

## **Cs 243**

### **LIBRARY MANAGEMENT SYSTEM**

#### **TECHNICAL DESCRIPTION**

Forms :

Form1

Rec\_Book

Log

Newlogin

MyAccount

Booksissued

ChngPass

AddBook

Search

Userdetail

Remove\_detail

Reco

DiscRoom

Ebook

#### **FORM1**

**Purpose:** Acts as the primary user interface

- Is the main form to show and hide required other forms

#### TOOLS USED

##### BUTTONS

The following buttons are displayed when user is not logged in

Button1: Displays the Recommendbook panel hiding all other panels

Button2: Displays the eBooks panel hiding all other panels

Button3: Displays the search panel

MyAccount:Displays log panel interface

The following buttons are displayed when user is logged in only as admin

recommended:Displays the Reco panel

Logoutbtn:Displays the original interface while logging out user

AddBook:Displays the addBook panel

RemoveBook:Displays the Remove\_details panel

UserDetail:Displays the userdetail panel

BookDetail:Displays the bookdetail panel

The following buttons are displayed when user is logged in as normal user

Button1: Displays the Recommendbook panel hiding all other panels

Button2: Displays the eBooks panel hiding all other panels

Button3: Displays the search panel

Logoutbtn:

- Displays the original interface while logging out user
- All the log functions are reset to empty

#### FUNTIONS AND MODULES USED

- BringToFront() : Brings the panel to the front
- Height(): gives the height of the panel
- Top(): gives the top of the panel
- Log.CurID : id of logged in user
- Log.CurUser : username of logged in user
- Log.CurPass : password of logged in user
- Log.CurRoll : Roll No of logged in user
- Log.CurName : Name of logged in user
- Log.CurAccess :Acces level of logged in user
- Log.CurProg: Programme of logged in user
- Log.CurDept:Departmentlogged in user
- Log.CurBkLimit:Booklimit the can be issuedlogged in user

- Log.CurBooks:books issued by the logged in user

#### CORNER CASES

- A User cannot recommend book while he is not logged in
- A User cannot issue eBooks while he is not logged in

### **Rec\_book Panel**

**Purpose:**for recommending book

- Is displayed by clicking Recommendbook button in MyAccount panel
- Adds the recommended book by user to the database table **Rec**

#### TOOLS USED

##### TEXT BOXES

Rec\_isbn :ISBN no of the book to recommend

Rec\_Auth:Author of the book to recommend

Rec\_title:Title for the book to recommend

##### BUTTONS

Rectbn:Adds the recommended book to the database

#### FUNTIONS AND MODULES USED

- Add\_recommend():is functon in rectbn\_click().Access the database and insert the recommended book into the **Rec** database table. If the recommended book is already in the database then a msgbox is displayed accordingly.

#### QUERIES HANDLED

- INSERT

**Dim insert As String = "Insert into Rec (ISBN, Title, Authors) values ('" & Rec\_isbn.Text & "','" & Rec\_title.Text & "','" & Rec\_Auth.Text & "')"**

**Access.ExecQuery(insert)**

- SELECT

**Access.ExecQuery("SELECT \* FROM Book WHERE ISBN = '" & Rec\_isbn.Text & "'")**

### CORNER CASES AND EXCEPTIONS

- If any field in the textboxes is empty, the msgbox is displayed accordingly.
- If the user is not logged in the msgbox is displayed accordingly.
- If the access does not return anything then the module is exited.

## Log Panel

**Purpose:** for logging in or signup

- Is displayed by clicking MyAccount button in Form 1
- User can login or signup

### TOOLS USED

#### TEXT BOXES

textUser :Username required to login

textPass: Password required to login

#### BUTTONS

login:

- Logs the user into his page
- If the user is logged in as admin the admin panel is displayed
- If the user is logged in as regularuser then the Myaccount profile is displayed
- All the userinformation is updated

Signup:

- Displays the Newlogin panel

#### FUNTIONS AND MODULES USED

- Access.DBDT.Rows().Item():accesses the particular item of the row in database from the selected table

#### QUERIES HANDLED

- SELECT

**Access.ExecQuery("SELECT \* FROM Users")**

**Access.ExecQuery("SELECT \* FROM Users WHERE Username = '" & txtUser.Text & "' AND Psswd = '" & txtPass.Text & "'")**

#### CORNER CASES AND EXCEPTIONS

- If any field in the textboxes is empty, the msgbox is displayed accordingly.
- If the username and password does not match with the database information, then the msgbox is displayed accordingly
- If the access does not return anything then the module is exited.

### **NewloginPanel**

**Purpose:** creating account for user

- Is displayed by clicking signup button in MyAccount panel
- User can create account

#### TOOLS USED

##### TEXT BOXES

textName : name of user

textPass: Password is stored

textRoll : Rollno of user is stored

textMail : Mailid of user is stored

Textconf : Confirmation of password

COMBOBOX:

Cmbstf:Choosing whether staff or student

Cmbdisc:Choosing the discipline

Cmbdept:Choosing the department

BUTTONS

Choose image:

- Lets user choose profilepicture through openfiledialog tool
- Picture can be jpg,png,bmp,gif ,jpeg format.

Signup:Adds the user into database with the given details

#### FUNTIONS AND MODULES USED

- NewLogin\_Load(sender As Object, e As EventArgs):loads the comboboxes
- Refresh():
- cmbStf\_SelectedIndexChanged: sets booklimit according to the cmbstf.selecteitem
- Adduser(): adds user into database and displays his profile page

#### QUERIES HANDLED

- Insert

```
Dim insert As String = "Insert into Users (Username, Psswd, Roll_No, Title, Access, Program, Department, Book_Limit, Books_Issued) values ('" & txtMail.Text & "','" & txtPass.Text & "','" & txtRoll.Text & "','" & txtName.Text & "','" & cmbStf.SelectedItem & "','" & cmbDisc.SelectedItem & "','" & cmbDept.SelectedItem & "','" & BookLimit & "','" & tmp & "')
```

```
Access.ExecQuery(insert)
```

- Select

```
Access.ExecQuery("SELECT * FROM Users WHERE Username = '" & txtMail.Text & "'")
```

#### CORNER CASES AND EXCEPTIONS

- If any field in the textboxes is empty, the msgbox is displayed accordingly.
- If webmail is already in the database the msgbox is displayed accordingly.
- If the password and the confirmation does not match the msgbox is displayed accordingly.
- If the Rollno is not numeric then the the msgbox is displayed accordingly.

### **MyAccountPanel**

- Is displayed by clicking login button in login panel and as regular user

#### TOOLS USED

##### BUTTONS

Myprofile:Displays the curprofile panel

Itemschecked:Displays the Booksissued panel

Change Password:Displays the chngPass panel

### **Booksissued Panel**

**Purpose:** To display the booksissued by the user and to return the book

- Is displayed by clicking itemschecked button in MyAccountpanel

#### TOOLS USED

Dynamic Label:displays the book issued

#### FUNTIONS AND MODULES USED

- RefreshPage():displays the booksissued by the user in dynamic labels
- hide():hides the label
- DynamicBooks(i As Integer, txt As String, R As DataRow):dynamically creates a label

- Clr():removes the label
- Button\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs):Returns the book I.e updates the bookcount and issuedto in book table and booksissued in user table in database
- 

#### QUERIES HANDLED

- Update

**Access.ExecQuery("Update Book set Copies\_Available=" & BkCnt & ", Issued\_to=" & BkIssNew & "" where [ID]=" & BkID)**

**Access.ExecQuery("Update Users set Book\_Limit=" & Log.CurBkLimit & ", Books\_Issued=" & Log.CurBooks & "" where [ID]=" & Log.CurID)**

- Select

**Access.ExecQuery("SELECT \* from Book WHERE [ID]=" & CInt(temp))**

**Access.ExecQuery("SELECT \* FROM Book where [ID] = " & IDFind)**

#### CORNER CASES AND EXCEPTIONS

- If not logged in, then the msgbox is displayed accordingly
- If bookto be returned not found, then the msgbox is displayed accordingly

### **ChngPass Panel**

Purpose:for user to change his password

- Is displayed by clicking changepassword button in MyAccount panel

#### TOOLS USED

TEXT BOXES

Oldpass: current password of user



Newpass: new password for account

Newpass2:confirmation of password

BUTTONS

Update:

- Updates the password of logged user in usertabel in database

#### FUNTIONS AND MODULES USED

- `changepass()`:updates the password in database

#### QUERIES HANDLED

- Update

**`Access.ExecQuery("Update Users set Psswd="" & pass & "" where [ID]=" & Log.CurlID`**

#### CORNER CASES AND EXCEPTIONS

- If any field in the textboxes is empty, the msgbox is displayed accordingly.
- If the user is not logged in the msgbox is displayed accordingly.
- If the password and confirmation password doesn't match the msgbox is displayed accordingly.
- If the access does not return anything then the module is exited.

### **AddbookPanel**

Purpose:for adding book into database

- Is displayed by clicking addbook button when logged in as admin

#### TOOLS USED

TEXT BOXES

booktitle: title of the book to be added

author: author of the book to be added

isbn: isbn no of the book to be added

genre: genre of the book to be added

publisher: publisher of the book to be added

BUTTONS

add:

- Adds the book into book table in database

#### FUNTIONS AND MODULES USED

- addBtn\_Click:increases the number of copies if the book Is already present in database otherwise calls addnewBook function
- addnewBook():adds boo kinto database if the book is not present in the database

#### QUERIES HANDLED

- Insert

```
Dim insert As String = "Insert into Book (Title, ISBN, Authors, Copies_Available,  
Issued_to, Genre, Publisher) values ('" & bookTitle.Text & "','" & ISBN.Text & "','" &  
author.Text & "','" & tmp2 & "','" & tmp & "','" & genre.Text & "','" & publisher.Text &  
"'"
```

```
Access.ExecQuery(insert)
```

- Update

```
Dim increment As String = "Update Book set Copies_Available =" & temp & "where  
ISBN =" & ISBN.Text
```

```
Access.ExecQuery(increment)
```

- Select

```
Access.ExecQuery("Select * from Book where ISBN = '" & ISBN.Text & "'")
```

#### CORNER CASES AND EXCEPTIONS

- If any field in the textboxes is empty, the msgbox is displayed accordingly.

- If the book is not added the msgbox is displayed accordingly.

### **search Panel**

**Purpose:** To display the search results of books available in library

- Is displayed by clicking search in form1 or Myaccount panels

#### TOOLS USED

TEXTBOX

Btnsrch1:book to be searched

LABEL

Dynamic Label:displays the book issued

COMBOBOX

CmbSrch:choosing the keyword

BUTTON

SearchBtn:searches for the book

Issuebook:if the user is logged in then the book is issued to the particular user

#### FUNTIONS AND MODULES USED

- Refr():loads combobox with keyword information
- Hide():hides labels
- SrchClk():searches for the substring with respective keyword column in database and displays the book details in the dynamic label
- DynamicLabel(i As Integer, txt As String, R As DataRow):creates a dynamic label
- Button\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs):if the user is logged in then the book is issued to the user and the books issued in user table and issuedto,copies in book table is updated
- Clr():cleared the text box and the search results

#### QUERIES HANDLED

- Update

**Access.ExecQuery("Update Book set Copies\_Available=" & BkCnt & ", Issued\_to=" & Bklss & " where [ID]=" & BkID)**

**Access.ExecQuery("Update Users set Book\_Limit=" & Log.CurBkLimit & ", Books\_Issued=" & Log.CurBooks & " where [ID]=" & Log.CurID)**

- Select

**Access.ExecQuery("SELECT \* FROM Book")**

**Access.ExecQuery("SELECT \* from Book WHERE Title LIKE '%" & txtSrch.Text & "%")**

**Access.ExecQuery("SELECT \* from Book WHERE ISBN = " & txtSrch.Text & """)**

**Access.ExecQuery("SELECT \* from Book WHERE Genre LIKE '%" & txtSrch.Text & "%")**

**Access.ExecQuery("SELECT \* from Book WHERE Authors LIKE '%" & txtSrch.Text & "%")**

**Access.ExecQuery("SELECT \* from Book WHERE Publisher LIKE '%" & txtSrch.Text & "%")**

**Access.ExecQuery("SELECT \* FROM Book where [ID] = " & IDFind)**

#### CORNER CASES AND EXCEPTIONS

- If the search does not match with any of the book information the msgbox is displayed accordingly
- If the user is not logged in, then the user cannot issue books
- If the no. of copies available are 0 then the user cannot issue books
- If the booklimit of the user is reached then the user cannot issue books

### **userdetailPanel**

**Purpose:** for admin to access the details of users and books issued by the user

- Is displayed by clicking userdetail in when logged in as admin

#### TOOLS USED

TEXTBOX

Udetail: user to be searched

BUTTON

Usearch: searches for the user

#### FUNTIONS AND MODULES USED

- Load():loads the pic of user
- Refresh\_page():searches for the substring mentioned in username column in user table in database and displays the book details of books issued by the user

#### QUERIES HANDLED

- Select

**Access.ExecQuery("SELECT \* from Users WHERE Username LIKE '%" & Udetail.Text & "%")**

**Access.ExecQuery("SELECT \* from Users WHERE Username LIKE '%" & Udetail.Text & "%")**

**Access.ExecQuery("SELECT \* from Book WHERE [ID]=" & CInt(temp))**

#### CORNER CASES AND EXCEPTIONS

- If the search does not match with any of the user, the msgbox is displayed accordingly

#### **Remove\_detail Panel**

Purpose: for admin to access the bookdetails in the database and remove any book from the database

- Is displayed by clicking bookdetail in when logged in as admin

#### TOOLS USED

TEXTBOX

lblSrch2:book to be searched

LABEL

Dynamic Label:displays the book issued

COMBOBOX

Srchcbx:choosing the keyword

BUTTON

btnsearch:searches for the book

Details:displays the users to whom the book is issued

Remove:decrease the copies available by 1

#### FUNTIONS AND MODULES USED

- Refr():loads combobox with keyword information
- Hide():hides labels
- btnSearch\_Click():searches for the substring with respective keyword column in database and displays the book details in the dynamic label
- DynamicLabel(i As Integer, txt As String, R As DataRow):creates a dynamic label
- Button\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs):decreases the copies available by one
- Clr():cleared the text box and the search results

#### QUERIES HANDLED

- Update

**Access.ExecQuery("Update Book set Copies\_Available=" & BkCnt & ", Issued\_to=" & Bklss & "" where [ID]=" & BkID)**

**Access.ExecQuery("Update Users set Book\_Limit=" & Log.CurBkLimit & ", Books\_Issued=" & Log.CurBooks & "" where [ID]=" & Log.CurID)**

- Select

**Access.ExecQuery("SELECT \* FROM Book")**

**Access.ExecQuery("SELECT \* from Book WHERE Title LIKE '%" & srchTxt.Text & "%")**

**Access.ExecQuery("SELECT \* from Book WHERE ISBN = '" & srchTxt.Text & "'")**

**Access.ExecQuery("SELECT \* from Book WHERE Genre LIKE '%" & srchTxt.Text & "%")**

**Access.ExecQuery("SELECT \* from Book WHERE Authors LIKE '%" & srchTxt.Text & "%")**

**Access.ExecQuery("SELECT \* from Book WHERE Publisher LIKE '%" & srchTxt.Text & "%")**

**Access.ExecQuery("SELECT \* FROM Book where [ID] = " & IDFind)**

#### CORNER CASES AND EXCEPTIONS

- If the search does not match with any of the book information the msgbox is displayed accordingly
- If all the books are issued then the admin cannot remove the book

### **Reco Panel**

Purpose: for admin to access the recommended book in the database and remove any recommended book from the database

- Is displayed by clicking recommended books in when logged in as admin

#### TOOLS USED

DATAGRIDview

Rec\_table: the recommended books table is displayed

LABEL

Dynamic label: for displaying the recommended books

BUTTON

Btn\_del1: deletes the recommendation

#### FUNTIONS AND MODULES USED

- Show\_rec: displays the table in datagridview and displays each individual recommended book in a dynamic label
- DynamicLabel(i As Integer, txt As String, R As DataRow): creates a dynamic label
- Button\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs): deletes the recommendation
- Clr(): clears all the labels

#### QUERIES HANDLED

- Delete

**Access.ExecQuery("delete \* from Rec where [ID]=" & IDFind)**

- Select

**Access.ExecQuery("SELECT \* FROM Rec")**

**Access.ExecQuery("SELECT \* FROM Rec where [ID] = " & IDFind)**

#### CORNER CASES AND EXCEPTIONS

- If the book recommendation is not available, then the msgbox is displayed accordingly

### **DiscRoom Panel**

**Purpose:** for user to book room(4 rooms) for a time period for discussion the next day

- Is displayed by clicking discussion room in form1

#### TOOLS USED

##### LABEL

Dynamic label: for displaying the recommended books

##### BUTTON

Dynamic\_button: deletes the recommendation

#### FUNTIONS AND MODULES USED

- **DiscRoom\_Load\_1()**: accesses the last login day from Roomlastaccess.txt in resources folder in the project and if the current day is same as the last login day then all the information is loaded form the database.
- If the last login day is not the current day, then all the information of bookings is cleared and the user can book for the following next day
- **DynamicButton(i As Integer, j As Integer, nm As String)**:dynamically creates a button for the room-time slot



- Button\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs):if any dynamic button is clicked then the room is booked on his account and the button text changes to the username of the person booking the timeslot.
- The button click updates the room table in database storing the user ID in the particular row

#### QUERIES HANDLED

- Update

**Access.ExecQuery("Update Room Set 0=0, 1=0, 2=0, 3=0, 4=0, 5=0, 6=0, 7=0")**

**Access.ExecQuery("Update Room Set " & CStr(ans(1)) & "=" & Log.CurID & " where Room\_no=" & (ans(0) + 1))**

- Select

**Access.ExecQuery("SELECT \* from Room")**

**Access.ExecQuery("Select [Title] From Users Where [ID] =" & avail(i, j))**

#### CORNER CASES AND EXCEPTIONS

- If the user is not logged in, then he cannot book a timeslot
- If the timeslot is already booked, then he cannot book the particular time slot
- User can book for only the following day

### **eBooks Panel**

**Purpose:** for user to read ebooks

- Is displayed by clicking the eBooks button in form1

#### TOOLS USED

#### BUTTON

Search\_Button:searching the ebooks in the system

#### FUNTIONS AND MODULES USED

- Search\_Button\_Click: opens the file explorer to load the pdf

#### CORNER CASES AND EXCEPTIONS

- Only pdf files are accessible and loaded