

Software Engineering Lab
Implementation Report I - Build I

Library Book Management App

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1. Basic Information

This Library management app is an Android app developed in Android Studio with IntelliJ IDEA. The programming language used is Java. The front end is developed using xml file format. Java Sdk and Android APIs are extensively used for backend development. SQLite database is used for storing user data and book information. Prerequisite for running this app is Android Studio 3.0 with API 27.

2. Functional Requirements (Implemented)

FRID	NAME	Description
1	User Login/Signup window	If the user is a first time user of the application and has not registered, he/she should be able to do that by clicking on the signup button.
2	Login window	The user will have to enter the username and password in this window upon whose verification he will be directed to the profile window.
3	Registration window	The user can enter his/her details which include name, email-id and password.
4	Logged in popup	A message saying email-id verified and the user is logged in would be displayed.
5	Error message	If the user enters any details which do not match the predefined format an error message would be displayed
6	Password Strength	The password set by the user should contain 1 special character, 1 number and should be more than 6 characters long. If the password set does not satisfy any of these a message would be displayed.
7	Logout button	The student can terminate the session by clicking this button and to access the system again he/she will have to again go through the login window.
8	Admin login	The admin will have a login username and password using which he can access the full system.

9	Add book info to the database	On arrival of new books admin should update the book info database by storing the books according to their name, author name or isbn.
10	User details window	The admin has access to all the registered student details but he is not allowed to change any personal details of the user.
11	Book details window	The admin can see the details of all the books in the database.
12	Profile Page	The user will be redirected to a profile page after a successful login where he can search books in the library database.
13	Help Button	It will assist the user while registering for the application by giving hints on how to fill the form.

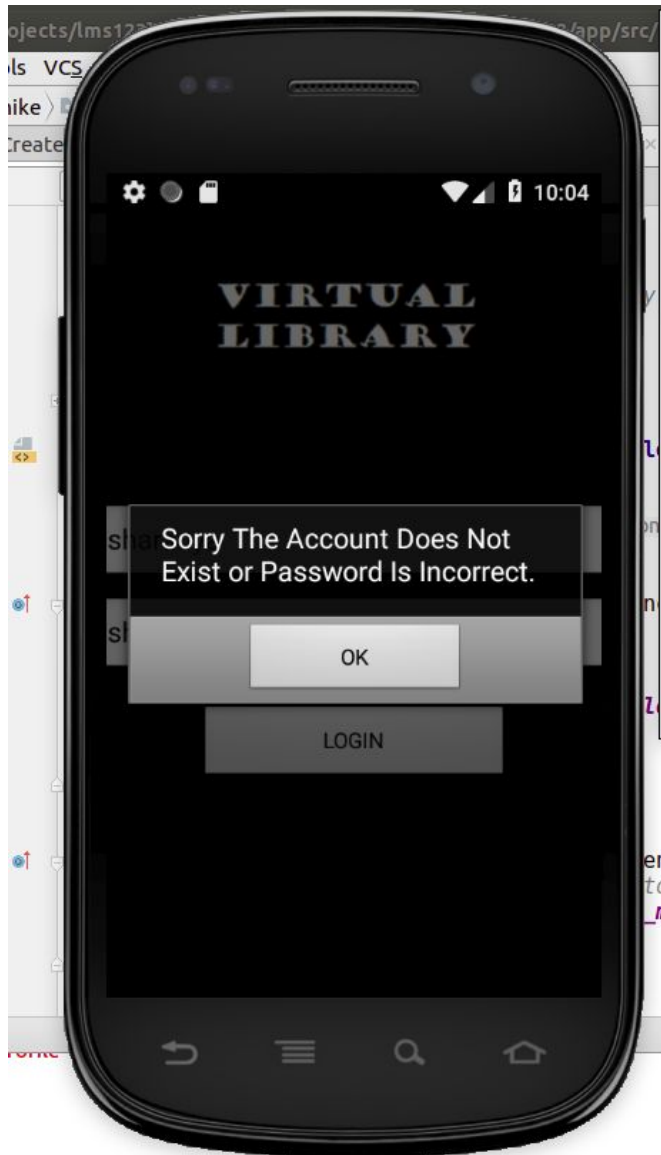
3. Functional Requirements (Not Implemented)

FRID	NAME	Description	Why Not Implemented in this Build?
1	Search window	The search window should have detailed search options like search for a book by author name/ book name/ publications or any of these or all of these.	The search function requires complete knowledge of database and we are still learning it.
2	Book Details	If the details of the book requested by the user are present in the book information database then these should be displayed.	Search function needs to be implemented before displaying book details according to the book queried by the user.
3	Bookmark	If the book requested by the student is currently unavailable then a bookmark option should be provided upon clicking which the book name is stored under the bookmarked books.	Bookmark can also be done only after search and book details part is completed.

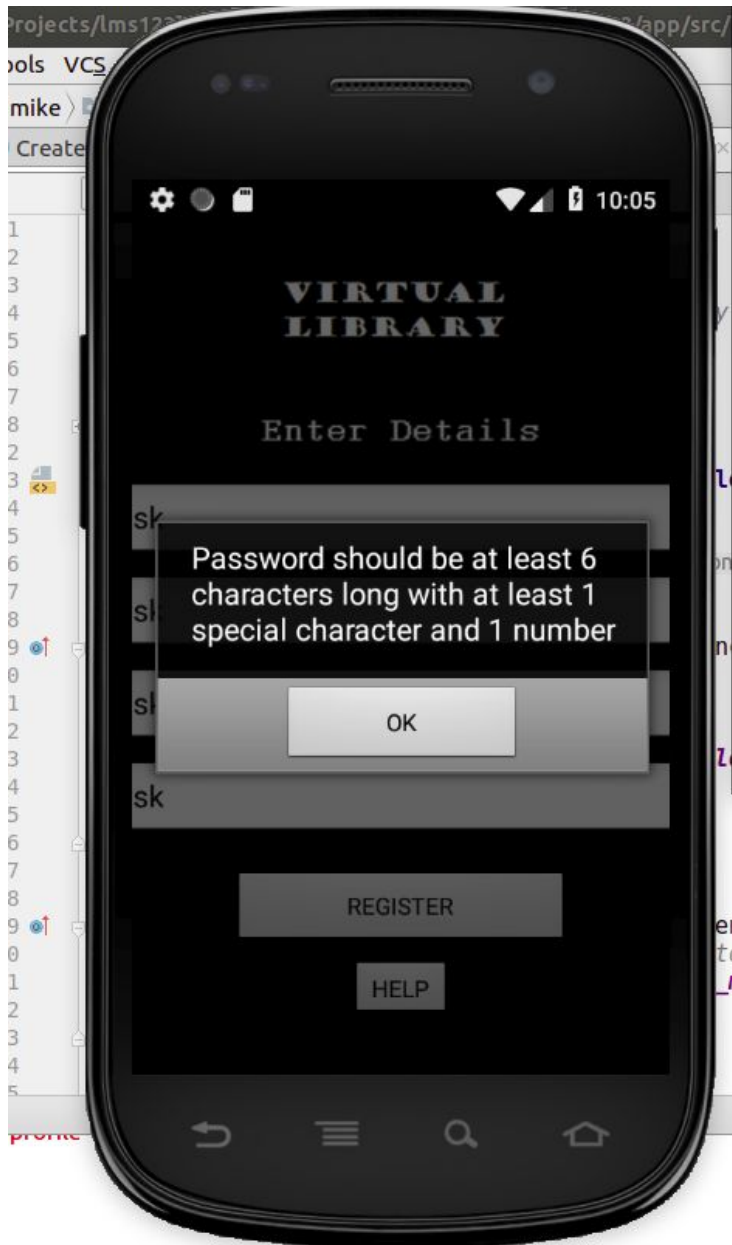
4	Notification button	A button which would display all the important notifications like if the book bookmarked by the student becomes available or if the fine date is approaching etc.	Notification button could have been made but before we implement bookmark feature it isn't of any use.
5	Issue Book	If the book count searched by the student is greater than one then student can click on the issue button which would decrease the book count in the database by one and the book details will be updated under the books issued column on the user profile. The student can go and collect the book from the library anytime.	Only after the user searches the book and the book details are displayed we could issue a book from the database to the user and decrement the count of the book in the database for further queries.
6	Fine	If the book has not been renewed within given period of time an algorithm to increment the fine each day according to the number of books issued will be calculated and displayed in the user profile.	This could also be done only after search, issue functionalities are implemented.

4. Screenshots

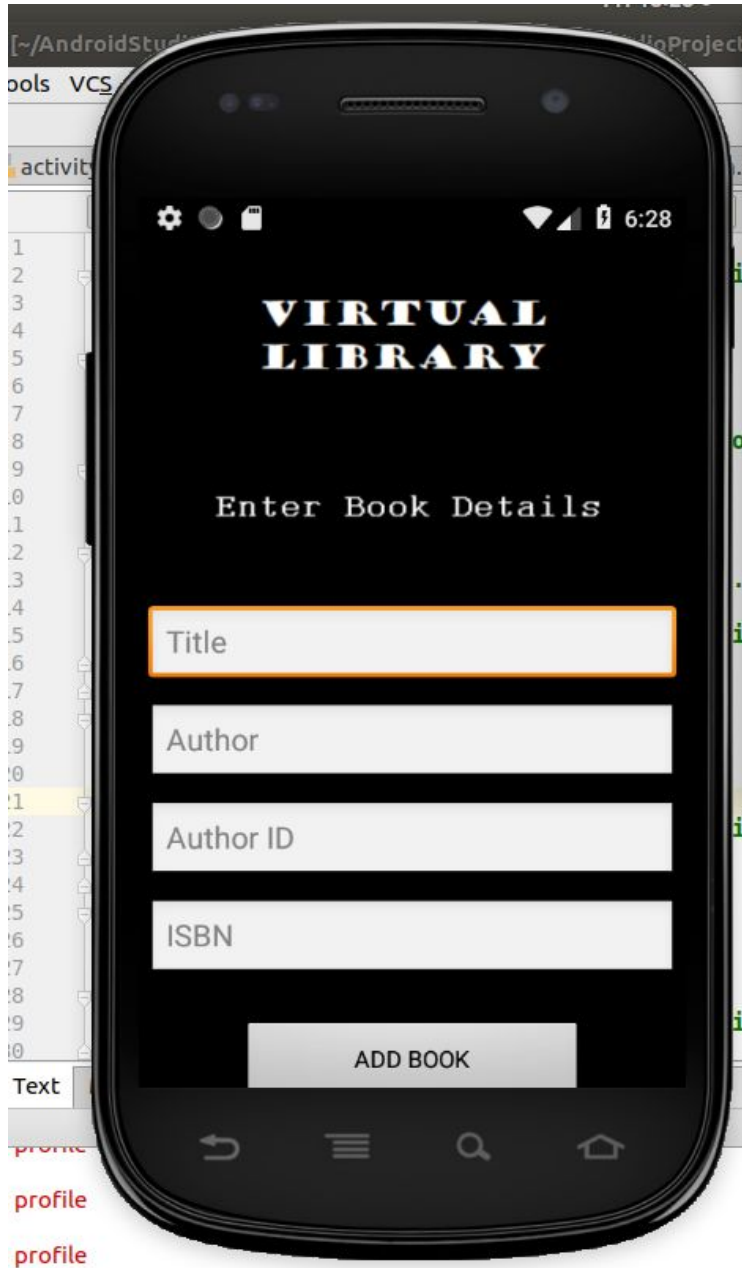
4.1. Account does not exist or wrong password



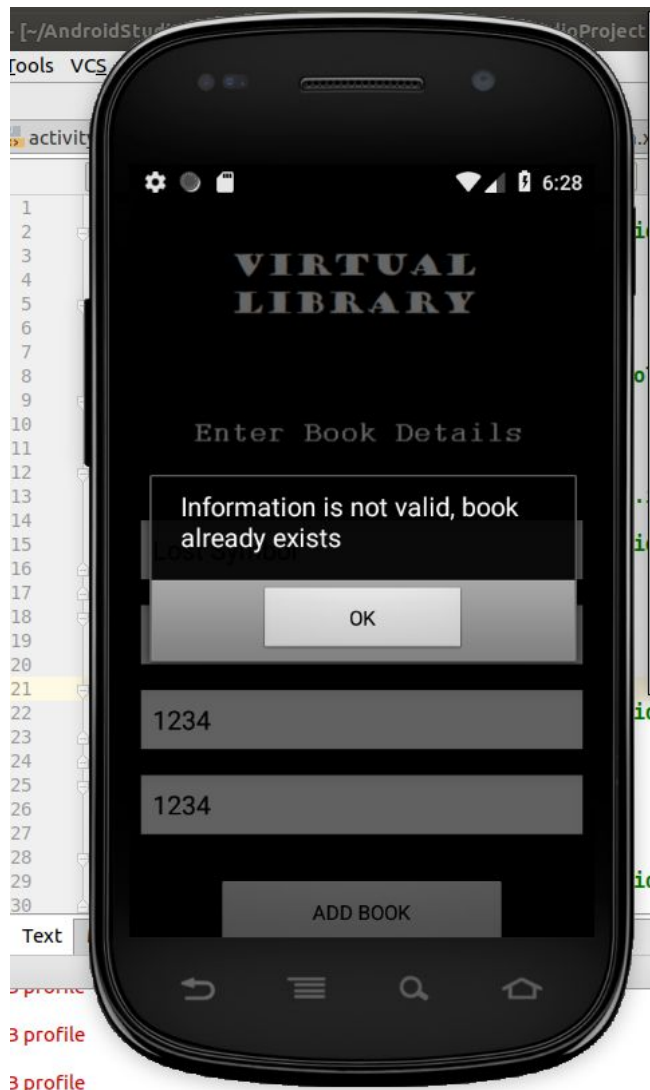
4.2. Password strength



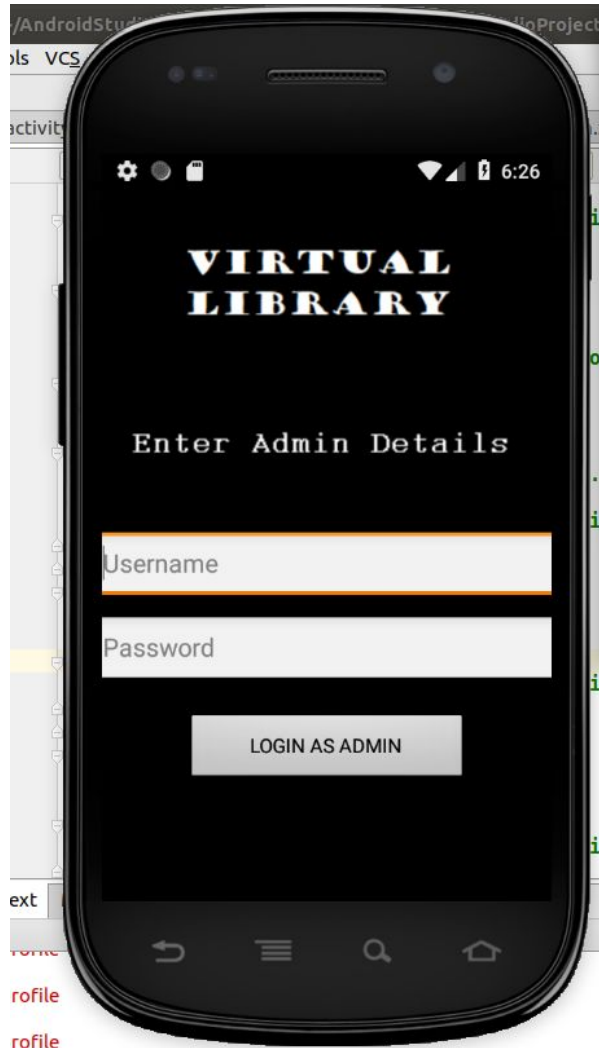
4.3. Add book



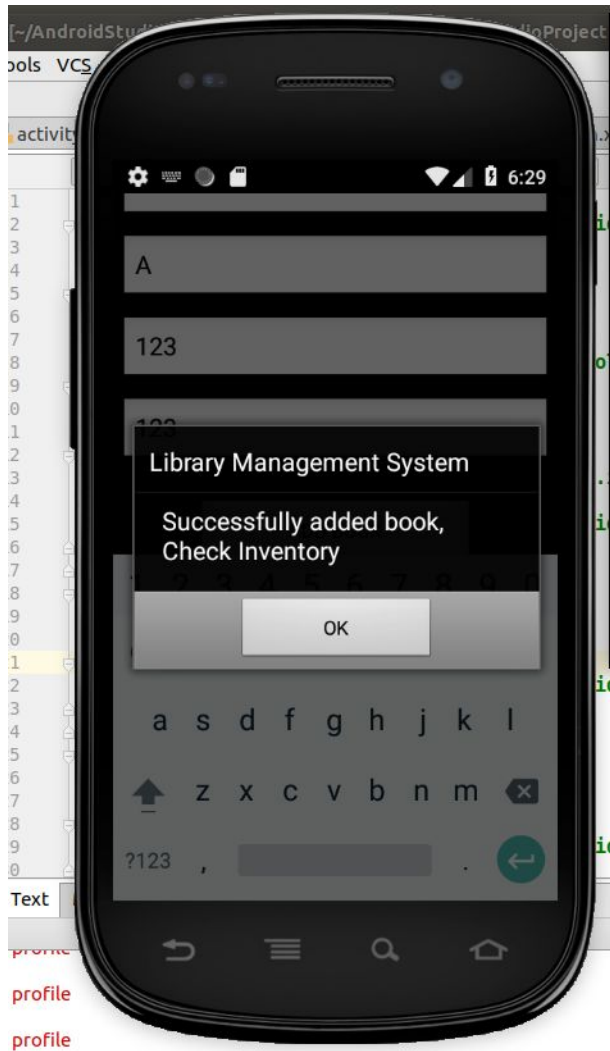
4.4 Adding already added book



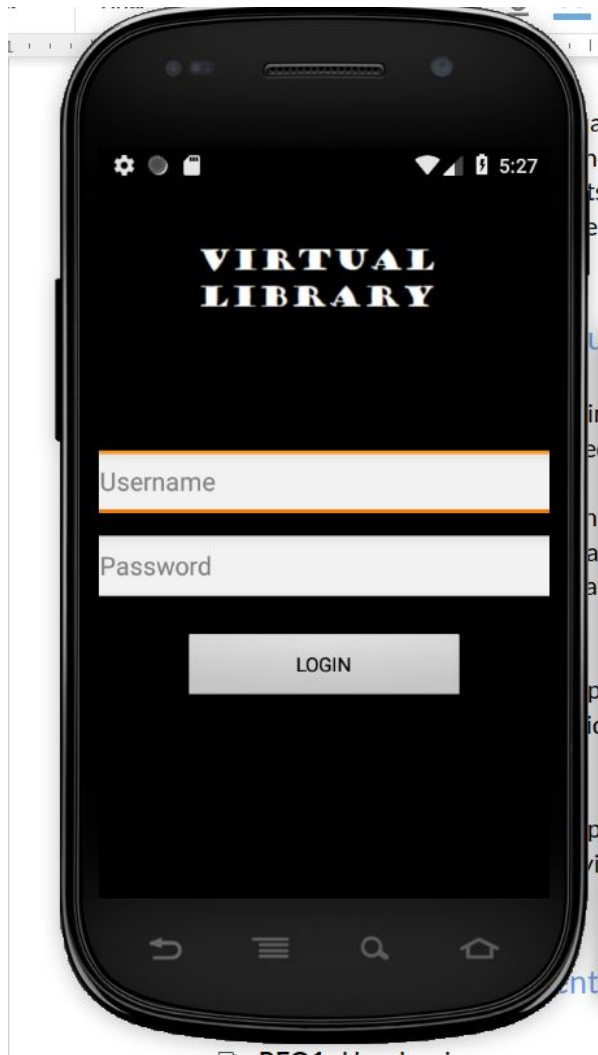
4.5 Admin login



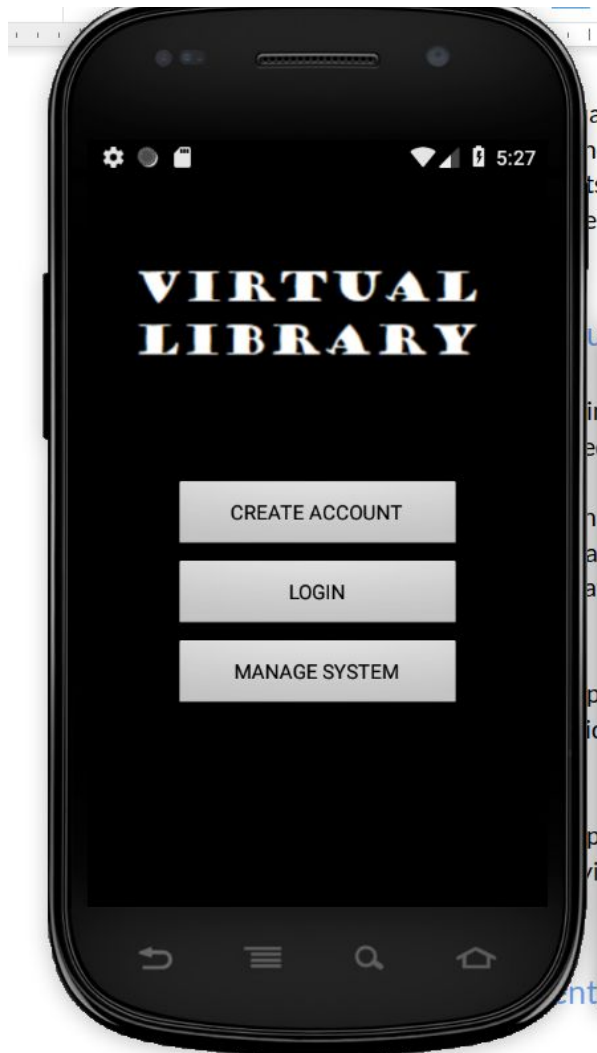
4.6 Book successfully added



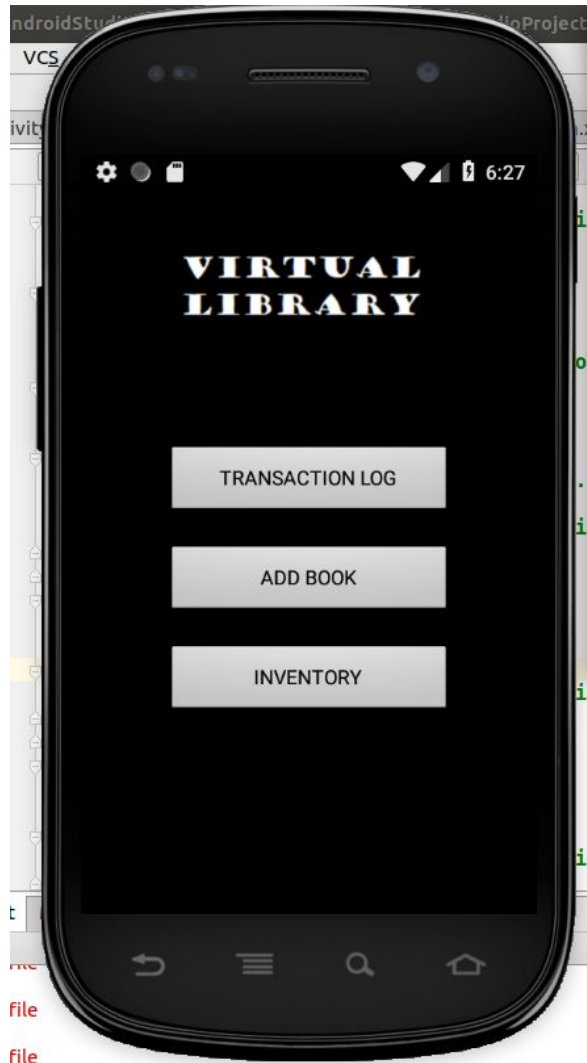
4.7 Login page



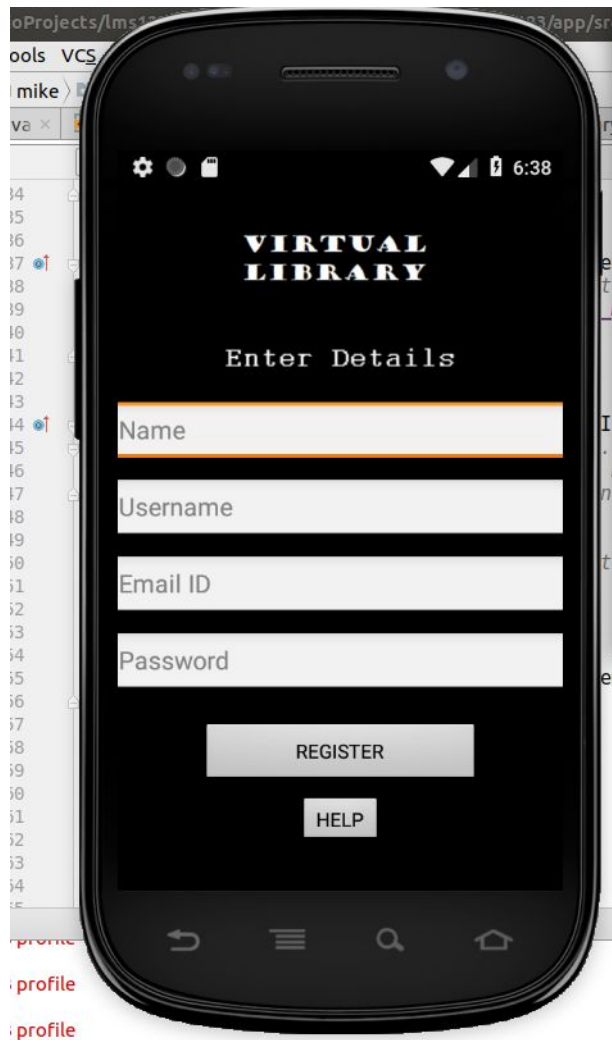
4.8 Main page



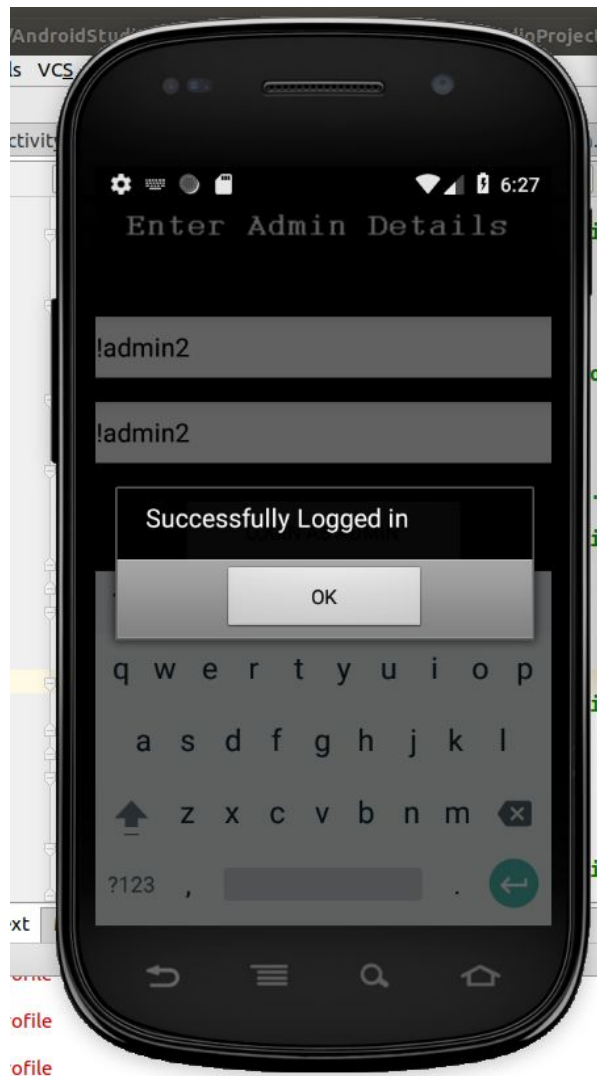
4.9 Manage system



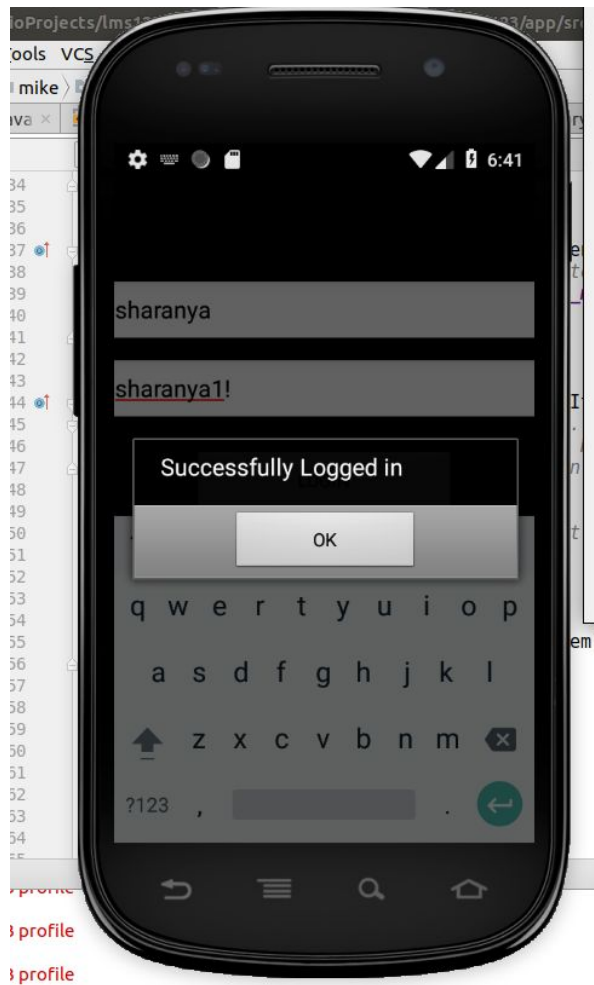
4.10 Registration



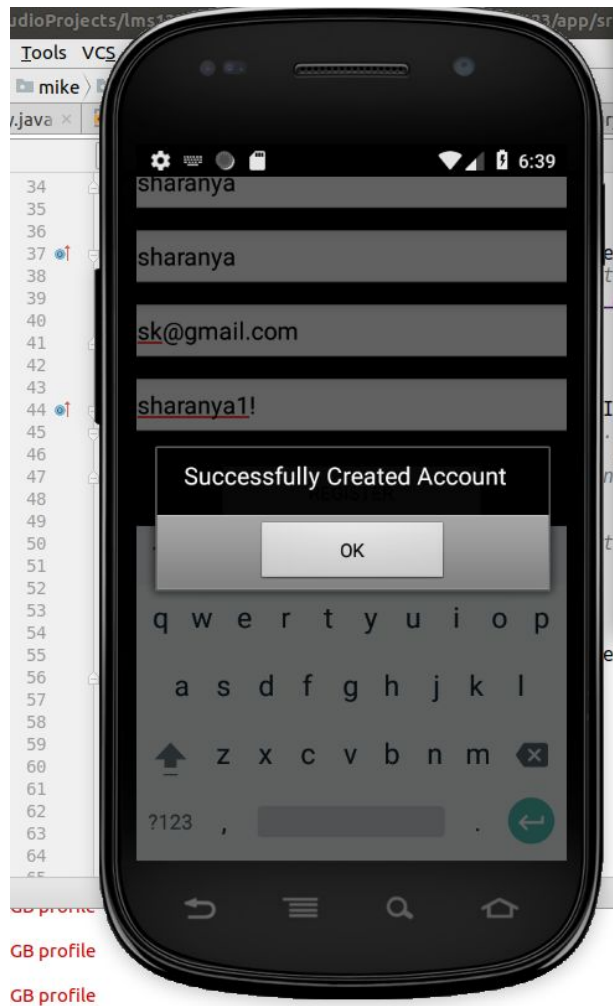
4.11 Successful admin login



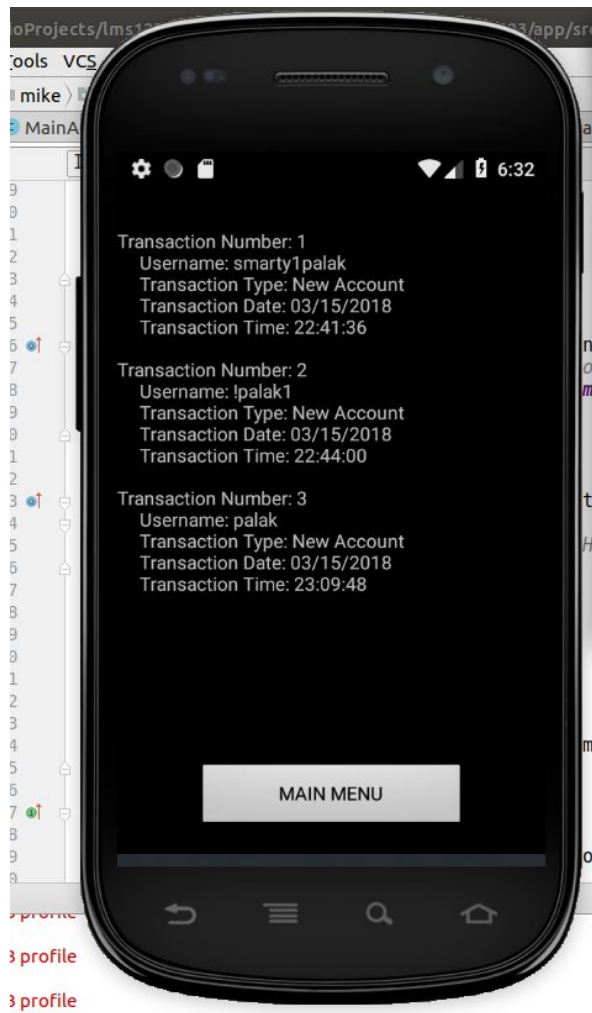
4.12 Successful user login



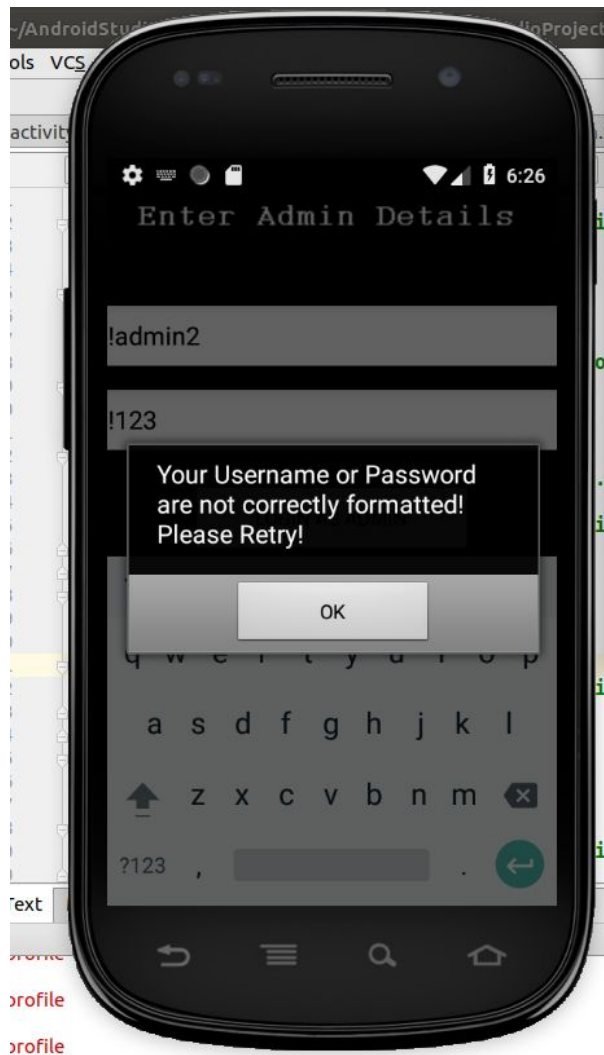
4.13 Successful user registration



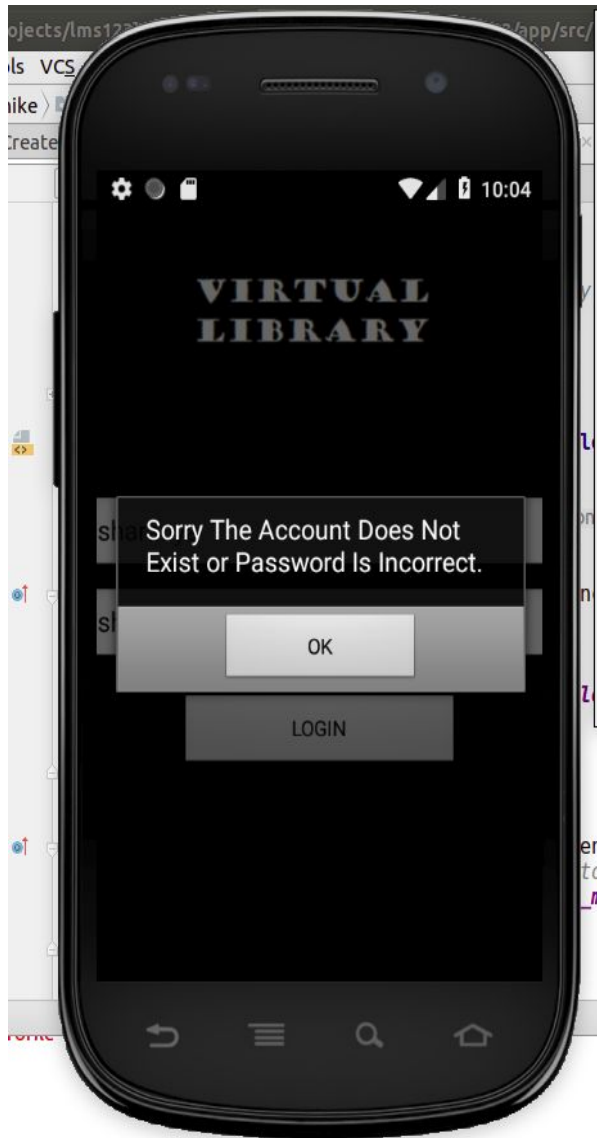
4.14 User details



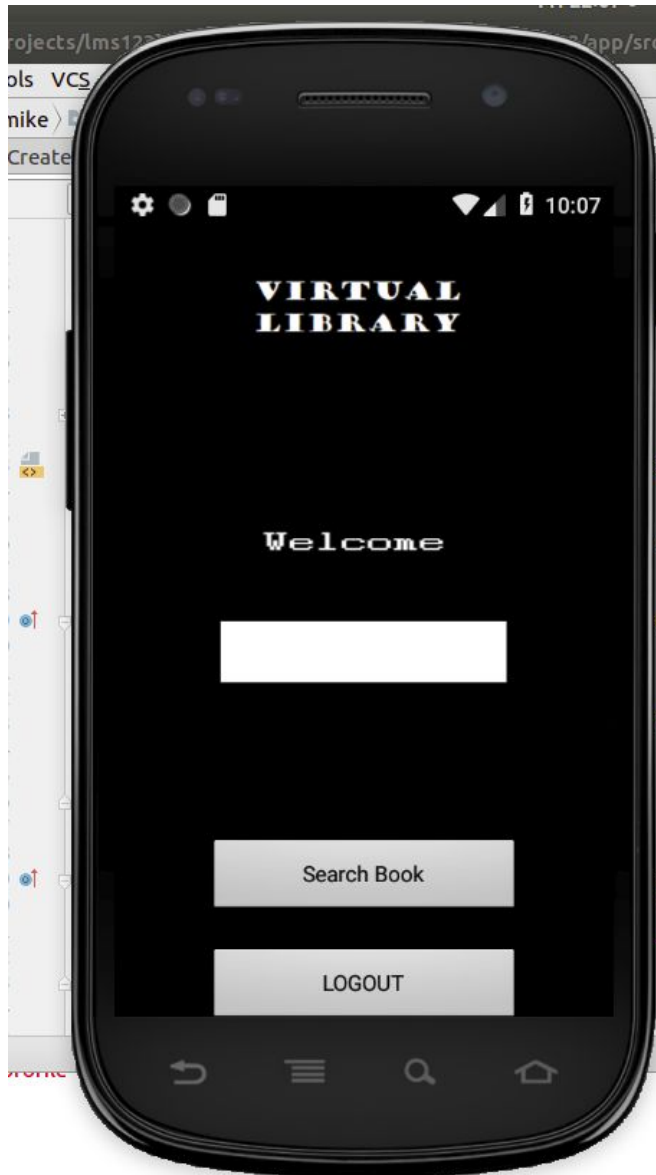
4.15 Wrong admin login



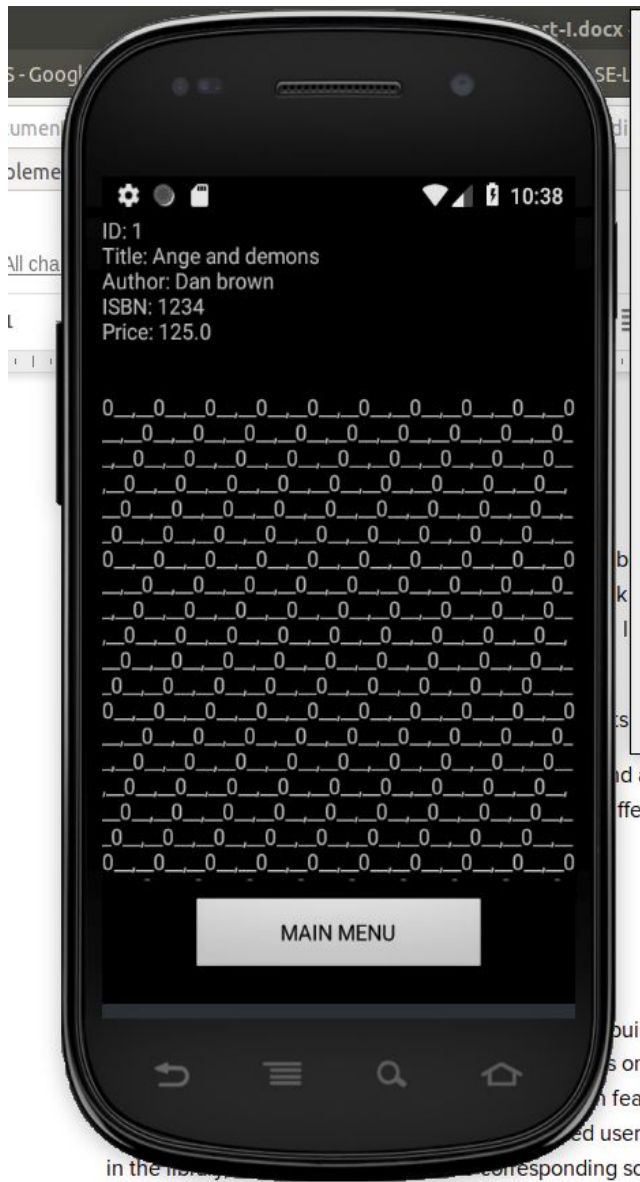
4.16 Wrong user login



4.17 Profile Page

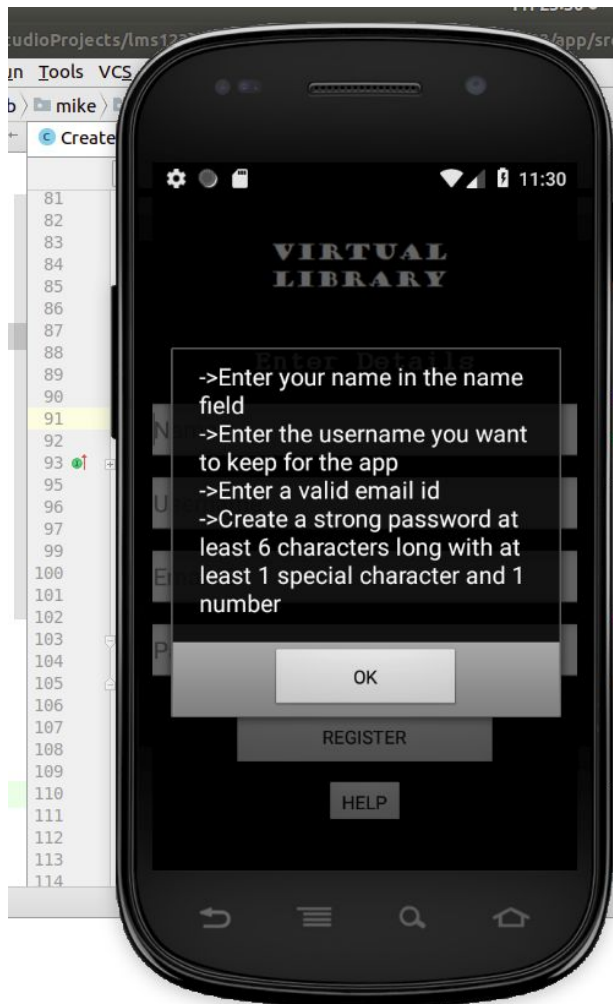


4.18 Inventory

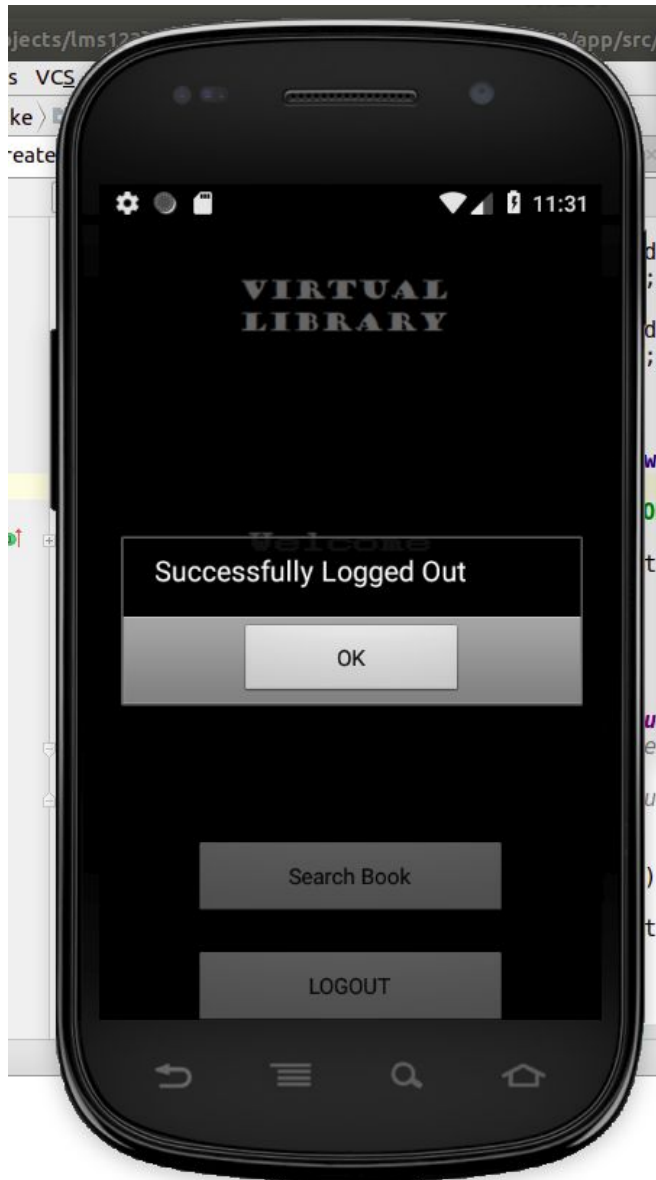




4.19 Help Button



4.20 Logout Button



5. Plan for next Build/Release

In Build 2.0, the following functional requirements will be added:

- User will be able to see the list of books available in the database.
- User will be able to search for the specific book he/she wants.
- User will be able to issue book from the virtual library. That book will then become unavailable in the database.
- User will be able to bookmark any particular book which he is interested in issuing but is currently unavailable in the library.
- Notification tab so that users can get notified about their bookmarked books becoming available.
- Calculation and display of fine for each user.

In Build 2.0, the following non-functional requirements will be added:

- User interface will be made more appealing and attractive.
- The app will be made more compatible with different devices.
- The application will be made more robust and secure so that its working doesn't get affected by other apps running on the device.

6. Summary

This report focuses on the work done during the first build of the “LIBRARY BOOK MANAGEMENT APP”. In the first build more focus was on implementing the admin features as compared to the student features. Most of the admin features like logging in as admin, adding the books to the book database, viewing the registered users, viewing the inventory of books present in the library, are implemented and the corresponding screenshots for each functionality are added to the report. Student functionalities as of now are restricted to just registering and logging in with a profile page where user can search for the required books in the book database. The search feature is yet to be implemented along with the bookmark and fine calculation feature. The design of the application also looks quite simple as of now which would be improved in the coming build versions so as to make it look more attractive to the user. The current user interface is user friendly and interactive but we still look forward to improve it more.



