ABSTRACT

The "Library Management System" project is a library management program for monitoring and controlling library transactions. This project will be built in Netbeans 8.2, and MySQL will be used to administer the database. This software primarily focuses on basic library functions, as well as some unique features such as user and administrative login capabilities. New users can quickly create a user account by filling out a registration form with their username and password. It also offers a feature that allows students to see a list of available books, a list of books issued, their issue date and return date, as well as request that the librarian add new books by filling out a book request form. A user will be able to update his or her account information, browse his or her profile, search for a certain book or find a book about a given topic, and locate the book. An administrator can maintain track on the entire system via administrative login. Admins will be able to register users, enter book information, add new books, view books issued by various users, and view student profiles. There will be a report option for users to recommend improvements to the library facility, which can then be examined by the administrators.

'Library Management System' is a windows application written for 32 /64bit windows operating system, designed to help users maintain and organize library. Our software is easy to use for both beginners and advanced users. It features a familiar and well thought-out, an attractive user interface.

Overall, the goal of this project is to provide a welcoming atmosphere for library visitors and staff in order to manage the library in the best possible way while reducing human labour. It can assist users in more successfully managing transactions or records while also saving time.

Software Platform:

• The project was developed using JavaSwing/ Core Java

• Netbeans 8.2

• MySQL server

Implemented features:

- **User Access:**

  Users can utilize this functionality to log in to the system. A user can access the system by entering his or her username and password. Valid users will be allowed to enter the system after adequate verification of their username and password. A username and password mismatch prevents access to the home page, and the user is prompted to re-enter his or her username and password. The student login will give them access to the library's general functions, such as searching, issuing, returning, and requesting new books. In addition, the user can read and change his profile information.

- **Administrative Access:**

  A system administrator can log in with their username and password utilizing this capability. After properly authenticating their login and password, admins will be allowed to visit the administrative home page. If an administrator's username and password do not match, they will be unable to access the system. Administrative login allows an administrator to perform tasks such as adding new books, inputting book details, changing book data, viewing student information, and so on. He has access to his profile and can make changes to it as well.

- **Latest User Enrolment:**

  This feature enables any institution member to create an account for himself. At the commencement of the program, this option will be offered. A new member must complete a registration form, which includes entering his name, I.D., department, phone number, username, and password. A new user can create an account for themselves after submitting proper information, and then he will be authorized to enter the system.

- **Add Book:**

  Admins are the only ones who can use this function. This feature allows an administrator to view and edit the list of books. Admins can also utilize this capability to add new books in response to user requests.

- **Explore Book:**

   This feature allows a user to search the library for a certain book. A book can be searched by,

   1. Title

   2. Author Name

   3. ISBN Number

   A user must choose one of the three search types and then enter a keyword. The system will then use the keyword to filter the book and display the filtered books in a tabular view.

- **Issue Book:**

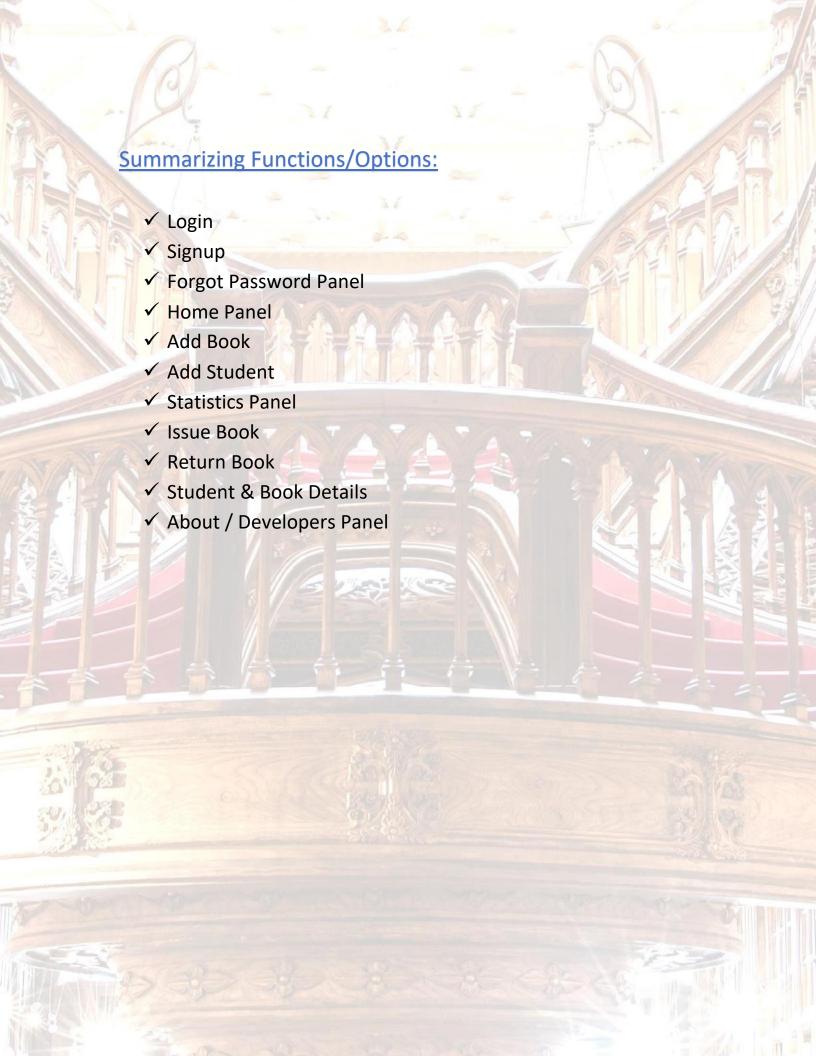   This feature allows a user to issue a specific book if the following conditions are met:

   1. The book is available in the library.

   2. The current user has not used up all of the available books.

   3. The book has not yet been issued by another member.

   If the prerequisites listed above are met, anyone can use this function to publish a book. This will update the issue information in the database and provide the user with information on the issue and return date.

- **Return Book:**

   This feature maintains track of the books that have been returned. Any book can be issued for a limited time by a user. The user must return the books he or she has been issued within that time frame. The user information database will be updated following the successful return of the provided book. If the book is not returned before the due date, the user will be charged a penalty.

Summarizing Functions/Options:

- ✓ Login
- ✓ Signup
- ✓ Forgot Password Panel
- ✓ Home Panel
- ✓ Add Book
- ✓ Add Student
- ✓ Statistics Panel
- ✓ Issue Book
- ✓ Return Book
- ✓ Student & Book Details
- ✓ About / Developers Panel

FUTURE UPDATES:

- **Reassign Book:**

  This function allows the user to postpone the return of his or her book without incurring any penalties. However, every book can be reissued a maximum of two times before being required to return it within the return date.

- **Rate Book:**

  After finishing a book, a user can rate it using this function. This will result in a total user rating for a book. This will assist a new reader in selecting a specific book or in comparing comparable types of literature.

- **Report:**

  This option allows a user to make suggestions for improving the library's services or to request that a new book be imported into the library. The admins can then review the suggestions and take appropriate action based on user demand.

- **Notification System:**

  With the help of this option, the user will get SMS or Mail about new books collection. Also he/she will be reminded about the time they have to return their books. They will also receive the history of their total book belongings.

We assign an identification to each of the primary functional criteria after we've identified them for future reference and verification. Following table shows the list:

Table 01: Identifier and priority for software requirements

#	Requirement	Priority
F1	User Access	**DONE**
F2	Administrative Access	**DONE**
F3	Latest User Enrolment	**DONE**
F4	Add Book	**DONE**
F5	Explore Book	**DONE**
F6	Issue Book	**DONE**
F7	Return Book	**DONE**
F8	Reassign Book	*Will be updated*
F9	Rate Book	*Will be updated*
F10	Report	*Will be updated*
F11	Notification System	*Will be updated*