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《数据库系统实验》实验报告

实验序号		所在学院	软件工程学院
实验名称	《图书馆管理系统》综合开发	任课教师	陈建国
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实验报告说明

　　分别展示《图书馆管理系统》应用程序开发过程中的数据库定义语句（创建数据库和数据表的 SQL 代码）、各个功能模块的界面以及业务逻辑代码。

1 数据库定义语句（使用的 MySQL）

```
--创建表格
create TABLE Controller_info(
Cid int not null PRIMARY KEY auto_increment,
Cname varchar(30),
sex int,
age int,
position varchar(20),
ctelephone varchar(12),
worktime varchar(20)
);
alter table Controller_info add Password Varchar(20) not null;
create TABLE Reader_info(
Rid int not null PRIMARY KEY auto_increment,
Rname Varchar(30),
age int,
sex int,
borrowNum int,
againstTime int,
telephone varchar(12),
islost int,
text text,
lastTime date,
Time date,
Typeid int
);
create TABLE ReaderType_info(
```

```sql
Typeid int PRIMARY KEY NOT NULL auto_increment,
Tname varchar(30),
Biggest int,
Loggest int
);
create TABLE Book_info(
ISBN varchar(20) not null,
bid int not null PRIMARY KEY auto_increment,
intime date,
statue varchar(10)
);
alter table book_info CHANGE bid bid int not null auto_increment;
alter table Book_info add column Rid int;

create TABLE BookType_info(
ISBN varchar(20) PRIMARY KEY not null,
wid int,
bname varchar(30),
price int,
kind varchar(10),
publishTime date,
edition varchar(10),
pid int
);
create TABLE Press_info(
pid int not null PRIMARY KEY auto_increment,
pname varchar(20),
controller varchar(30),
ptelephone varchar(12),
paddress varchar(30),
fax varchar(20)
);
create TABLE Writer_info(
wid int not null PRIMARY KEY auto_increment,
wname varchar(30),
wtelephone varchar(12),
waddress varchar(30),
idType varchar(20),
idNum varchar(20)
);
create TABLE BookBorrow_info(
borrowid int PRIMARY key not null auto_increment,
borrowTime date,
lastTime date,
againTime int,
Bid int,
```

```sql
Rid int,
Cid int
);
create TABLE BookBack_info(
Backid int PRIMARY key not null auto_increment,
backtime date,
ISBN varchar(20),
Bid int,
Rid int,
Cid int
);
create TABLE Fine_info(
Fineid int PRIMARY key not null auto_increment,
Money int,
FineTime date,
Bid int,
Rid int,
Cid int
);
alter table Fine_info add column Kind Varchar(10);

create TABLE Buy_info(
ISBN varchar(20),
buyNum int,
BuyTime date,
buyaddress varchar(30)
);

--外键添加
alter table reader_info add CONSTRAINT FK1 foreign key(Typeid) REFERENCES ReaderType_info(Typeid);
alter table BookType_info add CONSTRAINT FK2 foreign key(Wid) REFERENCES Writer_info(Wid);
alter table BookType_info add CONSTRAINT FK3 foreign key(Pid) REFERENCES Press_info(Pid);
alter table Book_info add CONSTRAINT FK4 foreign key(ISBN) REFERENCES BookType_info(ISBN);
alter table BookBorrow_info add CONSTRAINT FK5 foreign key(Rid) REFERENCES reader_info(Rid);
alter table BookBorrow_info add CONSTRAINT FK6 foreign key(Bid) REFERENCES Book_info(Bid);
alter table BookBorrow_info add CONSTRAINT FK7 foreign key(Cid) REFERENCES Controller_info(Cid);
alter table BookBack_info add CONSTRAINT FK9 foreign key(Rid) REFERENCES reader_info(Rid);
alter table BookBack_info add CONSTRAINT FK10 foreign key(Bid) REFERENCES Book_info(Bid);
alter table BookBack_info add CONSTRAINT FK11 foreign key(Cid) REFERENCES Controller_info(Cid);
alter table Fine_info add CONSTRAINT FK17 foreign key(Rid) REFERENCES reader_info(Rid);
alter table Fine_info add CONSTRAINT FK18 foreign key(Bid) REFERENCES Book_info(Bid);
alter table Fine_info add CONSTRAINT FK19 foreign key(Cid) REFERENCES Controller_info(Cid);
alter table Buy_info add CONSTRAINT FK21 foreign key(ISBN) REFERENCES BookType_info(ISBN);
alter table Book_info add CONSTRAINT FK8 foreign key(Rid) REFERENCES reader_info(Rid);
```
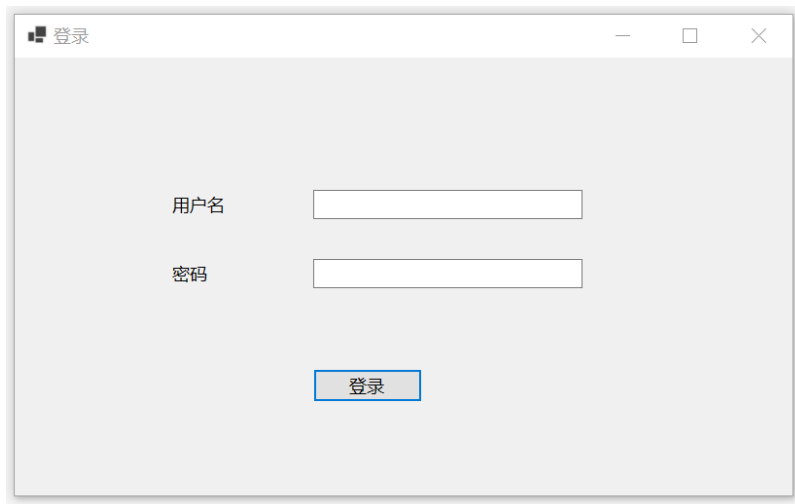
2 系统登录模块

2.1 界面

2.2 业务逻辑代码

```csharp
using System.Data;
using MySqlConnector;
namespace LibrarySystem
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {

        }
        private void button1_Click(object sender, EventArgs e)
        {//登陆界面，管理员登录
            string uname = txt_username.Text.Trim();
            string usec = txt_usersecret.Text.Trim();
            Form2.userName = uname;
            if (uname == "")//姓名不能为空
            {
                lb_ts.Text = "请输入用户名！";
                lb_ts.ForeColor = Color.Red;
                txt_username.Focus();
            }
```

```
        else if (usec == "")//密码不能为空
        {
            lb_ts.Text = "请输入密码！";
            lb_ts.ForeColor = Color.Red;
            txt_usersecret.Focus();
        }
        else
        {
            MySqlConnection conn = new MySqlConnection ("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = string.Format("select * from controller_info where Cname = '{0}' and Password =
'{1}'", uname, usec);
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);

            conn.Close();
            if(dt.Rows.Count > 0)
            {
                Form2.uid = dt.Rows[0]["Cid"].ToString();
                this.Hide();
                Form2 frm = new Form2();
                frm.Show();
            }
            else
            {
                lb_ts.Text = "对不起，用户名或密码错误！";
                lb_ts.ForeColor = Color.Red;
                txt_usersecret.Focus();
            }
        }
    }
  }
}
```

3 系统主界面

3.1 界面

3.2 业务逻辑代码

```csharp
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 LibrarySystem
{
    public partial class Form2 : Form
    {
        public static string userName="";
        public static string uid = "";
        public Form2()
        {
            InitializeComponent();
        }
        //功能选择界面，可以在此进行功能选择
        private void button1_Click(object sender, EventArgs e)
        {
            this.Close();
            Form3 frm = new Form3();
            frm.Show();
```

```csharp
        }

        private void button2_Click(object sender, EventArgs e)
        {
            this.Close();
            Form7 frm = new Form7();
            frm.Show();
        }

        private void button5_Click(object sender, EventArgs e)
        {
            this.Close();
            Form5 frm = new Form5();
            frm.Show();
        }

        private void button6_Click(object sender, EventArgs e)
        {
            this.Close();
            Form6 frm = new Form6();
            frm.Show();
        }

        private void button7_Click(object sender, EventArgs e)
        {
            this.Close();
            Form4 frm = new Form4();
            frm.Show();
        }

        private void button4_Click(object sender, EventArgs e)
        {
            this.Close();
            Form8 frm = new Form8();
            frm.Show();
        }

        private void button3_Click(object sender, EventArgs e)
        {
            this.Close();
            Form9 frm = new Form9();
            frm.Show();
        }

        private void button8_Click(object sender, EventArgs e)
        {
```

```
            this.Close();
            Form10 frm = new Form10();
            frm.Show();
        }


        private void button9_Click(object sender, EventArgs e)
        {
            this.Close();
            Form11 frm = new Form11();
            frm.Show();
        }


        private void Form2_Load(object sender, EventArgs e)
        {
            tssl_username.Text = userName;
        }


        private void button10_Click(object sender, EventArgs e)
        {
            this.Close();
            Form12 frm = new Form12();
            frm.Show();
        }
    }
}
```

4 读者信息管理

4.1 界面

4.2 业务逻辑代码

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Security.Cryptography;
using System.Text;
using System.Text.RegularExpressions;
using System.Threading.Tasks;
using System.Windows.Forms;
using MySqlConnector;
using static System.Windows.Forms.VisualStyles.VisualStyleElement.StartPanel;

namespace LibrarySystem
{
    public partial class Form3 : Form
    {
        public Form3()
        {
            InitializeComponent();
        }

        private void button2_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
        }

        private void btn_save_Click(object sender, EventArgs e)
        {
            string name = txt_name.Text.Trim();
            string sex = rb_man.Checked == true ? "1" : "0";
            string age = nud_age.Value.ToString();
            string telephone = txt_tel.Text.Trim();
            string type = cbb_type.SelectedValue.ToString();//txt_type.Text.Trim();
            DateTime datetime = DateTime.Now;
            string time = datetime.ToString();//用短横线"-"隔开
            string reg = @"[1-9][0-9]{10}";
            Regex r = new Regex(reg);
            if (name == "")
            {//用户名不能为空
                lb_sta.Text = "用户名不能为空";
                lb_sta.ForeColor= Color.Red;
```

```csharp
                txt_name.Focus();
            }
            else if (telephone == "")
            {//联系电话不能为空
                lb_sta.Text = "联系电话不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
            }//表中一些其他信息初始默认为空或 0
            else if (!r.IsMatch(telephone))
            {
                lb_sta.Text = "联系电话格式错误";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
            }
            else if (lb_statue.Text == "添加")
            {
                MySqlConnection    conn    =    new    MySqlConnection    ("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("insert into Reader_info values" +
                    "(null,'{0}',{1},{2},0,0,'{3}',0,null,null,'{4}',{5})", name, age, sex, telephone, time, type);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，读者信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，读者信息添加失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
            else
            {
                MySqlConnection    conn    =    new    MySqlConnection    ("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("update Reader_Info set Rname='{0}'," +
                    "age={1},sex={2},telephone='{3}',Time='{4}',Typeid={5} where Rid={6}" ,name, age,sex,telephone, time,type,
Ridt);
                MySqlCommand cmd = new MySqlCommand(str, conn);
```

```csharp
            int i = cmd.ExecuteNonQuery();
            conn.Close();
            if (i > 0)
            {
                lb_sta.Text = "恭喜您，读者信息修改成功！";
                lb_sta.ForeColor = Color.Blue;
                ClearTexBox();
                DataBind_Customer();
            }
            else
            {
                lb_sta.Text = "对不起，读者信息修改失败";
                lb_sta.ForeColor = Color.Red;
            }
        }
    }
    protected void ClearTexBox()
    {
        txt_name.Text = "";
        txt_tel.Text = "";
        //txt_type.Text = "";
        rb_man.Checked = true;
        nud_age.Value = 0;
        lb_statue.Text = "添加";
    }

    protected void DataBind_Customer()
    {
        MySqlConnection    conn    =    new    MySqlConnection("server=localhost;database=library_system;UID=root;
PWD=123456;port=3306");
        conn.Open();
        string str = string.Format("select * from Reader_Info") ;
        MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
        DataTable dt = new DataTable();
        da.Fill(dt);
        conn.Close();
        lv_reader.Items.Clear();
        foreach (DataRow dr in dt.Rows)
        {
            ListViewItem myitem = new ListViewItem(dr["Rid"].ToString());
            myitem.SubItems.Add(dr["Rname"].ToString());
            myitem.SubItems.Add(dr["age"].ToString());
            myitem.SubItems.Add(dr["sex"].ToString());
            myitem.SubItems.Add(dr["borrownum"].ToString());
            myitem.SubItems.Add(dr["againstTime"].ToString());
            myitem.SubItems.Add(dr["telephone"].ToString());
```

```csharp
                    myitem.SubItems.Add(dr["isLost"].ToString());
                    myitem.SubItems.Add(dr["Typeid"].ToString());
                    myitem.SubItems.Add(dr["Time"].ToString());
                    myitem.SubItems.Add(dr["LastTime"].ToString());
                    myitem.SubItems.Add(dr["text"].ToString());
                    lv_reader.Items.Add(myitem);
                }
        }
        protected void DataBind_Type()
        {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;UID=root; PWD=123456; port=3306");
                conn.Open();
                string str = string.Format("select * from Readertype_Info");
                MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
                DataTable dt = new DataTable();
                da.Fill(dt);
                conn.Close();
                cbb_type.DataSource = dt;
                cbb_type.DisplayMember = "Tname";
                cbb_type.ValueMember = "Typeid";
        }
        private void Form3_Load(object sender, EventArgs e)
        {
                rb_man.Checked = true;
                tssl_username.Text = Form2.userName;
                DataBind_Customer();
                DataBind_Type();
        }
        string Ridt = "";
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
                if(lv_reader.SelectedItems.Count > 0)
                {
                    ListViewItem myitem = lv_reader.SelectedItems[0];
                    Ridt = myitem.SubItems[0].Text;
                    txt_name.Text = myitem.SubItems[1].Text;
                    nud_age.Text = myitem.SubItems[2].Text;
                    rb_man.Checked = myitem.SubItems[3].Text=="1"?true:false;
                    rb_woman.Checked = myitem.SubItems[3].Text == "0" ? true:false;
                    txt_tel.Text = myitem.SubItems[6].Text;
                    cbb_type.SelectedValue = myitem.SubItems[8].Text;
                    lb_statue.Text = "修改";
                }
        }
```

```csharp
        private void btn_del_Click(object sender, EventArgs e)
        {
            if (Ridt == "")
            {
                MessageBox.Show("请先选中要删除的信息");
            }
            else
            {
                DialogResult result = MessageBox.Show("确定要删除选中的读者信息？", "删除提示",
                    MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                if (result == DialogResult.Yes)
                {
                    MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;UID=root;
PWD=123456;port=3306");
                    conn.Open();
                    string str = string.Format("delete from Reader_Info where Rid={0}", Ridt);
                    MySqlCommand cmd = new MySqlCommand(str, conn);
                    int i = cmd.ExecuteNonQuery();
                    conn.Close();
                    if (i > 0)
                    {
                        lb_sta.Text = "恭喜您，读者信息删除成功！";
                        lb_sta.ForeColor = Color.Blue;
                        ClearTexBox();
                        DataBind_Customer();
                    }
                    else
                    {
                        lb_sta.Text = "对不起，读者信息删除失败";
                        lb_sta.ForeColor = Color.Red;
                    }
                }
            }
        }

        private void btn_can_Click(object sender, EventArgs e)
        {
            ClearTexBox();
            lb_sta.Text = "";
        }

        private void btn_select_Click(object sender, EventArgs e)
        {
            ClearTexBox();
            string userid= txt_bx1.Text.Trim();
            txt_bx1.Text = "";
```

```csharp
            if (userid == "")
            {
                lb_sta.Text = "请输入查询条件";
                lb_sta.ForeColor = Color.Red;
                txt_bx1.Focus();
                return;
            }
            else
            {
                MySqlConnection    conn    =    new    MySqlConnection("server=localhost;database=library_system;UID=root;
PWD=123456;port=3306");
                conn.Open();
                string str = String.Format("select * from reader_Info where Rid={0}", userid);
                MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
                DataTable dt = new DataTable();
                da.Fill(dt);
                conn.Close();
                foreach (DataRow dr in dt.Rows)
                {
                    txt_name.Text = dr["Rname"].ToString();
                    txt_tel.Text = dr["telephone"].ToString();
                    if(dr["sex"].ToString()=="1")rb_man.Checked = true;
                    else rb_woman.Checked = true;
                    nud_age.Value = Convert.ToInt32(dr["age"].ToString());
                }
                if (txt_name.Text == "")
                {
                    lb_sta.Text = "请输入存在的用户借阅号";
                    lb_sta.ForeColor = Color.Red;
                    txt_bx1.Focus();
                    return;
                }
                else
                {
                    Ridt = userid;
                    lb_statue.Text = "修改";
                }
            }
        }
    }
}



            lb_sta.Text = "请输入查询条件";
```

5 读者类型管理

5.1 界面

5.2 业务逻辑代码

```
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 MySqlConnector;
namespace LibrarySystem
{
    public partial class Form6 : Form
    {
        public Form6()
        {
            InitializeComponent();
        }
        private void btn_return_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
        }
```

```csharp
        private void btn_save_Click(object sender, EventArgs e)
        {
            string name = txt_name.Text.Trim();
            string biggest = txt_tel.Text.Trim();
            string time = txt_time.Text.Trim();
            if (name == "")
            {
                lb_sta.Text = "类型名不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_name.Focus();
            }
            else if (biggest=="")
            {
                lb_sta.Text = "最大借阅数不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
            }
            else if (time == "")
            {
                lb_sta.Text = "最长借阅时间不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_time.Focus();
            }
            else if (lb_statue.Text == "添加")
            {
                MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root; PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("insert into readertype_info
values(null,'{0}',{1},{2})",name,biggest,time);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，读者类型信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，读者类型信息添加失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
```

```
            else
            {
                MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root; PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("update readertype_info set Tname='{0}',Biggest='{1}',Loggest='{2}'
where Typeid={3}",name,biggest,time,typeid);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，读者类型信息修改成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，读者类型信息修改失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
        protected void ClearTexBox()
        {
            txt_name.Text = "";
            txt_tel.Text = "";
            txt_time.Text = "";
            lb_statue.Text = "添加";
        }
        protected void DataBind_Customer()
        {
            MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;UID=root;
PWD=123456;port=3306");
            conn.Open();
            string str = "select * from readertype_info";
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            lv_reader.Items.Clear();
            foreach (DataRow dr in dt.Rows)
            {
                ListViewItem myitem = new ListViewItem(dr["Typeid"].ToString());
                myitem.SubItems.Add(dr["Tname"].ToString());
```

```csharp
                myitem.SubItems.Add(dr["Biggest"].ToString());
                myitem.SubItems.Add(dr["Loggest"].ToString());
                lv_reader.Items.Add(myitem);
            }
        }
        private void Form6_Load(object sender, EventArgs e)
        {
            tssl_username.Text = Form2.userName;
            DataBind_Customer();
        }

        string typeid = "";
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
            if (lv_reader.SelectedItems.Count > 0)
            {
                ListViewItem myitem = lv_reader.SelectedItems[0];
                typeid = myitem.SubItems[0].Text;
                txt_name.Text = myitem.SubItems[1].Text;
                txt_tel.Text = myitem.SubItems[2].Text;
                txt_time.Text = myitem.SubItems[3].Text;
                lb_statue.Text = "修改";
            }
        }
        private void btn_del_Click(object sender, EventArgs e)
        {
            if (typeid == "")
            {
                MessageBox.Show("请先选中要删除的信息");
            }
            else
            {
                DialogResult result = MessageBox.Show("确定要删除选中的读者类型信息？", "删除提示",
                    MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                if (result == DialogResult.Yes)
                {
                    MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root; PWD=123456;port=3306");
                    conn.Open();
                    string str = string.Format("delete from readertype_info where Typeid={0}", typeid);
                    MySqlCommand cmd = new MySqlCommand(str, conn);
                    int i = cmd.ExecuteNonQuery();
                    conn.Close();
                    if (i > 0)
                    {
                        lb_sta.Text = "恭喜您，读者类型信息删除成功！";
```

```
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，读者类型信息删除失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
    }
    private void btn_can_Click(object sender, EventArgs e)
    {
        ClearTexBox();
        lb_sta.Text = "";
    }
    private void lb_statue_Click(object sender, EventArgs e)
    {
    }
    }
}
```

6 管理员信息管理

6.1 界面

6.2 业务逻辑代码

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Text.RegularExpressions;
using System.Threading.Tasks;
using System.Windows.Forms;
using MySqlConnector;
using static System.Windows.Forms.AxHost;
using static System.Windows.Forms.VisualStyles.VisualStyleElement.StartPanel;
namespace LibrarySystem
{
    public partial class Form11 : Form
    {
        public Form11()
        {
            InitializeComponent();
        }

        private void btn_return_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
        }
        private void btn_save_Click(object sender, EventArgs e)
        {
            string name = txt_name.Text.Trim();
            string sex = rb_man.Checked == true ? "1" : "0";
            string age = nud_age.Value.ToString();
            string telephone = txt_tel.Text.Trim();
            string type = txt_type.Text.Trim();
            string time = txt_time.Text.ToString();
            string posi = txt_position.Text.Trim();
            string reg = @"[1-9][0-9]{10}";
            Regex r = new Regex(reg);
            if (name == "")
            {//用户名不能为空
                lb_sta.Text = "用户名不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_name.Focus();
            }
```

```csharp
            else if (type == "")
            {//密码不能为空
                lb_sta.Text = "密码不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_type.Focus();
            }
            else if (telephone == "")
            {//联系电话不能为空
                lb_sta.Text = "联系电话不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
            }//工作职位和时间可以为空
            else if (!r.IsMatch(telephone))
            {
                lb_sta.Text = "联系电话格式错误";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
            }
            else if (lb_statue.Text == "添加")
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("insert into controller_info values (null,'{0}',{1},{2},'{3}',
'{4}','{5}','{6}')", name, sex, age, posi, telephone, time, type);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，管理员信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，管理员信息添加失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
            else if(lb_statue.Text == "修改" && txt_name.ReadOnly==false)
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
```

```csharp
            string str = string.Format("update controller_Info set Cname='{0}',sex={1},age={2},
position='{3}',ctelephone='{4}',worktime='{5}',Password='{6}'" +"where cid={7}", name, sex, age, posi,
telephone, time, type,cid);
            MySqlCommand cmd = new MySqlCommand(str, conn);
            int i = cmd.ExecuteNonQuery();
            conn.Close();
            if (i > 0)
            {
                Form2.userName = name;
                tssl_username.Text = Form2.userName;
                lb_sta.Text = "恭喜您，管理员信息修改成功！";
                lb_sta.ForeColor = Color.Blue;
                ClearTexBox();
                DataBind_Customer();
            }
            else
            {
                lb_sta.Text = "对不起，管理员信息修改失败";
                lb_sta.ForeColor = Color.Red;
            }
        }
    }
    protected void ClearTexBox()
    {
        txt_name.Text = "";
        txt_tel.Text = "";
        txt_time.Text = "";
        txt_type.Text = "";
        txt_position.Text = "";
        rb_man.Checked = true;
        nud_age.Value = 0;
        lb_statue.Text = "添加";
        txt_name.ReadOnly = false;
        nud_age.ReadOnly = false;
        txt_position.ReadOnly = false;
        txt_tel.ReadOnly = false;
        txt_time.ReadOnly = false;
        txt_type.ReadOnly = false;
    }
    protected void DataBind_Customer()
    {
        MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
        conn.Open();
        string str = "select * from controller_Info";
        MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
```

```csharp
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            lv_reader.Items.Clear();
            foreach (DataRow dr in dt.Rows)
            {
                ListViewItem myitem = new ListViewItem(dr["Cid"].ToString());
                myitem.SubItems.Add(dr["Cname"].ToString());
                myitem.SubItems.Add(dr["sex"].ToString());
                myitem.SubItems.Add(dr["age"].ToString());
                myitem.SubItems.Add(dr["position"].ToString());
                myitem.SubItems.Add(dr["ctelephone"].ToString());
                myitem.SubItems.Add(dr["worktime"].ToString());
                myitem.SubItems.Add(dr["Password"].ToString());
                lv_reader.Items.Add(myitem);
            }
        }
        private void Form11_Load(object sender, EventArgs e)
        {
            rb_man.Checked = true;
            tssl_username.Text = Form2.userName;
            DataBind_Customer();
        }
        string cid = "";
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
            if (lv_reader.SelectedItems.Count > 0)
            {
                txt_name.ReadOnly = false;
                nud_age.ReadOnly = false;
                txt_position.ReadOnly = false;
                txt_tel.ReadOnly = false;
                txt_time.ReadOnly = false;
                txt_type.ReadOnly = false;
                ListViewItem myitem = lv_reader.SelectedItems[0];
                cid = myitem.SubItems[0].Text;
                txt_name.Text = myitem.SubItems[1].Text;
                rb_man.Checked = myitem.SubItems[2].Text == "1" ? true : false;
                rb_woman.Checked = myitem.SubItems[2].Text == "0" ? true : false;
                nud_age.Text = myitem.SubItems[3].Text;
                txt_position.Text = myitem.SubItems[4].Text;
                txt_tel.Text = myitem.SubItems[5].Text;
                txt_time.Text = myitem.SubItems[6].Text;
                txt_type.Text = myitem.SubItems[7].Text;
                lb_statue.Text = "修改";
            }
```

```csharp
        if(txt_name.Text!= Form2.userName)
        {
            txt_name.ReadOnly = true;
            nud_age.ReadOnly = true;
            txt_position.ReadOnly = true;
            txt_tel.ReadOnly = true;
            txt_time.ReadOnly = true;
            txt_type.ReadOnly = true;
        }
    }
    private void btn_del_Click(object sender, EventArgs e)
    {
        if (cid == "")
        {
            MessageBox.Show("请先选中要删除的信息");
        }
        else
        {
            DialogResult result = MessageBox.Show("确定要删除选中的管理员信息？", "删除提示",
                MessageBoxButtons.YesNo, MessageBoxIcon.Question);
            if (result == DialogResult.Yes)
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("delete from Controller_Info where Cid={0}", cid);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，管理员信息删除成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，管理员信息删除失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
    }
    private void btn_can_Click(object sender, EventArgs e)
    {
```

```
            ClearTexBox();
            lb_sta.Text = "";
        }
    }
}
```

7 馆藏信息管理

7.1 界面

7.2 业务逻辑代码

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Security.Cryptography;
using System.Text;
using System.Threading.Tasks;
using System.Web;
using System.Windows.Forms;
using MySqlConnector;
namespace LibrarySystem
{
    public partial class Form7 : Form
    {
        public Form7()
        {
            InitializeComponent();
        }
```

```csharp
        private void btn_return_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
        }
        private void btn_save_Click(object sender, EventArgs e)
        {
            string statue = cbb_type.Text;//txt_tel.Text.Trim();
            string ISBN = txt_type.Text.Trim();
            DateTime datetime = DateTime.Now;
            string time = datetime.ToString();
            if (ISBN == "")
            {
                lb_sta.Text = "ISBN不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_type.Focus();
            }
            else if (lb_statue.Text == "添加")
            {
                MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                conn.Open();
                string stt = string.Format("select * from Booktype_info where ISBN='{0}'", ISBN);
                MySqlDataAdapter mda=new MySqlDataAdapter(stt,conn);
                DataTable dt = new DataTable();
                mda.Fill(dt);
                if(dt.Rows.Count <= 0)
                {
                    lb_sta.Text = "ISBN输入错误";
                    lb_sta.ForeColor = Color.Red;
                    txt_type.Focus();
                    conn.Close();
                    return;
                }
                string str = string.Format("insert into Book_info values('{0}',null,'{1}','{2}',null)", ISBN,
time, statue);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，图书信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
```

```
                }
                else
                {
                    lb_sta.Text = "对不起，图书信息添加失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
            else
            {
                MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                conn.Open();
                string stt = string.Format("select * from Booktype_info where ISBN='{0}'", ISBN);
                MySqlDataAdapter mda = new MySqlDataAdapter(stt, conn);
                DataTable dt = new DataTable();
                mda.Fill(dt);
                if (dt.Rows.Count <= 0)
                {
                    lb_sta.Text = "ISBN输入错误";
                    lb_sta.ForeColor = Color.Red;
                    txt_type.Focus();
                    conn.Close();
                    return;
                }
                string str = string.Format("update Book_Info set ISBN='{0}',statue='{1}'where bid={2}", ISBN,
statue, bid);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，图书信息修改成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，图书信息修改失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
        protected void ClearTexBox()
        {
            txt_type.Text = "";
```

```csharp
            lb_statue.Text = "添加";
        }
        protected void DataBind_Customer()
        {
            MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = string.Format("select * from Book_Info");
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            lv_reader.Items.Clear();
            foreach (DataRow dr in dt.Rows)
            {
                ListViewItem myitem = new ListViewItem(dr["Bid"].ToString());
                myitem.SubItems.Add(dr["ISBN"].ToString());
                myitem.SubItems.Add(dr["intime"].ToString());
                myitem.SubItems.Add(dr["statue"].ToString());
                myitem.SubItems.Add(dr["Rid"].ToString());
                lv_reader.Items.Add(myitem);
            }
        }
        protected void DataBind_Type()
        {//图书三种状态
            cbb_type.Items.Add("在馆");
            cbb_type.Items.Add("丢失损坏");
            cbb_type.Items.Add("借出");

        }
        private void Form7_Load(object sender, EventArgs e)
        {
            tssl_username.Text = Form2.userName;
            DataBind_Customer();
            DataBind_Type();
        }
        string bid = "";
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
            if (lv_reader.SelectedItems.Count > 0)
            {
                ListViewItem myitem = lv_reader.SelectedItems[0];
                bid = myitem.SubItems[0].Text;
                cbb_type.Text = myitem.SubItems[3].Text;
                txt_type.Text = myitem.SubItems[1].Text;
                lb_statue.Text = "修改";
```

```csharp
                }
            }
        private void btn_del_Click(object sender, EventArgs e)
        {
            if (bid == "")
            {
                MessageBox.Show("请先选中要删除的信息");
            }
            else
            {
                DialogResult result = MessageBox.Show("确定要删除选中的图书信息？", "删除提示",
                    MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                if (result == DialogResult.Yes)
                {
                    MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                    conn.Open();
                    string str = string.Format("delete from Book_Info where bid={0}", bid);
                    MySqlCommand cmd = new MySqlCommand(str, conn);
                    int i = cmd.ExecuteNonQuery();
                    conn.Close();
                    if (i > 0)
                    {
                        lb_sta.Text = "恭喜您，图书信息删除成功！";
                        lb_sta.ForeColor = Color.Blue;
                        ClearTexBox();
                        DataBind_Customer();
                    }
                    else
                    {
                        lb_sta.Text = "对不起，图书信息删除失败";
                        lb_sta.ForeColor = Color.Red;
                    }
                }
            }
        }
        private void btn_can_Click(object sender, EventArgs e)
        {
            ClearTexBox();
            lb_sta.Text = "";
        }
    }
}
```

8 图书信息管理

8.1 界面

8.2 业务逻辑代码

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Text.RegularExpressions;
using System.Threading.Tasks;
using System.Windows.Forms;
using MySqlConnector;
using static System.Windows.Forms.AxHost;
using static System.Windows.Forms.VisualStyles.VisualStyleElement.StartPanel;
namespace LibrarySystem
{
    public partial class Form5 : Form
    {
        public Form5()
        {
            InitializeComponent();
        }
        private void btn_return_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
```

```csharp
        }
        private void btn_save_Click(object sender, EventArgs e)
        {
            string name = txt_name.Text.Trim();
            string ISBN=txt_type.Text.Trim();
            string wid = cbb_writer.SelectedValue.ToString();//txt_wid.Text.ToString();
            string price = txt_tel.Text.Trim();
            string pid = cbb_press.SelectedValue.ToString();///txt_pid.Text.Trim();
            string kind = txt_kind.Text.Trim();
            string edition=txt_edtion.Text.Trim();
            string time = txt_time.Text.Trim();
            DateTime dtDate;
            if (ISBN == "")
            {
                lb_sta.Text = "ISBN不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_name.Focus();
            }
            else if (name == "")
            {
                lb_sta.Text = "书名不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_type.Focus();
            }
            else if (time == "")
            {
                lb_sta.Text = "出版时间不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_time.Focus();
            }
            else if(!Regex.IsMatch(time, "^(?<year>\\d{2,4})-(?<month>\\d{1,2})-(?<day>\\d{1,2})$"))
            {
                lb_sta.Text = "出版时间格式错误";
                lb_sta.ForeColor = Color.Red;
                txt_time.Focus();
            }
            else if (price == "")
            {
                lb_sta.Text = "价格不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
            }
            else if (lb_statue.Text == "添加")
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
```

```csharp
                conn.Open();
                string str = string.Format("insert into booktype_info values ('{0}', {1}, '{2}',
{3},'{4}','{5}','{6}',{7})" ,ISBN,wid,name,price,kind,time,edition,pid);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，图书类型信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，图书类型信息添加失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
            else
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("update booktype_info set ISBN='{0}',wid={1},
bname='{2}',price={3},kind='{4}'" +",publishTime='{5}',edition='{6}',pid={7} where ISBN='{8}'", ISBN, wid,
name, price, kind, time, edition, pid,ISBNt);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，图书类型信息修改成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，图书类型信息修改失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
        protected void ClearTexBox()
        {
```

```csharp
            txt_name.Text = "";
            txt_tel.Text = "";
            txt_time.Text = "";
            txt_type.Text = "";
            txt_edtion.Text = "";
            txt_kind.Text = "";
            txt_time.Text = "";
            lb_statue.Text = "添加";
        }
        protected void DataBind_Customer()
        {
            MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = "select * from booktype_info";
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);
            lv_reader.Items.Clear();
            foreach (DataRow dr in dt.Rows)
            {
                ListViewItem myitem = new ListViewItem(dr["ISBN"].ToString());
                string stt = string.Format("select * from book_info where ISBN='{0}' and statue='在馆'",
dr["ISBN"].ToString());
                MySqlDataAdapter dda = new MySqlDataAdapter(stt, conn);
                DataTable dtt = new DataTable();
                dda.Fill(dtt);
                myitem.SubItems.Add(dr["wid"].ToString());
                myitem.SubItems.Add(dr["bname"].ToString());
                myitem.SubItems.Add(dr["price"].ToString());
                myitem.SubItems.Add(dr["kind"].ToString());
                myitem.SubItems.Add(dr["publishTime"].ToString());
                myitem.SubItems.Add(dr["edition"].ToString());
                myitem.SubItems.Add(dr["pid"].ToString());
                myitem.SubItems.Add(dtt.Rows.Count.ToString());
                lv_reader.Items.Add(myitem);
            }
            conn.Close();
        }
        protected void DataBind_Press()
        {
            MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = "select * from press_info";
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
```

```csharp
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            cbb_press.DataSource = dt;
            cbb_press.DisplayMember = "pname";
            cbb_press.ValueMember = "pid";
        }
        protected void DataBind_Writer()
        {
            MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = "select * from writer_info";
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            cbb_writer.DataSource = dt;
            cbb_writer.DisplayMember = "wname";
            cbb_writer.ValueMember = "wid";
        }
        private void Form5_Load(object sender, EventArgs e)
        {
            tssl_username.Text = Form2.userName;
            DataBind_Customer();
            DataBind_Press();
            DataBind_Writer();
        }
        string ISBNt = "";
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
            if (lv_reader.SelectedItems.Count > 0)
            {
                ListViewItem myitem = lv_reader.SelectedItems[0];
                ISBNt = myitem.SubItems[0].Text;
                txt_type.Text = myitem.SubItems[0].Text;
                cbb_writer.SelectedValue = myitem.SubItems[1].Text;
                //txt_wid.Text = myitem.SubItems[1].Text;
                txt_name.Text = myitem.SubItems[2].Text;
                txt_tel.Text = myitem.SubItems[3].Text;
                txt_kind.Text = myitem.SubItems[4].Text;
                txt_time.Text = myitem.SubItems[5].Text;
                txt_edtion.Text = myitem.SubItems[6].Text;
                lb_statue.Text = "修改";
            }
        }
```

```csharp
        private void btn_del_Click(object sender, EventArgs e)
        {
            if (ISBNt == "")
            {
                MessageBox.Show("请先选中要删除的信息");
            }
            else
            {
                DialogResult result = MessageBox.Show("确定要删除选中的图书类型信息？", "删除提示",
                    MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                if (result == DialogResult.Yes)
                {
                    MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                    conn.Open();
                    string str = string.Format("delete from booktype_info where ISBN='{0}'", ISBNt);
                    MySqlCommand cmd = new MySqlCommand(str, conn);
                    int i = cmd.ExecuteNonQuery();
                    conn.Close();
                    if (i > 0)
                    {
                        lb_sta.Text = "恭喜您，图书类型信息删除成功！";
                        lb_sta.ForeColor = Color.Blue;
                        ClearTexBox();
                        DataBind_Customer();
                    }
                    else
                    {
                        lb_sta.Text = "对不起，图书类型信息删除失败";
                        lb_sta.ForeColor = Color.Red;
                    }
                }
            }
        }
        private void btn_can_Click(object sender, EventArgs e)
        {
            ClearTexBox();
            lb_sta.Text = "";
        }
    }
}
```

9 作者信息管理

9.1 界面

9.2 业务逻辑代码

```csharp
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 MySqlConnector;
using static System.Windows.Forms.VisualStyles.VisualStyleElement.TaskbarClock;
using static System.Windows.Forms.VisualStyles.VisualStyleElement;
using System.Text.RegularExpressions;
namespace LibrarySystem
{
    public partial class Form8 : Form
    {
        public Form8()
        {
            InitializeComponent();
        }
        private void btn_return_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
        }
```

```csharp
        private void btn_save_Click(object sender, EventArgs e)
        {
            string name = txt_name.Text.Trim();
            string telephone = txt_tel.Text.Trim();
            string type = txt_type.Text.Trim();
            string id = txt_time.Text.Trim();
            string address = txt_address.Text.Trim();
            string reg = @"[1-9][0-9]{10}";
            Regex r = new Regex(reg);
            if (name == "")
            {//除了姓名，其他信息都不强制
                lb_sta.Text = "作者名不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_name.Focus();
            }
            else if (id == "")
            {
                lb_sta.Text = "身份证号不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_time.Focus();
            }
            else if (telephone != "" && !r.IsMatch(telephone))
            {
                lb_sta.Text = "联系电话格式错误";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
            }
            else if(lb_statue.Text == "添加")
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("insert into writer_info values(null,'{0}','{1}','{2}','{3}','{4}')", name, telephone, address, type, id);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，作者信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
```

```csharp
                            lb_sta.Text = "对不起，作者信息添加失败";
                            lb_sta.ForeColor = Color.Red;
                    }
                }
                else
                {
                    MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                    conn.Open();
                    string str = string.Format("update writer_Info set wname='{0}'," +
                        "wtelephone='{1}',waddress='{2}',idType='{3}',idNum='{4}' where wid={5}",
name,telephone,address,type,id,wid);
                    MySqlCommand cmd = new MySqlCommand(str, conn);
                    int i = cmd.ExecuteNonQuery();
                    conn.Close();
                    if (i > 0)
                    {
                        lb_sta.Text = "恭喜您，作者信息修改成功！";
                        lb_sta.ForeColor = Color.Blue;
                        ClearTexBox();
                        DataBind_Customer();
                    }
                    else
                    {
                        lb_sta.Text = "对不起，作者信息修改失败";
                        lb_sta.ForeColor = Color.Red;
                    }
                }
        }
        protected void ClearTexBox()
        {
            txt_name.Text = "";
            txt_tel.Text = "";
            txt_time.Text = "";
            txt_type.Text = "";
            txt_address.Text = "";
            lb_statue.Text = "添加";
        }
        protected void DataBind_Customer()
        {
            MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = "select * from writer_Info";
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
```

```csharp
            da.Fill(dt);
            conn.Close();
            lv_reader.Items.Clear();
            foreach (DataRow dr in dt.Rows)
            {
                ListViewItem myitem = new ListViewItem(dr["wid"].ToString());
                myitem.SubItems.Add(dr["wname"].ToString());
                myitem.SubItems.Add(dr["wtelephone"].ToString());
                myitem.SubItems.Add(dr["waddress"].ToString());
                myitem.SubItems.Add(dr["idType"].ToString());
                myitem.SubItems.Add(dr["idNum"].ToString());
                lv_reader.Items.Add(myitem);
            }
        }
        private void Form8_Load(object sender, EventArgs e)
        {
            tssl_username.Text = Form2.userName;
            DataBind_Customer();
        }
        string wid = "";
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
            if (lv_reader.SelectedItems.Count > 0)
            {
                ListViewItem myitem = lv_reader.SelectedItems[0];
                wid = myitem.SubItems[0].Text;
                txt_name.Text = myitem.SubItems[1].Text;
                txt_tel.Text = myitem.SubItems[2].Text;
                txt_address.Text = myitem.SubItems[3].Text;
                txt_type.Text = myitem.SubItems[4].Text;
                txt_time.Text = myitem.SubItems[5].Text;
                lb_statue.Text = "修改";
            }
        }
        private void btn_del_Click(object sender, EventArgs e)
        {
            if (wid == "")
            {
                MessageBox.Show("请先选中要删除的信息");
            }
            else
            {
                DialogResult result = MessageBox.Show("确定要删除选中的作者信息？", "删除提示",
                    MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                if (result == DialogResult.Yes)
                {
```

```
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("delete from writer_Info where wid={0}", wid);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，作者信息删除成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，作者信息删除失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
        private void btn_can_Click(object sender, EventArgs e)
        {
            ClearTexBox();
            lb_sta.Text = "";
        }
    }
}
```

10 出版社信息管理

10.1 界面

10.2 业务逻辑代码

```csharp
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 MySqlConnector;
using static System.Windows.Forms.VisualStyles.VisualStyleElement.TaskbarClock;
using static System.Windows.Forms.VisualStyles.VisualStyleElement;
using System.Text.RegularExpressions;
namespace LibrarySystem
{
    public partial class Form4 : Form
    {
        public Form4()
        {
            InitializeComponent();
        }

        private void btn_return_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
        }
        private void btn_save_Click(object sender, EventArgs e)
        {
            string name = txt_name.Text.Trim();
            string telephone = txt_tel.Text.Trim();
            string address = txt_address.Text.Trim();
            string fax=txt_fax.Text.Trim();
            string controller=txt_type.Text.Trim();
            string reg = @"[1-9][0-9]{10}";
            Regex r = new Regex(reg);
            if (name == "")
            {
                lb_sta.Text = "出版社名不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_name.Focus();
            }
            else if (controller=="")
            {
```

```csharp
                lb_sta.Text = "出版社负责人不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_type.Focus();
        }
        else if (address == "")
        {
                lb_sta.Text = "出版社地址不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_address.Focus();
        }
        else if (telephone=="")
        {
                lb_sta.Text = "联系电话不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
        }
        else if (!r.IsMatch(telephone))
        {
                lb_sta.Text = "联系电话格式错误";
                lb_sta.ForeColor = Color.Red;
                txt_tel.Focus();
        }
        else if(lb_statue.Text == "添加")
        {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("insert into press_info values(null,'{0}','{1}','{2}','{3}','{4}')"
                    , name, controller, telephone, address, fax);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，出版社信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，出版社信息添加失败";
                    lb_sta.ForeColor = Color.Red;
                }
        }
        else
```

```csharp
            {
                MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("update press_info set Pname='{0}'," +
                    "controller='{1}',ptelephone='{2}',paddress='{3}',fax='{4}' where pid={5}", name,
controller, telephone, address, fax, pid);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，出版社信息修改成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，出版社信息修改失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
        protected void ClearTexBox()
        {
            txt_name.Text = "";
            txt_tel.Text = "";
            txt_fax.Text = "";
            txt_type.Text = "";
            txt_address.Text = "";
            lb_statue.Text = "添加";
        }
        protected void DataBind_Customer()
        {
            MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = "select * from press_info";
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            lv_reader.Items.Clear();
            foreach (DataRow dr in dt.Rows)
            {
```

```csharp
                ListViewItem myitem = new ListViewItem(dr["pid"].ToString());
                myitem.SubItems.Add(dr["Pname"].ToString());
                myitem.SubItems.Add(dr["controller"].ToString());
                myitem.SubItems.Add(dr["ptelephone"].ToString());
                myitem.SubItems.Add(dr["paddress"].ToString());
                myitem.SubItems.Add(dr["fax"].ToString());
                lv_reader.Items.Add(myitem);
            }
        }
        private void Form4_Load(object sender, EventArgs e)
        {
            tssl_username.Text = Form2.userName;
            DataBind_Customer();
        }
        string pid = "";
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
            if (lv_reader.SelectedItems.Count > 0)
            {
                ListViewItem myitem = lv_reader.SelectedItems[0];
                pid = myitem.SubItems[0].Text;
                txt_name.Text = myitem.SubItems[1].Text;
                txt_type.Text = myitem.SubItems[2].Text;
                txt_tel.Text = myitem.SubItems[3].Text;
                txt_address.Text = myitem.SubItems[4].Text;
                txt_fax.Text = myitem.SubItems[5].Text;
                lb_statue.Text = "修改";
            }
        }
        private void btn_del_Click(object sender, EventArgs e)
        {
            if (pid == "")
            {
                MessageBox.Show("请先选中要删除的信息");
            }
            else
            {
                DialogResult result = MessageBox.Show("确定要删除选中的出版社信息？", "删除提示",
                    MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                if (result == DialogResult.Yes)
                {
                    MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                    conn.Open();
                    string str = string.Format("delete from press_info where pid={0}", pid);
                    MySqlCommand cmd = new MySqlCommand(str, conn);
```

```
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，出版社信息删除成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，出版社信息删除失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
    }
}
```

11 图书借阅信息管理

11.1 界面

11.2 业务逻辑代码

```
using System.Data;
using System.Globalization;
using System.Transactions;
using MySqlConnector;
```

```csharp
namespace LibrarySystem
{
    public partial class Form9 : Form
    {
        public Form9()
        {
            InitializeComponent();
        }

        private void btn_return_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
        }
        private void btn_save_Click(object sender, EventArgs e)
        {
            string name = txt_name.Text.Trim();
            string again = nud_age.Value.ToString();
            string cid = Form2.uid;//txt_tel.Text.Trim();
            DateTime datetime = DateTime.Now;
            string time = datetime.ToString();
            string ltime="";
            string rid = txt_rid.Text.Trim();
            if (name == "")
            {
                lb_sta.Text = "图书编号不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_name.Focus();
            }
            else if (rid == "")
            {
                lb_sta.Text = "用户借阅号不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_rid.Focus();
            }
            else if (lb_statue.Text == "添加")
            {
                MySqlConnection                    conn                    =                    new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                conn.Open();
                string stt = string.Format("select * from reader_Info where rid={0}", rid);
                MySqlDataAdapter da = new MySqlDataAdapter(stt, conn);
                DataTable dt = new DataTable();
                da.Fill(dt);
                int tt = 0, topp = 0,againstTime=0,longest=0;
```

```csharp
string oin = "";
foreach (DataRow dr in dt.Rows)
{
    //查看违规次数和借阅书数目
    tt = Convert.ToInt32(dr["borrowNum"].ToString());
    againstTime= Convert.ToInt32(dr["againstTime"].ToString());
    stt = string.Format("select * from readertype_Info where Typeid={0}", dr["Typeid"].ToString());
}
da = new MySqlDataAdapter(stt, conn);
dt = new DataTable();
da.Fill(dt);
foreach (DataRow dr in dt.Rows)
{
    topp = Convert.ToInt32(dr["Biggest"].ToString());
    longest = Convert.ToInt32(dr["Loggest"].ToString());
}
if (againstTime > 3)
{//违规不能借阅
    lb_sta.Text = "对不起，该用户违规次数过多，暂时无法借阅";
    lb_sta.ForeColor = Color.Red;
    conn.Close();
    return;
}
if (topp - tt <= 0)
{//查看用户是否还可以借书
    lb_sta.Text = "对不起，该用户无法再借阅更多图书";
    lb_sta.ForeColor = Color.Red;
    conn.Close();
    return;
}
stt = string.Format("select * from book_info where bid='{0}'", name);
da = new MySqlDataAdapter(stt, conn);
dt = new DataTable();
da.Fill(dt);
foreach (DataRow dr in dt.Rows)
{
    oin = dr["statue"].ToString();
}
if (oin != "在馆")
{//图书不在图书馆，则无法借出
    lb_sta.Text = "对不起，该图书无法外借";
    lb_sta.ForeColor = Color.Red;
    conn.Close();
    return;
}
//计算还书日期
```

```csharp
ltime = datetime.AddDays(longest+Convert.ToInt32(again)*30).ToString();
MySqlTransaction myt = conn.BeginTransaction();
MySqlCommand cmd = new MySqlCommand();
cmd.Connection = conn;
cmd.Transaction = myt;
try {
    string str = string.Format("update book_info set statue='借出',Rid={0} where bid={1}", rid, name);
    cmd.CommandText = str;
    cmd.ExecuteNonQuery();
    str = string.Format("update reader_info set borrowNum={0} where Rid={1}", tt + 1, rid);
    cmd.CommandText = str;
    cmd.ExecuteNonQuery();
    str = string.Format("insert into bookborrow_info values(null,'{0}','{1}',{2},{3},{4},{5})",time, ltime, again, name, rid, cid);

    cmd.CommandText = str;
    int i = cmd.ExecuteNonQuery();
    lb_sta.Text = "恭喜您，借阅信息添加成功！";
    lb_sta.ForeColor = Color.Blue;
    ClearTexBox();
    myt.Commit();
    conn.Close();
}
catch
{
    lb_sta.Text = "对不起，借阅信息添加失败";
    lb_sta.ForeColor = Color.Red;
    myt.Rollback();
    conn.Close();
}
DataBind_Customer();
}
else
{//续借直接通过修改续借次数和到期时间完成
    DateTimeFormatInfo dtFormat = new System.Globalization.DateTimeFormatInfo();
    dtFormat.ShortDatePattern = "yyyy-MM-dd HH:mm:ss";
    DateTime a = Convert.ToDateTime(oriagain,dtFormat);
    ltime = a.AddDays(30*(Convert.ToInt32(again) -oria)).ToString();
    MySqlConnection                                conn                            =                            new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
    conn.Open();
    string str = string.Format("update bookborrow_info set lastTime='{0}',againTime={1} " +
        "where borrowid={2}", ltime, again, borid);
    MySqlCommand cmd = new MySqlCommand(str, conn);
    int i = cmd.ExecuteNonQuery();
    conn.Close();
    if (i > 0)
```

```csharp
            {
                lb_sta.Text = "恭喜您，借阅信息修改成功！";
                lb_sta.ForeColor = Color.Blue;
                ClearTexBox();
                DataBind_Customer();
            }
            else
            {
                lb_sta.Text = "对不起，借阅信息修改失败";
                lb_sta.ForeColor = Color.Red;
            }
        }
    }
    protected void ClearTexBox()
    {
        txt_name.Text = "";
        txt_rid.Text = "";
        nud_age.Value = 0;
        lb_statue.Text = "添加";
        txt_name.ReadOnly = false;
        txt_rid.ReadOnly = false;
    }
    protected void DataBind_Customer()
    {
        MySqlConnection      conn      =      new      MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
        conn.Open();
        string str = "select * from bookborrow_Info";
        MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
        DataTable dt = new DataTable();
        da.Fill(dt);
        conn.Close();
        lv_reader.Items.Clear();
        foreach (DataRow dr in dt.Rows)
        {
            ListViewItem myitem = new ListViewItem(dr["borrowid"].ToString());
            myitem.SubItems.Add(dr["borrowTime"].ToString());
            myitem.SubItems.Add(dr["lastTime"].ToString());
            myitem.SubItems.Add(dr["againTime"].ToString());
            myitem.SubItems.Add(dr["bid"].ToString());
            myitem.SubItems.Add(dr["Rid"].ToString());
            myitem.SubItems.Add(dr["Cid"].ToString());
            lv_reader.Items.Add(myitem);
        }
    }
    private void Form9_Load(object sender, EventArgs e)
```

```csharp
        {
            tssl_username.Text = Form2.userName;
            DataBind_Customer();
        }
        string borid = "";
        string oriagain = "";
        int oria = 0;
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
            if (lv_reader.SelectedItems.Count > 0)
            {
                ListViewItem myitem = lv_reader.SelectedItems[0];
                borid = myitem.SubItems[0].Text;
                nud_age.Text = myitem.SubItems[3].Text;
                txt_name.Text = myitem.SubItems[4].Text;
                txt_rid.Text = myitem.SubItems[5].Text;
                oria=Convert.ToInt32(nud_age.Text);
                oriagain= myitem.SubItems[2].Text;
                lb_statue.Text = "修改";
            }
            txt_name.ReadOnly = true;
            txt_rid.ReadOnly = true;
        }
        private void btn_del_Click(object sender, EventArgs e)
        {
            if (borid == "")
            {
                MessageBox.Show("请先选中要删除的信息");
            }
            else
            {
                DialogResult result = MessageBox.Show("确定要删除选中的借阅信息？", "删除提示",
                    MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                if (result == DialogResult.Yes)
                {
                    MySqlConnection      conn      =      new      MySqlConnection("server=localhost;database=
library_system;UID=root;PWD=123456;port=3306");
                    conn.Open();
                    string str = string.Format("delete from Reader_Info where borrowid={0}", borid);
                    MySqlCommand cmd = new MySqlCommand(str, conn);
                    int i = cmd.ExecuteNonQuery();
                    conn.Close();
                    if (i > 0)
                    {
                        lb_sta.Text = "恭喜您，借阅信息删除成功！";
                        lb_sta.ForeColor = Color.Blue;
```

```csharp
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，借阅信息删除失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
    }
    private void btn_can_Click(object sender, EventArgs e)
    {
        ClearTexBox();
        lb_sta.Text = "";
    }
    private void btn_select_Click(object sender, EventArgs e)
    {
        ClearTexBox();
        string borrid = txt_bx1.Text.Trim();
        txt_bx1.Text = "";
        if (borrid == "")
        {
            lb_sta.Text = "请输入查询条件";
            lb_sta.ForeColor = Color.Red;
            txt_bx1.Focus();
            return;
        }
        else
        {
            MySqlConnection    conn    =    new    MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = String.Format("select * from bookborrow_Info where borrowid={0}",borrid);
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            foreach (DataRow dr in dt.Rows)
            {
                nud_age.Text = dr["againTime"].ToString();
                txt_name.Text = dr["Bid"].ToString();
                txt_rid.Text = dr["Rid"].ToString();
                oriagain = dr["lastTime"].ToString();
                oria = Convert.ToInt32(dr["againTime"].ToString());
            }
```
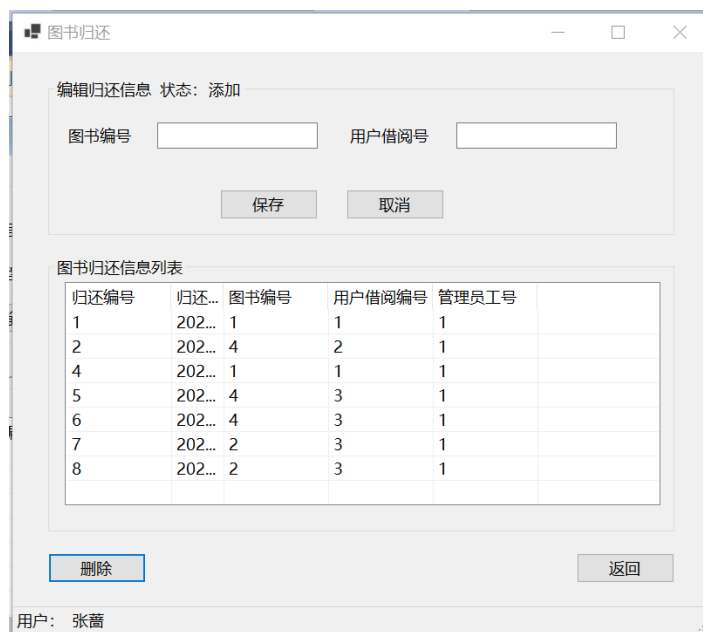
```
            if (txt_name.Text == "")
            {
                lb_sta.Text = "结果不存在";
                lb_sta.ForeColor = Color.Red;
                txt_bx1.Focus();
                return;
            }
            else
            {
                borid= borrid;
                lb_statue.Text = "修改";

            }
        }
    }
}
```

12 图书归还信息管理

12.1 界面

12.2 业务逻辑代码

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
```

```csharp
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using MySqlConnector;
namespace LibrarySystem
{
    public partial class Form10 : Form
    {
        public Form10()
        {
            InitializeComponent();
        }
        private void btn_return_Click(object sender, EventArgs e)
        {//返回功能选择界面
            this.Close();
            Form2 frm = new Form2();
            frm.Show();
        }
        private void btn_save_Click(object sender, EventArgs e)
        {
            string name = txt_name.Text.Trim();
            string cid = Form2.uid;//txt_tel.Text.Trim();
            DateTime datetime = DateTime.Now;
            string time = datetime.ToString();
            string rid = txt_rid.Text.Trim();
            if (name == "")
            {//图书编号不能为空
                lb_sta.Text = "图书编号不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_name.Focus();
            }
            else if (rid == "")
            {//用户借阅号不能为空
                lb_sta.Text = "用户借阅号不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_rid.Focus();
            }
            else if (lb_statue.Text == "添加")
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                string stt = string.Format("select * from reader_info where Rid={0}", rid);
                string oin = "", owner = "";
                int tt = 0;
                MySqlDataAdapter da = new MySqlDataAdapter(stt, conn);
```

```csharp
                DataTable dt = new DataTable();
                da.Fill(dt);
                foreach (DataRow dr in dt.Rows)
                {
                    tt = Convert.ToInt32(dr["borrowNum"].ToString());
                }
                stt = string.Format("select * from book_info where bid='{0}'", name);
                da = new MySqlDataAdapter(stt, conn);
                dt = new DataTable();
                da.Fill(dt);
                foreach (DataRow dr in dt.Rows)
                {
                    oin = dr["statue"].ToString();
                    owner = dr["Rid"].ToString();
                }
                if (oin != "借出")
                {//不是借出状态的书无法归还
                    lb_sta.Text = "对不起，该图书无法归还";
                    lb_sta.ForeColor = Color.Red;
                    conn.Close();
                    return;
                }
                else if (rid != owner)
                {
                    lb_sta.Text = "对不起，您不是本书的借阅者";
                    lb_sta.ForeColor = Color.Red;
                    conn.Close();
                    return;
                }
                MySqlTransaction myt = conn.BeginTransaction();
                MySqlCommand cmd = new MySqlCommand();
                cmd.Connection = conn;
                cmd.Transaction = myt;
                try
                {
                    string str = string.Format("update book_info set statue='在馆',Rid=null where bid={0}", name);
                    cmd.CommandText=str;
                    cmd.ExecuteNonQuery();
                    str = string.Format("update reader_info set borrowNum={0} where Rid={1}", tt - 1, rid);
                    cmd.CommandText = str;
                    cmd.ExecuteNonQuery();
                    str = string.Format("insert into bookback_info values(null,'{0}',{1},{2},{3})", time,name,rid,cid);
                    cmd.CommandText = str;
                    int i = cmd.ExecuteNonQuery();
```

```csharp
                    lb_sta.Text = "恭喜您，归还信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    myt.Commit();
                    conn.Close();
                }
                catch
                {
                    lb_sta.Text = "对不起，归还信息添加失败";
                    lb_sta.ForeColor = Color.Red;
                    myt.Rollback();
                    conn.Close();
                }
                DataBind_Customer();
            }
            else
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                conn.Open();
                string str = string.Format("update bookback_info set bid={0},Rid={1},Cid={2} where backid={3}", name, rid, cid, backid);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，归还信息修改成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，归还信息修改失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
        protected void ClearTexBox()
        {
            txt_name.Text = "";
            txt_rid.Text = "";
            txt_name.ReadOnly = false;
            txt_rid.ReadOnly = false;
            lb_statue.Text = "添加";
```

```csharp
        }
        protected void DataBind_Customer()
        {
            MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = "select * from bookback_Info";
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            lv_reader.Items.Clear();
            foreach (DataRow dr in dt.Rows)
            {
                ListViewItem myitem = new ListViewItem(dr["backid"].ToString());
                myitem.SubItems.Add(dr["backTime"].ToString());
                myitem.SubItems.Add(dr["bid"].ToString());
                myitem.SubItems.Add(dr["Rid"].ToString());
                myitem.SubItems.Add(dr["Cid"].ToString());
                lv_reader.Items.Add(myitem);
            }
        }
        private void Form10_Load(object sender, EventArgs e)
        {
            tssl_username.Text = Form2.userName;
            DataBind_Customer();
        }
        string backid = "";
        private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
        {
            if (lv_reader.SelectedItems.Count > 0)
            {
                ListViewItem myitem = lv_reader.SelectedItems[0];
                backid = myitem.SubItems[0].Text;
                txt_name.Text = myitem.SubItems[3].Text;
                txt_rid.Text = myitem.SubItems[4].Text;
                txt_name.ReadOnly = true;
                txt_rid.ReadOnly = true;
                lb_statue.Text = "修改";
            }
        }
        private void btn_del_Click(object sender, EventArgs e)
        {
            if (backid == "")
            {
                MessageBox.Show("请先选中要删除的信息");
```

```
                }
                else
                {
                    DialogResult result = MessageBox.Show("确定要删除选中的归还信息？", "删除提示",
                        MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                    if (result == DialogResult.Yes)
                    {
                        MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                        conn.Open();
                        string str = string.Format("delete from backbook_Info where backid={0}", backid);
                        MySqlCommand cmd = new MySqlCommand(str, conn);
                        int i = cmd.ExecuteNonQuery();
                        conn.Close();
                        if (i > 0)
                        {
                            lb_sta.Text = "恭喜您，归还信息删除成功！";
                            lb_sta.ForeColor = Color.Blue;
                            ClearTexBox();
                            DataBind_Customer();
                        }
                        else
                        {
                            lb_sta.Text = "对不起，归还信息删除失败";
                            lb_sta.ForeColor = Color.Red;
                        }
                    }
                }
        }
        private void btn_can_Click(object sender, EventArgs e)
        {
            ClearTexBox();
            lb_sta.Text = "";
        }
    }
}
```

13 罚款缴纳信息管理

13.1 界面

13.2 业务逻辑代码

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Security.Cryptography;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using System.Xml.Linq;
using Microsoft.VisualBasic;
using MySqlConnector;
namespace LibrarySystem
{
    public partial class Form12 : Form
    {
        public Form12()
        {
            InitializeComponent();
        }
        private void btn_return_Click(object sender, EventArgs e)
        {
            this.Close();
            Form2 frm = new Form2();
```

```csharp
                frm.Show();
        }
        private void btn_save_Click(object sender, EventArgs e)
        {
            string money = txt_money.Text;
            string book=txt_book.Text;
            string rid=txt_rid.Text;
            string cid= Form2.uid;
            DateTime datetime = DateTime.Now;
            string time = datetime.ToString();
            string kk = rb_is.Checked == true ? "超期" : "损毁";
            if (money == "")
            {
                lb_sta.Text = "罚款金额不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_money.Focus();
            }
            else if (book == "")
            {
                lb_sta.Text = "损毁/超期书籍编号不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_book.Focus();
            }
            else if (rid == "")
            {
                lb_sta.Text = "用户借阅编号不能为空";
                lb_sta.ForeColor = Color.Red;
                txt_rid.Focus();
            }
            else if (lb_statue.Text == "添加")
            {
                MySqlConnection conn = new MySqlConnection("server=localhost;database=library_system;
UID=root;PWD=123456;port=3306");
                conn.Open();
                int ta = 0;
                string stt = string.Format("select * from reader_info where Rid={0}", rid);
                MySqlDataAdapter da = new MySqlDataAdapter(stt, conn);
                DataTable dt = new DataTable();
                da.Fill(dt);
                foreach (DataRow dr in dt.Rows)
                {
                    ta = Convert.ToInt32(dr["againstTime"].ToString());
                }
                MySqlTransaction myt = conn.BeginTransaction();
                MySqlCommand cmd = new MySqlCommand();
                cmd.Connection = conn;
```

```
                cmd.Transaction = myt;
                try
                {
                    string str = "";
                    if (kk == "损毁")
                    {
                        str = string.Format("update book_info set statue='丢失损坏' where bid={0}", book);
                        cmd.CommandText = str;
                        cmd.ExecuteNonQuery();
                    }
                    str = string.Format("update reader_info set againstTime={0} where Rid={1}",ta+1, rid);
                    cmd.CommandText = str;
                    cmd.ExecuteNonQuery();
                    str = string.Format("insert into fine_info
values(null,{0},'{1}',{2},{3},{4},'{5}')",money,time,book,rid,cid,kk);
                    cmd.CommandText = str;
                    int i=cmd.ExecuteNonQuery();
                    lb_sta.Text = "恭喜您，罚款信息添加成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    myt.Commit();
                    conn.Close();
                }
                catch
                {
                    lb_sta.Text = "对不起，罚款信息添加失败";
                    lb_sta.ForeColor = Color.Red;
                    myt.Rollback();
                    conn.Close();
                }
                DataBind_Customer();
            }
            else
            {
                MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                conn.Open();
                if(kk== "损毁")
                {
                    string stt = string.Format("update book_info set statue='丢失损坏' where bid={0}", book);
                    MySqlCommand cmmd = new MySqlCommand(stt, conn);
                    int j = cmmd.ExecuteNonQuery();
                }
                else
                {
                    string stt = string.Format("update book_info set statue='在馆' where bid={0}", book);
```

```csharp
                MySqlCommand cmmd = new MySqlCommand(stt, conn);
                    int j = cmmd.ExecuteNonQuery();
                }
                string str = string.Format("update fine_info set money={0},kind='{1}' where
fineid={2}",money,kk, fineid);
                MySqlCommand cmd = new MySqlCommand(str, conn);
                int i = cmd.ExecuteNonQuery();
                conn.Close();
                if (i > 0)
                {
                    lb_sta.Text = "恭喜您，罚款信息修改成功！";
                    lb_sta.ForeColor = Color.Blue;
                    ClearTexBox();
                    DataBind_Customer();
                }
                else
                {
                    lb_sta.Text = "对不起，罚款信息修改失败";
                    lb_sta.ForeColor = Color.Red;
                }
            }
        }
        protected void ClearTexBox()
        {
            txt_money.Text = "";
            txt_rid.Text = "";
            txt_book.Text = "";
            txt_book.ReadOnly = false;
            txt_rid.ReadOnly = false;
            rb_is.Checked = true;
            lb_statue.Text = "添加";
        }
        protected void DataBind_Customer()
        {
            MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
            conn.Open();
            string str = "select * from fine_Info";
            MySqlDataAdapter da = new MySqlDataAdapter(str, conn);
            DataTable dt = new DataTable();
            da.Fill(dt);
            conn.Close();
            lv_reader.Items.Clear();
            foreach (DataRow dr in dt.Rows)
            {
                ListViewItem myitem = new ListViewItem(dr["fineid"].ToString());
```

```csharp
            myitem.SubItems.Add(dr["Money"].ToString());
            myitem.SubItems.Add(dr["FineTime"].ToString());
            myitem.SubItems.Add(dr["bid"].ToString());
            myitem.SubItems.Add(dr["Rid"].ToString());
            myitem.SubItems.Add(dr["Cid"].ToString());
            myitem.SubItems.Add(dr["kind"].ToString());
            lv_reader.Items.Add(myitem);
        }
    }
    private void Form12_Load(object sender, EventArgs e)
    {
        tssl_username.Text = Form2.userName;
        DataBind_Customer();
        rb_is.Checked = true;
    }
    string fineid = "";
    private void lv_reader_SelectedIndexChanged(object sender, EventArgs e)
    {
        if (lv_reader.SelectedItems.Count > 0)
        {
            ListViewItem myitem = lv_reader.SelectedItems[0];
            fineid = myitem.SubItems[0].Text;
            txt_money.Text = myitem.SubItems[1].Text;
            txt_book.Text = myitem.SubItems[3].Text;
            txt_rid.Text = myitem.SubItems[4].Text;
            if (myitem.SubItems[6].Text == "超期") rb_is.Checked = true;
            else rb_not.Checked = true;
            txt_book.ReadOnly = true;
            txt_rid.ReadOnly = true;
            lb_statue.Text = "修改";
        }
    }
    private void btn_can_Click(object sender, EventArgs e)
    {
        ClearTexBox();
        lb_sta.Text = "";
    }
    private void btn_del_Click(object sender, EventArgs e)
    {
        if (fineid == "")
        {
            MessageBox.Show("请先选中要删除的信息");
        }
        else
        {
            DialogResult result = MessageBox.Show("确定要删除选中的归还信息？", "删除提示",
```

```csharp
                        MessageBoxButtons.YesNo, MessageBoxIcon.Question);
                if (result == DialogResult.Yes)
                {
                    MySqlConnection conn = new
MySqlConnection("server=localhost;database=library_system;UID=root;PWD=123456;port=3306");
                    conn.Open();
                    string str = string.Format("delete from fine_Info where fineid={0}", fineid);
                    MySqlCommand cmd = new MySqlCommand(str, conn);
                    int i = cmd.ExecuteNonQuery();
                    conn.Close();
                    if (i > 0)
                    {
                        lb_sta.Text = "恭喜您，罚款信息删除成功！";
                        lb_sta.ForeColor = Color.Blue;
                        ClearTexBox();
                        DataBind_Customer();
                    }
                    else
                    {
                        lb_sta.Text = "对不起，罚款信息删除失败";
                        lb_sta.ForeColor = Color.Red;
                    }
                }
            }
        }
    }
}
```