].Direction =
ParameterDirection.Output;
                    SqlDataReader dr = cmd.ExecuteReader();
                    //cmd.ExecuteNonQuery();
                    //sqlConnection.Close();

                    // Check if was problem with the command
                    if (cmd.Parameters["@ERROR"].Value != null &&
cmd.Parameters["@ERROR"].Value.ToString().Length > 0)
                    {
                        string message =
(string)cmd.Parameters["@ERROR"].Value;
                        MessageBox.Show(message);
                    }

                    else if (dr.HasRows)
                    {
                        DataTable dataTable = new DataTable();
                        dataTable.Load(dr);
                        dt = dataTable;
                        sqlConnection.Close();

                        DataAccessLayer.Entities.User user = new
DataAccessLayer.Entities.User();
                        foreach (DataRow row in dataTable.Rows)
                        {
                            user = new DataAccessLayer.Entities.User()
                            {
                                Id = row["Id"].ToString()!,
                                Email = row["Email"].ToString()!,
                                Password = row["Password"].ToString()!,
                                FirstName = row["FirstName"].ToString()!,
                                LastName = row["LastName"].ToString()!,
                                Type = (bool)row["Type"]
                            };
                            MessageBox.Show(user.FirstName.ToString());

                        }
                        dataGridView1.AutoGenerateColumns = false;
                        dataGridView1.DataSource = dataTable;
                        dataGridView2.DataSource = dataTable;
                    }

                }
                catch (SqlException e)
                {
                    sqlConnection.Close();
                    MessageBox.Show(e.Message);
                }


            }
        }

        private void getData_Load(object sender, EventArgs e)
        {

        }

        private void dataGridView1_CellMouseDoubleClick(object sender,
DataGridViewCellMouseEventArgs e)
        {
```

```
MessageBox.Show(dataGridView1.Rows[e.RowIndex].Cells[0].Value.ToString());

MessageBox.Show(dataGridView1.Rows[e.RowIndex].Cells.Count.ToString());
        }
    }
}
```

Action Btns

```
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 AppLayer.SpecialComponents;

namespace AppLayer.Components.Single
{
    //point to function
    public delegate void sqlAction();

    public partial class btnDelete : UserControl
    {
        //public sqlAction deleteItem;
        public btnDelete()
        {
            InitializeComponent();
            try
            {
                HelpFunc.addImgCursor("Delete.png", new Size(50, 50),
pictureBox1);
            }
            catch
            {
                return;
            }

        }

        public void addEventTopictureBox1Click(object key, string
nameTableOfItem)
        {
            pictureBox1.Click += new
EventHandler((sender,e)=>deleteItem(key, nameTableOfItem));
        }

        public void deleteItem(object key, string nameTableOfItem)
        {
            if (MessageBox.Show("Are you sure you want to delete this
information?", "ConfirmationSonicccccc", MessageBoxButtons.YesNo,
MessageBoxIcon.Question, MessageBoxDefaultButton.Button1) ==
System.Windows.Forms.DialogResult.Yes)
            {
```

```
                switch (nameTableOfItem)
                {
                    case "Book":
                        if (key != null)
                        {
                            BookFunc.deleteSelectedBook(key as string);
                        }
                        break;

                    case "Borrow":
                        if (key != null)
                        {
                            BorrowFunc.deleteSelectedBorrow(key as
string);
                        }
                        break;

                    case "ExistingCategories":
                        if (key != null)
                        {

ExistingCategoriesFun.deleteSelectedExistingCategory(key as
DataAccessLayer.Entities.ExistingCategory);
                        }
                        break;

                    case "User":
                        if (key != null)
                        {
                            UserFunc.deleteSelectedUser(key as string);
                        }
                        break;

                }
            }

            else
            {
                MessageBox.Show("Yaaay we stay ! ");
            }

        }

    }
}
```

```
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 AppLayer.Components.Single.Show;
```

```
using AppLayer.SpecialComponents;

namespace AppLayer.Components.Single
{
    public partial class btnShow : UserControl
    {
        public btnShow()
        {
            InitializeComponent();
            try
            {
                HelpFunc.addImgCursor("Move.png", new Size(50, 50),
pictureBox1);
            }
            catch
            {
                return;
            }
        }

        public void addEventTopictureBox1Click(object objShow,string
nameTableOfItem)
        {
            pictureBox1.Click += new EventHandler((sender, e) =>
seeItem(objShow,nameTableOfItem));
        }

        public void seeItem(object objShow, string nameTableOfItem)
        {
            switch (nameTableOfItem)
            {
                case "Book":
                    if(objShow != null)
                    {
                        showFormBook showBook = new showFormBook(objShow
as DataAccessLayer.Entities.Book);
                        openPopForm(showBook);
                    }
                    else
                    {
                        MessageBox.Show("no null !");
                    }
                    break;

                case "Borrow":
                    if (objShow != null)
                    {
                        showFormBorrow showBorrow = new
showFormBorrow(objShow as DataAccessLayer.Entities.Borrow);
                        openPopForm(showBorrow);
                    }
                    else
                    {
                        MessageBox.Show("no null !");
                    }

                    break;

                case "ExistingCategories":
                    if (objShow != null)
                    {
```

```
                        showFormExistingCategory showExistingCategory =
new showFormExistingCategory(objShow as
DataAccessLayer.Entities.ExistingCategory);
                        openPopForm(showExistingCategory);
                    }
                    else
                    {
                        MessageBox.Show("no null !");
                    }
                    break;

                case "User":
                    if (objShow != null)
                    {
                        showFormUser showUser = new showFormUser(objShow
as DataAccessLayer.Entities.User);
                        openPopForm(showUser);
                    }
                    else
                    {
                        MessageBox.Show("no null !");
                    }

                    break;

            }
        }

        private void openPopForm(Form popForm)
        {
            popForm.Activate();
            popForm.Show();
            //popForm.Location = new Point((this.Width - popForm.Width) /
2, (this.Height - popForm.Height) / 2);
            // button in table in user in form
            Form mainForm = this.Parent.Parent.Parent as Form;
            // we want center so we divide width by 2
            int XplusWidth = mainForm!.Location.X + mainForm!.Width / 2;
            int resXWithPopWidth = XplusWidth - popForm.Width / 2;

            // we want center so we divide width by 2
            int YplusHeight = mainForm.Location.Y + mainForm.Height / 2;
            int resYWithPopHeight = YplusHeight - popForm.Height / 2;

            //popForm.Location = new
Point((this.Parent.Parent.Parent.Width - popForm.Width) +
popForm.Location.X, resHeightWithLocation);
            //popForm.StartPosition = mainForm.CenterScreen;
            popForm.Location = new
Point(resXWithPopWidth,resYWithPopHeight);
        }



    }
}




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 AppLayer.SpecialComponents;
using AppLayer.Components.comBook;
using AppLayer.Components.comBorrow;
using AppLayer.Components.comExistingCategories;
using AppLayer.Components.comUser ;

namespace AppLayer.Components.Single.btnAction
{
    public partial class btnUpDate : UserControl
    {
        public btnUpDate()
        {
            InitializeComponent();
            try
            {
                HelpFunc.addImgCursor("Click.png", new Size(50, 50),
pictureBox1);
            }
            catch
            {
                return;
            }
        }

        public void addEventTopictureBox1Click(object objUpdate, string
nameTableOfItem)
        {
            pictureBox1.Click += new EventHandler((sender, e) =>
updateItem(objUpdate, nameTableOfItem));
        }

        public void updateItem(object objUpdate, string nameTableOfItem)
        {
            switch (nameTableOfItem)
            {
                case "Book":
                    if (objUpdate != null)
                    {
                        //UpdateBook upBook = new UpdateBook(objShow as
DataAccessLayer.Entities.Book);
                        updateFromTable up1 = new
updateFromTable(objUpdate, "Book");
                        up1.Show();

                        //showUpUc(upBook);
                    }
                    else
                    {
                        MessageBox.Show("no null !");
                    }
                    break;

                //case "Borrow":
                //    if (objShow != null)
                //    {
```

```
                //        showBorrow showBorrow = new showBorrow(objShow
as DataAccessLayer.Entities.Borrow);
                //        openPopForm(showBorrow);
                //    }
                //    else
                //    {
                //        MessageBox.Show("no null !");
                //    }

                //    break;

                //case "ExistingCategories":
                //    if (objShow != null)
                //    {
                //        showExistingCategory showExistingCategory = new
showExistingCategory(objShow as
DataAccessLayer.Entities.ExistingCategory);
                //        openPopForm(showExistingCategory);
                //    }
                //    else
                //    {
                //        MessageBox.Show("no null !");
                //    }
                //    break;

                //case "User":
                //    if (objShow != null)
                //    {
                //        showUser showUser = new showUser(objShow as
DataAccessLayer.Entities.User);
                //        openPopForm(showUser);
                //    }
                //    else
                //    {
                //        MessageBox.Show("no null !");
                //    }

                //    break;

            }
        }

        //public void showUpUc(UserControl uc)
        //{
        //    uc.Show();
        //    this.Parent.Parent.Parent.Controls.Add(uc);
        //}
    }
}
```

Com

```
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 AppLayer.SpecialComponents;
using BusinessLogicLayer.StoredProceduresLogic;
using AppLayer.SpecialComponents;
using DataAccessLayer.Entities;

namespace AppLayer.Components.comBook
{
    public partial class AreaBook : Form
    {
        string kindActionNow;
        Book book;
        public string KindActionNow
        {
            get { return kindActionNow; }
            set { kindActionNow = value; }
        }
        public Book Book
        {
            get { return book; }
            set { book = value; }
        }
        public AreaBook(string kindAction,Book sentBook)
        {
            InitializeComponent();

            Book book = new Book()
            {
                Code = "a",
                FirstName_Author = "b",
                LastName_Author = "c",
                Title = "d",
                PublicationDate = DateTime.Now,
                Category = "A",
                SecondaryCategory = "B"
            };

            if(sentBook == null)
            {
                Book = book;
            }

            kindActionNow = kindAction;

            if (Book != null)
            {
                switch (KindActionNow)
                {
                    case "Add":
                        addBook2.Book = book;
                        break;
                }
            }


        }

        private void pictureBox1_Click(object sender, EventArgs e)
        {
            //this.Close();

        }
```

```
        private void updateBook1_Load(object sender, EventArgs e)
        {

        }

        private void addBook1_Load(object sender, EventArgs e)
        {

        }

        private void AreaBook_Load(object sender, EventArgs e)
        {
            if (Book != null)
            {
                switch (KindActionNow)
                {
                    case "Add":
                        addBook2.Book = book;
                        break;
                }
            }
            UserControl[] UCsBook = { addBook2, deleteBook1,
showAllBooks1, showSearchBook1, updateBook1 };
            HelpFunc.hideAndShowUC(UCsBook, KindActionNow,
this.MdiParent);


        }
    }
}




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.StoredProceduresLogic;
using AppLayer.SpecialComponents;
using DataAccessLayer.Entities;



namespace AppLayer.Components.comBook
{
    public partial class AddBook : UserControl
    {
        List<string> categories;
        List<string> secondaryCategorySelect;
        Book book;
        public Book Book
        {
            get { return book; }
            set { book = value; }
        }
```

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

        private void AddBook_Load(object sender, EventArgs e)
        {
            publicationDate.MaxDate = DateTime.Now;
            categories = new List<string>();
            secondaryCategorySelect = new List<string>();

            ExistingCategoriesFun.createCategories(categories, category);

            if (Book != null)
            {
                code.Text = book.Code;
                publicationDate.Value = book.PublicationDate;
                title.Text = book.Title;
                firstNameAuthor.Text = book.FirstName_Author;
                lastNameAuthor.Text = book.LastName_Author;
                category.Text = book.Category;
                secondaryCategory.Text = book.SecondaryCategory;
            }


        }

        private void category_SelectedIndexChanged(object sender,
EventArgs e)
        {

ExistingCategoriesFun.category_SelectedIndexChanged(secondaryCategorySelec
t, secondaryCategory, category.Text);

        }
    }
}
```

```
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 AppLayer.SpecialComponents;

namespace AppLayer.Components.comBook
{
    public partial class ShowSearchBook : UserControl
```

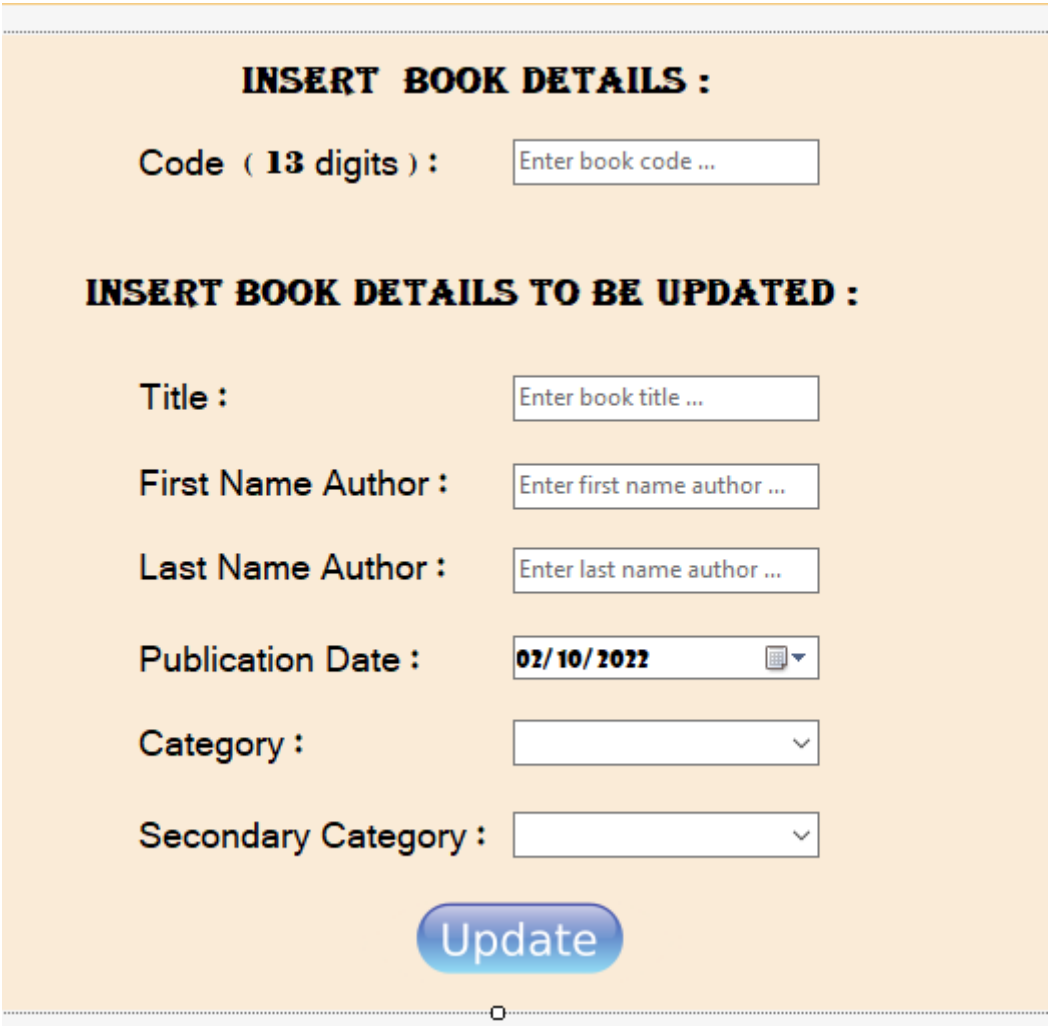
```
    {
        public ShowSearchBook()
        {
            InitializeComponent();

            // add three check box items to the combo box and set their
checked states to true
            string[] fieldsName = { "Code", "Title",
                                    "First Name Author", "Last Name
Author",
                                    "Publication Date",
                                    "Category", "Secondary
Category","All"};
            Control[] fieldsControls = { panelCode, panelTitle,
panelFirstNameAuthor, panelLastNameAuthor, panelPublicationDate,
panelSecondaryCategory, panelCategory };
            foreach (Control field in fieldsControls)
            {
                field.Hide();
                field.Tag = "hide";
            }
            panel1.Hide();

            try
            {
                HelpFunc.createCheckComboBoxList(fieldsName,
checkComboBox1, fieldsControls, panel1);

                Bitmap bitmap = new Bitmap(new Bitmap("Search.png"), new
Size(30, 30));
                specialButton1.Cursor = new Cursor(bitmap.GetHicon());
            }
            catch
            {
                return;
            }
        }

        private void secondaryCategory_SelectedIndexChanged(object sender,
EventArgs e)
        {

        }

        private void ShowBook_Load(object sender, EventArgs e)
        {

        }

        private void panelTitle_Paint(object sender, PaintEventArgs e)
        {

        }

        private void panelLastNameAuthor_Paint(object sender,
PaintEventArgs e)
        {

        }

        private void label9_Click(object sender, EventArgs e)
        {
```

```
        }

        private void panel12_Paint(object sender, PaintEventArgs e)
        {

        }

        private void panelFirstNameAuthor_Paint(object sender,
PaintEventArgs e)
        {

        }

        // this message handler gets called when the user checks/unchecks
an item the combo box
        //private void checkComboBox1_CheckStateChanged(object sender,
EventArgs e)
        //{
        //    if (sender is CheckComboBoxItem)
        //    {
        //        CheckComboBoxItem item = (CheckComboBoxItem)sender;
        //        MessageBox.Show(item.Text);
        //        MessageBox.Show(item.CheckState.ToString());
        //        switch (item.Text)
        //        {
        //            case "One":
        //                //checkBox1.Checked = item.CheckState;
        //                break;
        //            case "Two":
        //                //checkBox2.Checked = item.CheckState;
        //                break;
        //            case "Three":
        //                //checkBox3.Checked = item.CheckState;
        //                break;
        //        }
        //    }
        //}
    }
}
```

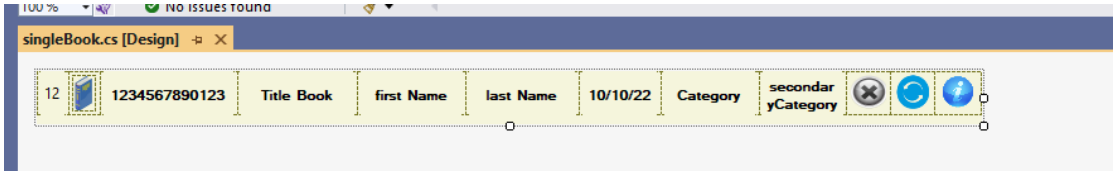

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;


using AppLayer.SpecialComponents;

namespace AppLayer.Components.comBook
{
    public partial class UpdateBook : UserControl
    {

        DataAccessLayer.Entities.Book book;
        public DataAccessLayer.Entities.Book Book
        {
            get { return book; }
            set { book = value; }
        }

        List<string> categories;
```

```
        List<string> secondaryCategorySelect;

        public UpdateBook()
        {
            InitializeComponent();
            publicationDate.MaxDate = DateTime.Now;
        }

        public UpdateBook(DataAccessLayer.Entities.Book upBook)
        {
            InitializeComponent();
            publicationDate.MaxDate = DateTime.Now;
            Book = upBook;
            code.Text = upBook.Code;
            title.Text = upBook.Title;
            firstNameAuthor.Text = upBook.FirstName_Author;
            lastNameAuthor.Text = upBook.LastName_Author;
            publicationDate.Value = upBook.PublicationDate;
            category.Text = upBook.Category;
            secondaryCategory.Text = upBook.SecondaryCategory;

        }


        public void setBook(DataAccessLayer.Entities.Book upBook)
        {
            book = upBook;
        }

        private void UpdateBook_Load(object sender, EventArgs e)
         {

            categories = new List<string>();
            secondaryCategorySelect = new List<string>();

            ExistingCategoriesFun.createCategories(categories, category);

            if (book != null)
            {
                code.Text = book.Code;
                title.Text = book.Title;
                firstNameAuthor.Text = book.FirstName_Author;
                lastNameAuthor.Text = book.LastName_Author;
                publicationDate.MaxDate = book.PublicationDate;
                category.Text = book.Category;
                secondaryCategory.Text = book.SecondaryCategory;
            }

            else
            {
                publicationDate.MaxDate = DateTime.Now;
            }



        }

        private void category_SelectedIndexChanged_1(object sender,
EventArgs e)
        {

ExistingCategoriesFun.category_SelectedIndexChanged(secondaryCategorySelec
t, secondaryCategory, category.Text);
```

```
        }
    }
}
```



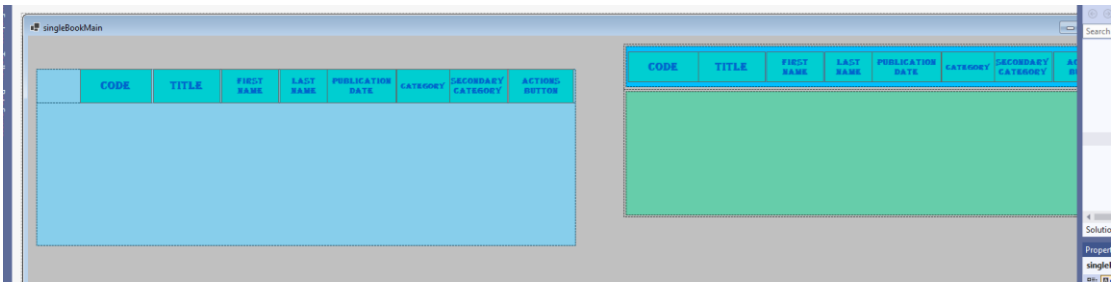
Single




```
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.Entities;

namespace AppLayer.Components.Single
{

    public partial class singleBook : UserControl
    {
        #region Set Values to UC
        private DataAccessLayer.Entities.Book book;
        public DataAccessLayer.Entities.Book Book
        {
            get { return book; }
            set {
                book = value;
                if(book != null)
                {
                    code.Text = book.Code;
                    Title.Text = book.Title;
                    firstName_Author.Text = book.FirstName_Author;
                    lastName_Author.Text = book.LastName_Author;
                    publicationDate.Text =
book.PublicationDate.ToString("MM/dd/yy");
                    category.Text = book.Category;
                    secondaryCategory.Text = book.SecondaryCategory;
                    num.Text = CountLine + "";
                }

            }
        }
        #endregion

        static int countline = 0;
        public static int CountLine
        {
            get { return countline; }
            set { countline = value; }
        }

        public singleBook()
        {
            InitializeComponent();
        }
        public singleBook(DataAccessLayer.Entities.Book showBook)
        {
            InitializeComponent();
            countline++;
            Book = showBook;
            btnDelete1.addEventTopictureBox1Click(showBook.Code,"Book");
            btnShow1.addEventTopictureBox1Click(showBook, "Book");
            btnUpDate1.addEventTopictureBox1Click(showBook, "Book");
        }

        private void category_Click(object sender, EventArgs e)
        {
            MessageBox.Show("aaaa");
        }


        int hover;
        Color temp;
```

```
        private void tableLayoutPanel1_MouseEnter(object sender, EventArgs
e)
        {
            if (hover == 0)
            {
                temp = BackColor;
                BackColor = Color.AliceBlue;
                hover++;
            }
        }

        private void singleBook_MouseLeave(object sender, EventArgs e)
        {
            if (hover == 1)
            {
                hover--;
                BackColor = temp;
            }
        }
    }
}
```




```
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;

namespace AppLayer.Components.Single
{
    public partial class singleBookMain : Form
    {
        public singleBookMain()
        {
            InitializeComponent();

            DataAccessLayer.Entities.Book book = new
DataAccessLayer.Entities.Book()
            {
                Code = "1",
                Category = "2",
                FirstName_Author = "3",
                LastName_Author = "4",
```

```
                PublicationDate = DateTime.Now,
                SecondaryCategory = "5",
                Title = "6"
            };
            //AppLayer.Components.Single.singleBook singleBook  = new
AppLayer.Components.Single.singleBook(book);
            //this.Controls.Add(singleBook);
            //singleBook.Show();
            //singleBook.Location = new System.Drawing.Point(10, 250);
            ////singleBook.TabIndex = 7;

            //AppLayer.Components.Single.singleBook.CountLine = 0  ;
            //AppLayer.Components.Single.singleBook singleBook2 = new
AppLayer.Components.Single.singleBook(book);
            //this.Controls.Add(singleBook2);
            //singleBook2.Show();
            //singleBook2.Location = new System.Drawing.Point(10, 400);

            //singleBook.Size = new System.Drawing.Size(758, 110);

        }

        private void singleBookMain_Load(object sender, EventArgs e)
        {
            BusinessLogicLayer.StoredProceduresLogic.BookLogic bookLogic =
new BusinessLogicLayer.StoredProceduresLogic.BookLogic();
            object resFun = bookLogic.getBooks();
            if (resFun.GetType() != typeof(DataTable))
            {
                MessageBox.Show(resFun.ToString());
            }
            else
            {
                DataTable dt = (DataTable)resFun;
                DataAccessLayer.Entities.Book book;
                //dt = dt.AsEnumerable().Reverse().CopyToDataTable();
                foreach (DataRow row in dt.Rows)
                {
                    book = new DataAccessLayer.Entities.Book()
                    {
                        Code = row["Code"].ToString()!,
                        Title = row["Title"].ToString()!,
                        FirstName_Author =
row["FirstName_Author"].ToString()!,
                        LastName_Author =
row["LastName_Author"].ToString()!,
                        PublicationDate =
DateTime.Parse(row["PublicationDate"].ToString()!),
                        Category = row["Category"].ToString()!,
                        SecondaryCategory =
row["SecondaryCategory"].ToString()!
                    };

                    singleBook single = new singleBook(book);
                    single.Dock = DockStyle.Top;

                    single.BackColor = getTheme();
                    panelData.Controls.Add(single);
                }
                panelData.AutoScrollPosition = new Point(0, 0);
                //Main main = new Main(user);
                //main.Location = new Point((this.MdiParent.Width) / 2,
(this.MdiParent.Height) / 2);
```

```
                //main.Activate();
                //main.Show();
                //this.MdiParent.Hide();
            }
        }

        int counter = 0;
        public Color getTheme()
        {
            if(counter %2 == 0)
            {
                counter++;
                return Color.Salmon;
            }
            else
            {
                counter++;
                return Color.Red;
            }
        }

        private async void LoadBooks()
        {
            await Task.Run(() =>
            {
                BusinessLogicLayer.StoredProceduresLogic.BookLogic
bookLogic = new BusinessLogicLayer.StoredProceduresLogic.BookLogic();
                object resFun = bookLogic.getBooks();
                if (resFun.GetType() != typeof(DataTable))
                {
                    MessageBox.Show(resFun.ToString());
                }
                else
                {
                    DataTable dt = (DataTable)resFun;
                    DataAccessLayer.Entities.Book book;
                    //dt = dt.AsEnumerable().Reverse().CopyToDataTable();
                    foreach (DataRow row in dt.Rows)
                    {
                        book = new DataAccessLayer.Entities.Book()
                        {
                            Code = row["Code"].ToString()!,
                            Title = row["Title"].ToString()!,
                            FirstName_Author =
row["FirstName_Author"].ToString()!,
                            LastName_Author =
row["LastName_Author"].ToString()!,
                            PublicationDate =
DateTime.Parse(row["PublicationDate"].ToString()!),
                            Category = row["Category"].ToString()!,
                            SecondaryCategory =
row["SecondaryCategory"].ToString()!
                        };

                        singleBook single = new singleBook(book);
                        single.Dock = DockStyle.Top;

                        single.BackColor = getTheme();
                        panelData.Controls.Add(single);
                    }
                    panelData.AutoScrollPosition = new Point(0, 0);
                    //Main main = new Main(user);
```

```
                    //main.Location = new Point((this.MdiParent.Width) /
2, (this.MdiParent.Height) / 2);
                    //main.Activate();
                    //main.Show();
                    //this.MdiParent.Hide();
                }
            });

        }

        public async Task<List<string>> getStrings()
        {
            List<string> strings = new List<string>();
            await Task.Run(() =>
            {
                strings.Add("ssss");

            });
            return strings;

        }

        public async void getget()
        {
            List<string> a = await getStrings();
            MessageBox.Show(a.Count+"");
        }
    }
}



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;

namespace AppLayer.Components.Single.Show
{
    public partial class showFormBook : Form
    {
        public showFormBook(DataAccessLayer.Entities.Book showBook)
        {
            InitializeComponent();
            code.Text = showBook.Code;
            firstNameAuthor.Text = showBook.FirstName_Author;
            lastNameAuthor.Text = showBook.LastName_Author;
            title.Text = showBook.Title;
            publicationDate.Text =
showBook.PublicationDate.ToString("MM/dd/yy");
            category.Text = showBook.Category;
            secondaryCategory.Text = showBook.SecondaryCategory;

        }
    }
}
```