

LIBRARY SYSTEM

Athar Khaled Bagunaid (WID170707)

Sara Ibrahim (WIF170720)

Esteve Vahan Edwin (WIF170041)

Introduction to the system:

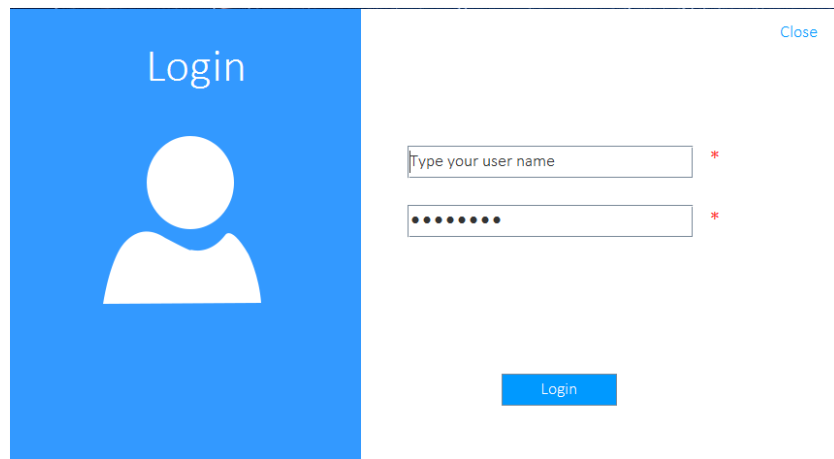
Library Management System is a software to manage the different operations required at a library .the features of the system is being able to login as a head Librarian ,librarian or a member. The librarian is able to Add members for registration, Add/ Modify/ Delete book categories, Add/ Modify/ Delete book entry in a specific category ,book-keeping and Clock in/ Clock out (Librarian).

The used programmes are jframes ,mysql as data base and jdbc to connect JAVA with mysql.

In this program we used JFrame each frame is is considered as independent class. The data of the users and books are stored in mysql data base which is connected to java using mysql JDBC jar file. The login form is actually login class in GUI form. when user login to the system the system checkout the the data stored in login table in mysql database this table contains user name, password and account type so when there is match the correct user will login to the correct account type (member, Librarian and head librarian).

System details

At the login page user will be able to write user name and password in order to enter the system.



The following frame is the member's frame. This frame is actually class that will include all the member information (properties) and functions (editing profile). You can notice that the frame shows a welcome text with the member user name. This class contains a GUI tool tabbed pane, which enabled us to divide the member jfram into multiple sub-frames (user profile, book search and renew membership).

The members are able update their information. We are able to achieve this goal by fetching user information in member frame (class). All the information are visible to a member using disabled text field and text area. If the member wants to change his/her information he/she needs to click the edit link. it is not actually link it is a JLabel that we set the click event of it to enable editing of textfield one by one.

UM LIBRARY

User Profile Book Search Renew Membership

User name Sara Edit

Full name Sara Ibrahim Edit

Local address Kampung Edit

Phone number Edit

E-mail address Edit

Change password

Welcome Sara

if the member wants to change password he/she just has to click on change password link to take him/her to the change password frame.

Change password

Hello Sara, you can here change your password

Current password

Check

Cancel


New password

Re-enter password

Change password

In this frame, the system will ask to enter the current password, for security purpose. if there is match the textfields and button will be enabled to allow the member to change the password.

The second tab of this frame is search a book in which the member can choose the category

 **UM LIBRARY**

User Profile

Book Search

Renew Membership

Book name

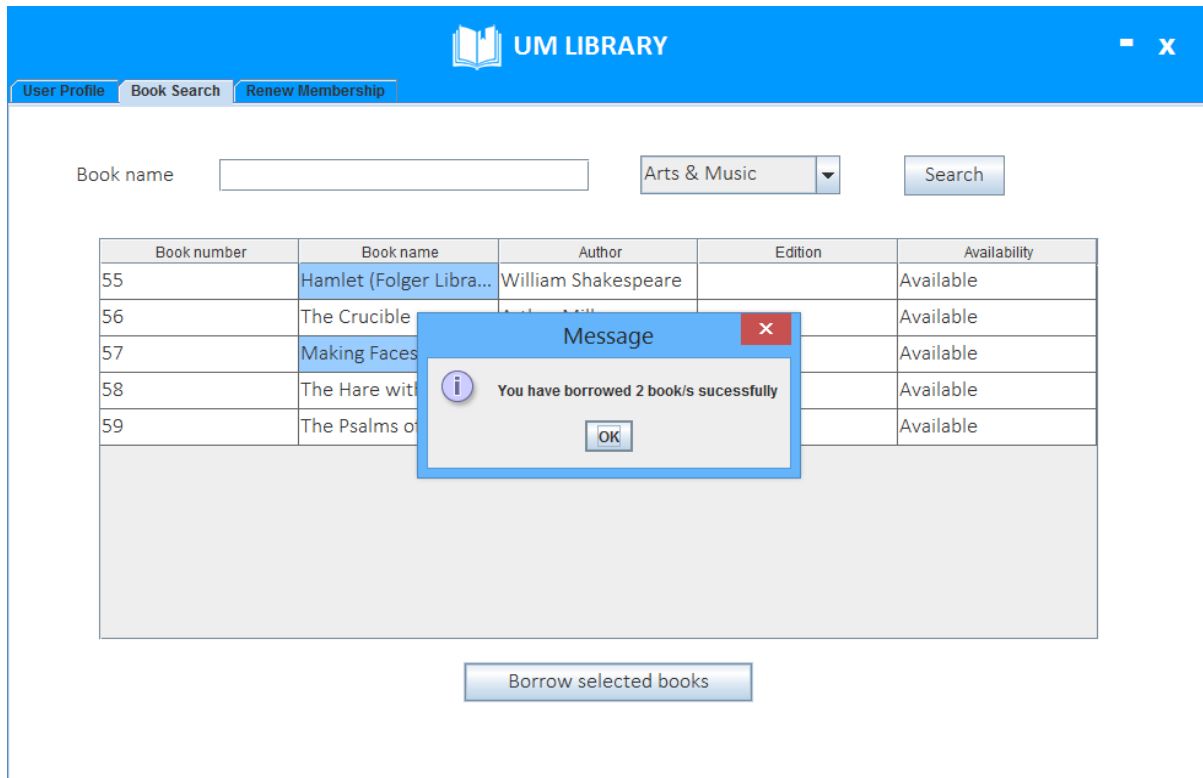
Arts & Music

Search

Book number	Book name	Author	Edition	Availability
55	Hamlet (Folger Libra...	William Shakespeare		Available
56	The Crucible	Arthur Miller		Available
57	Making Faces	Kevyn Aucoin		Available
58	The Hare with Ambe...	Edmund de Waal		Available
59	The Psalms of David	James S. Freemantle		Available

Borrow selected books

of books and write a name or part of the name of the book then click search. If the member did not write the name of the book, then the search button will fetch all the books in the selected category. In the table book information will be visible to the member including the book availability. The member can select on the wanted book/s then click borrow. the book status will change to borrow.



UM LIBRARY

User Profile Book Search Renew Membership

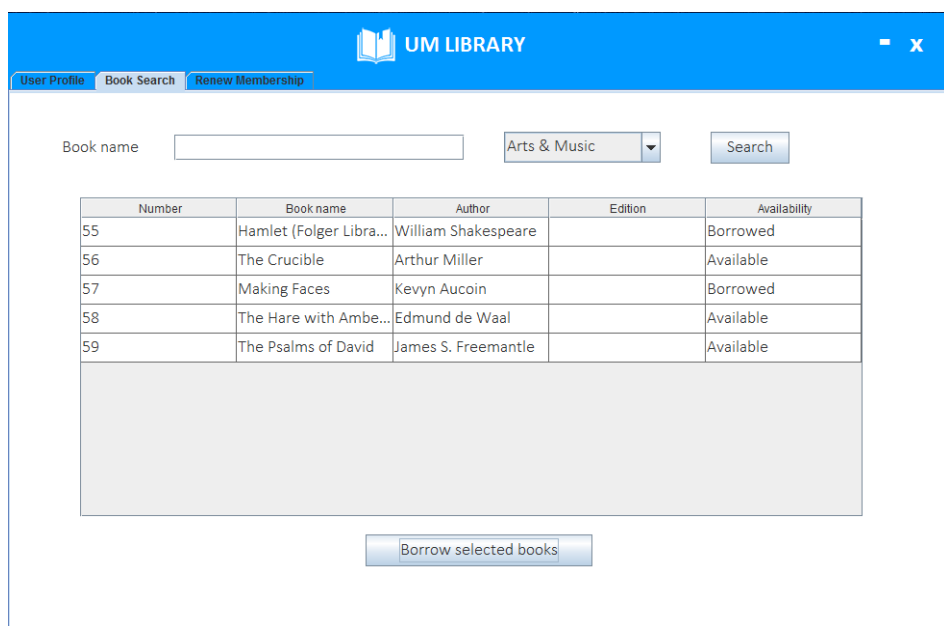
Book name Arts & Music

Book number	Book name	Author	Edition	Availability
55	Hamlet (Folger Libra...	William Shakespeare		Available
56	The Crucible	Arthur Miller		Available
57	Making Faces	Kevyn Aucoin		Available
58	The Hare with	Edmund de Waal		Available
59	The Psalms of	James S. Freemantle		Available

Message

You have borrowed 2 book/s successfully

OK



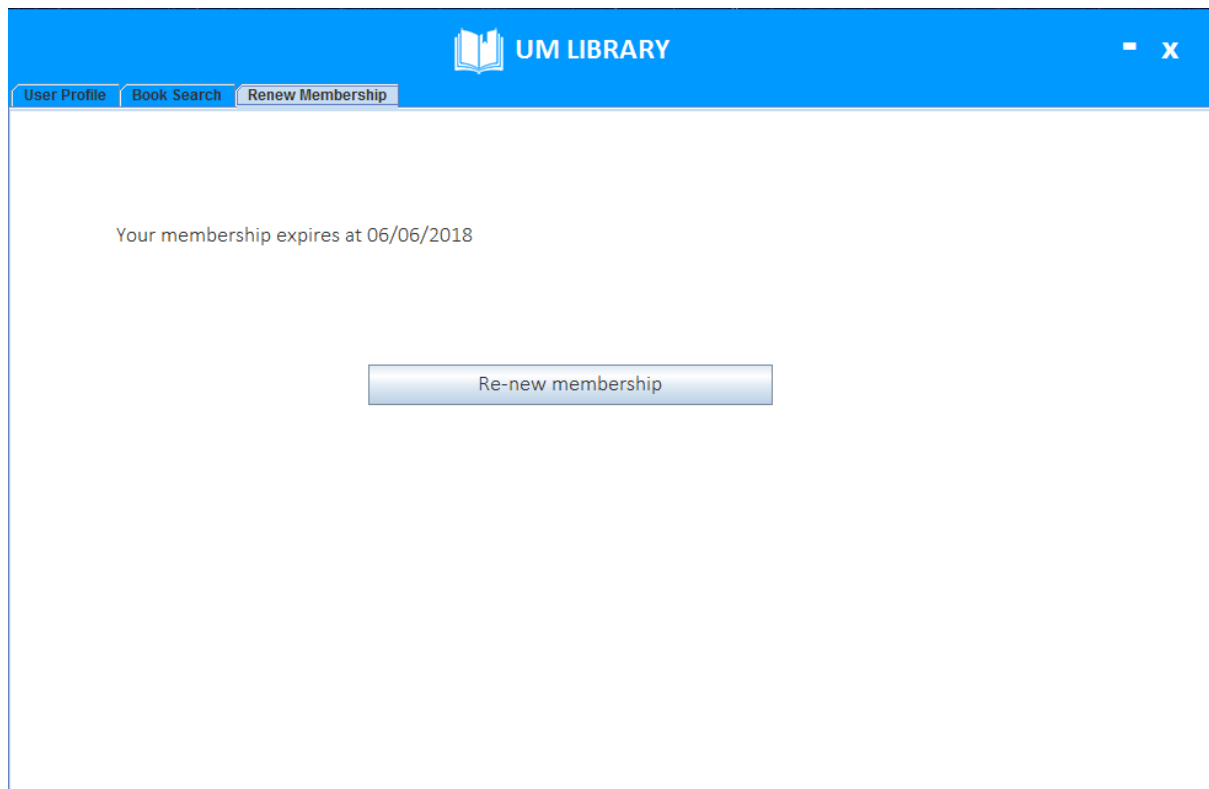
UM LIBRARY

User Profile Book Search Renew Membership

Book name Arts & Music

Number	Book name	Author	Edition	Availability
55	Hamlet (Folger Libra...	William Shakespeare		Borrowed
56	The Crucible	Arthur Miller		Available
57	Making Faces	Kevyn Aucoin		Borrowed
58	The Hare with Ambe...	Edmund de Waal		Available
59	The Psalms of David	James S. Freemantle		Available

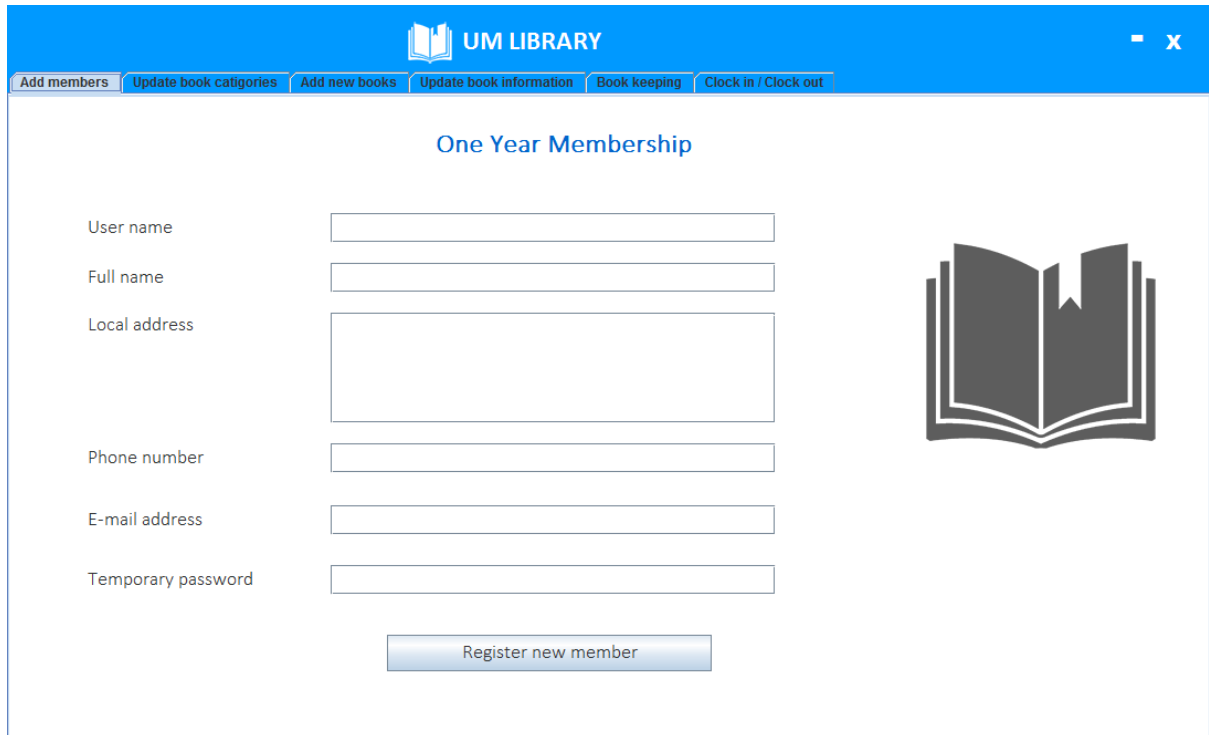
The last tab at Member frame is to renew membership. This tab will show the member his/her expiration date. We calculate this date using the date class that gives us the current date (the date from the computer clock) and we assumed that the library policy gives members a fixed period of one year membership, so we add 365 day from the current date to get the expiration date. The expiration date of every member is stored in member table in MySQL database, so



we just fetch the information from the table using SQL query statements. The renew button will enable the member to extend his membership for another one year. The calculation is the same.

Librarian frame:

When the librarian login with his account the librarian frame will open.

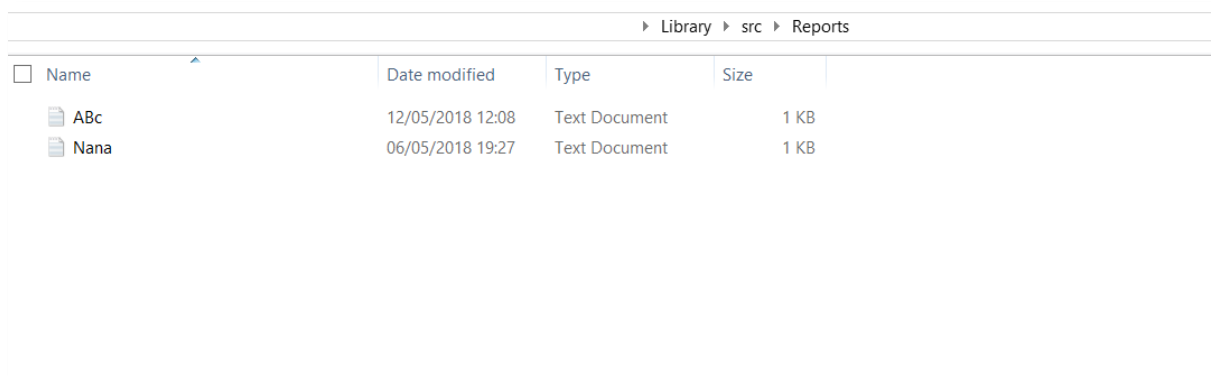


The screenshot shows a web application window titled "UM LIBRARY". The window has a blue header bar with the library's name and a close button. Below the header is a navigation bar with several tabs: "Add members", "Update book categories", "Add new books", "Update book information", "Book keeping", and "Clock in / Clock out". The "Add members" tab is currently selected. The main content area is titled "One Year Membership" and contains a registration form. The form has six input fields: "User name", "Full name", "Local address", "Phone number", "E-mail address", and "Temporary password". A "Register new member" button is located at the bottom of the form. To the right of the form is a large icon of an open book.

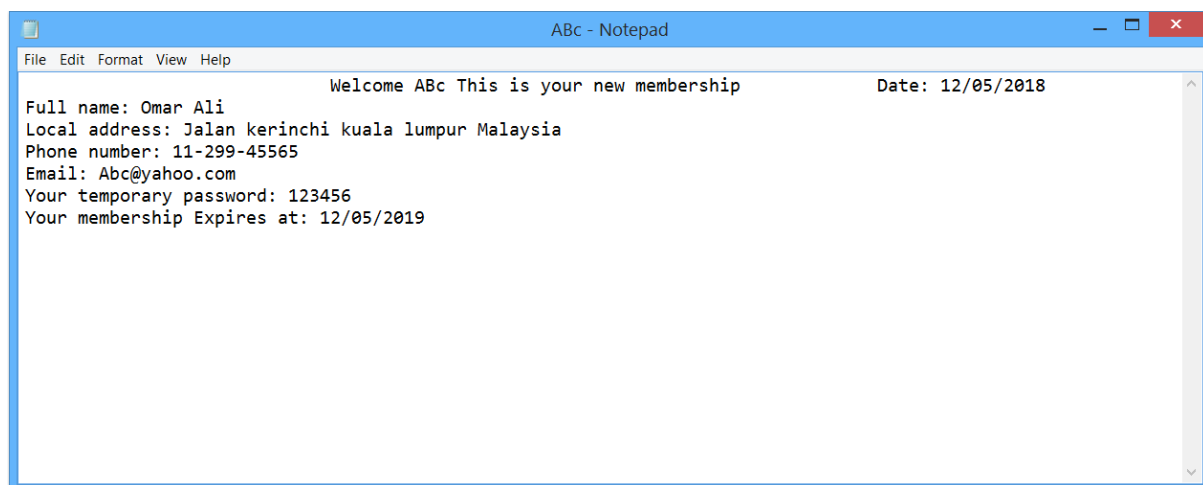
This frame contains so many tabs. This tab enable the librarian to register new members.

He/she type the new member information then press register. All the new information will be add to user information table in MySQL database. The insert SQL statement is used to do the insertion. Moreover, this frame will make the librarian make temporary password to the user then the member can login using this password and go to change it using the previously explained form. Therefore, a small report is created at the same time of registering the

member. This report is a text file saved at the same directory of the program itself.



Library > src > Reports			
<input type="checkbox"/> Name	Date modified	Type	Size
ABc	12/05/2018 12:08	Text Document	1 KB
Nana	06/05/2018 19:27	Text Document	1 KB



The purpose of this small report is to give the member printed information about his/her membership along with the temporary password for the first login process.

The screenshot shows a Java Swing window titled "UM LIBRARY" with a blue header bar. Below the header is a tabbed interface with six tabs: "Add members", "Update book categories" (which is selected), "Add new books", "Update book information", "Book keeping", and "Clock in / Clock out". The main content area of the window contains the following elements:

- A label "Choose catigory to Update" followed by a JComboBox with the text "Select catigory" and a dropdown arrow.
- A button labeled "Delete the selected catigory" to the right of the JComboBox.
- A label "New catigory Name" followed by a text input field.
- A button labeled "Update the selected catigory" to the right of the text input field.
- A button labeled "Insert new catigory" located below the "Update the selected catigory" button.

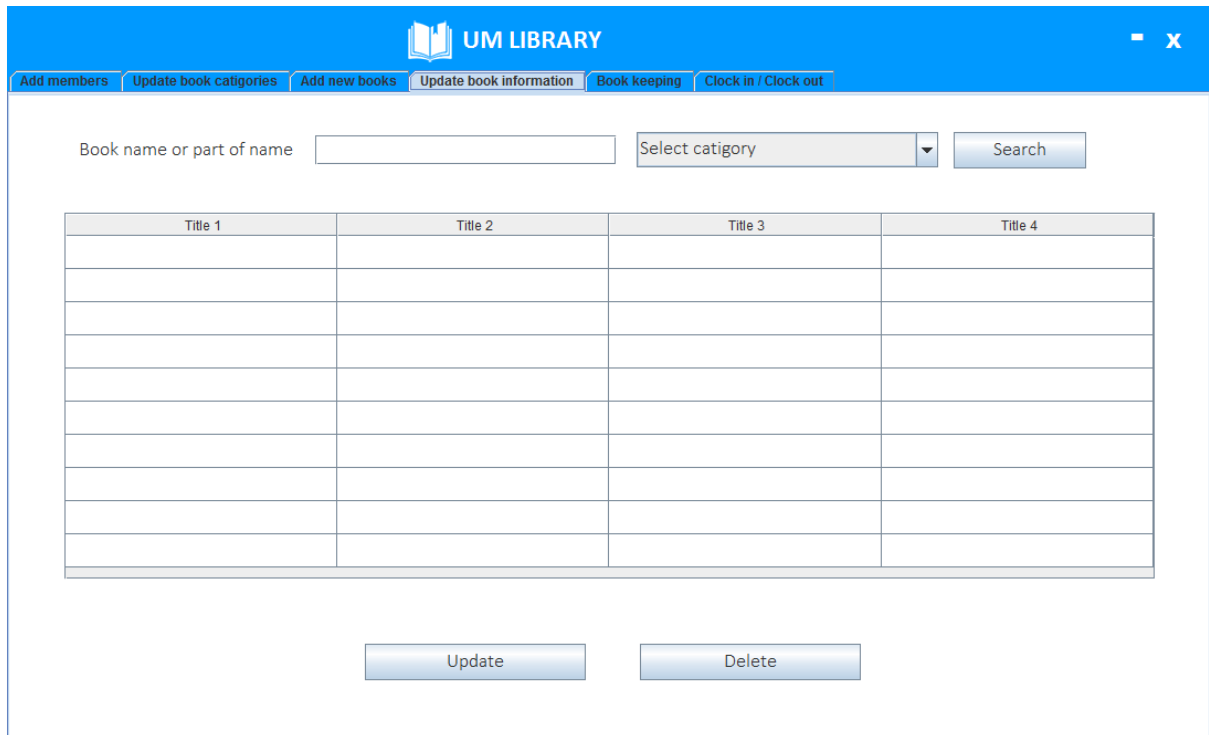
This tab of Librarian Jframe is change category. To delete the category the librarian has to choose which category he/she wants to delete and click delete button. We used delete SQL statement to achieve this process. To update the selected category the librarian need to select the category from the jcomboBox, and type the new name in the jTextField, then press update button. We used the update SQL statement to achieve that. Finally, to inset new category, the librarian only need to write the new name and click insert button. The insert SQL statement was used to achieve that.

The next tab is to insert new book to the library database. The librarian will chose the category to which the new books to be added to then write the book information is the fields provided in the table. The librarian is able to add up to 10 books at a time then click save button.

Book name	Author	Edition

Here we used the insert SQL statement inside a loop to do the insertion according the number of rows in the table. We put the condition that the first field (book name) must not be empty. so for example the librarian filled only 5 rows not the full 10 rows then only 5 rows will be added to database, because it will ignore the rows with empty book name. We will show that in action during the presentation day.

The next tab is to update book information

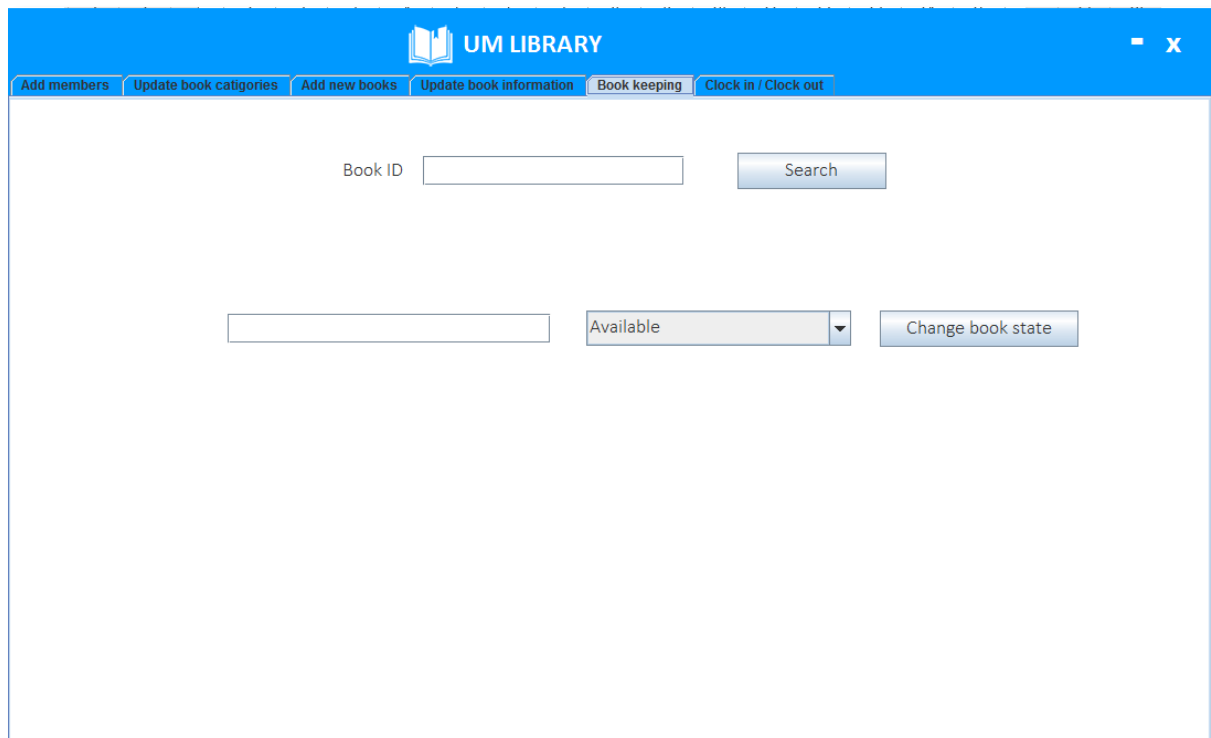


Book name or part of name Select category

Title 1	Title 2	Title 3	Title 4

In the frame the librarian will search for books that needs update or delete. We use the select SQL statement to fetch data from the table. If there is information that needs to update, the librarian will double click the target jTable cell and write the new information. After that he/she will click the update button to save the new information in books table in MySQL database. We used update SQL statement to do that. The same thing to delete the unwanted book. The librarian just need to select the book/s to delete them from books table in the MySQL database using delete SQL statement.

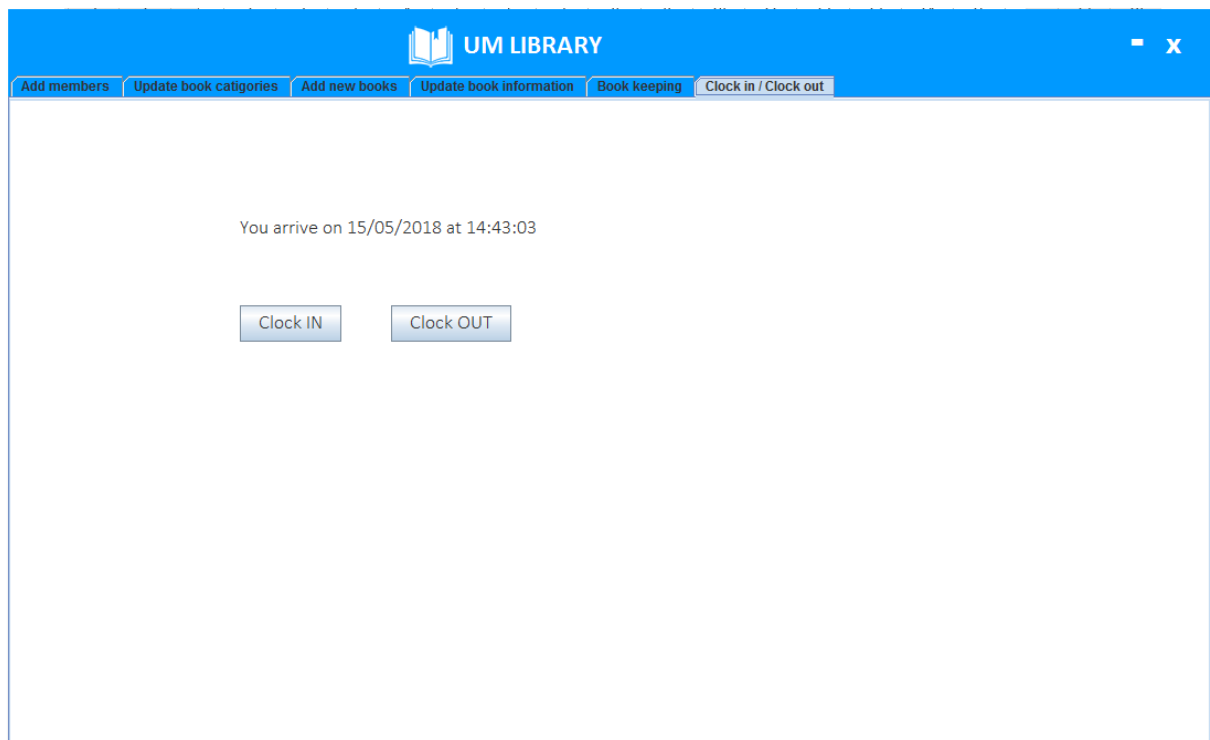
The next tab is to change the book status from borrowed to available when the member returns the book.



The screenshot displays the 'UM LIBRARY' application window. The title bar is blue with the library logo and name. Below the title bar is a navigation bar with several tabs: 'Add members', 'Update book categories', 'Add new books', 'Update book information', 'Book keeping' (which is the active tab), and 'Clock in / Clock out'. The main content area is white and contains a search form. It includes a text input field labeled 'Book ID', a 'Search' button, and a 'Change book state' button. A dropdown menu is positioned between the 'Book ID' field and the 'Change book state' button, currently showing the word 'Available'. There is also an empty text input field to the left of the dropdown menu.

The librarian will search using book ID, which in an library will be written in the book itself. This to make sure that he/she gets the exact book to change its state. Then from JComboBox the librarian will choose the state available then click the change book state button. this button use the update SQL statement to change the status field in books table from borrowed to available.


The final tab of librarian frame is the clock in clock out.



It is very simple. When librarian arrive, he clicks clock in button to register his/her attendance on the current time. We used date built in java class to get the current date and time.

The final JFrame is head librarian jframe:

This frame we make it as simple as possible, using only select SQL statement to fetch data from database depending on the choice in JComboBox. The head librarian will choose the field he/she wants to get information about and the information will be shown in a table

UM LIBRARY

General information


General library information

Librarian attendace

Search

Title 1	Title 2	Title 3	Title 4

The second tab also is very simple. It allows the head librarian to write his report based on the information he/she gets from the previous tab, then save his report in file.

UM LIBRARY

General information

Type a report

Save