XIE Library - An Android Based Application

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Abstract— In this paper, we present an application of the XIE Library, using Android OS. This application help the college students to view all the books available in the college library, which is not practically possible. This system has major features as the Admin Login, User login, User Sign Up, books search and issue; edit user account, due date notification and online fine paying. Database of student's details and book details are created on Parse-Server, which is an open source Backend-as-a-Service (BaaS). The database is cloud server based which is available only to the Admin over Parse Dashboard.

Index terms— Android OS, BaaS, Database, Parse Dashboard, Parse-Server.

1. INTRODUCTION

Traditionally, library systems are implemented manually which are very time consuming and tedious. The Library usually contains the information in physically or in a digitized form. XIE Library application store large number of books and student data. The application keeps the track of all the information about the books in library like total number of books available, book issued, book return date and as well as keeps the complete details of the registered members. It targets Android devices, as android is most commonly used operating system in college. The database of student details and book details are stored on Parse-Server, which is an open source cloud based server. These databases are accessible only by the Admins and are updated automatically every time the user login.

2. LITERATURE SURVAY

There are several application and software developed for library management. Some of the work done before helped us in developing our applications are mentioned below.

2.1 Milind Deshkar worked on "Android based Mobile Library System" in which user can reserve books online for urgency purpose and will receive notification afterwards by using push messages to mobile users about current updates by "Google Cloud Messaging" service[1]

2.2 Sangsuree Vasupongayya worked on "Open Source Library Management System Software" which have features like user account, a security module, an alert system feature, an accounting system for billing and producing statistical reports. [2]

2.3 Prasanna Pillai worked on "Android Application for Library Automation", in which he created a software using Virtual Private Network between student and librarian. Server side was scripted using PHP and client side was android application. [3]

2.4 R .Dinesh implemented "Library Access System Smartphone Application using Android" where he developed android application, which enables user to suggest new books to the librarian. Due date notification deadline. He created database-using SQLite. [4]

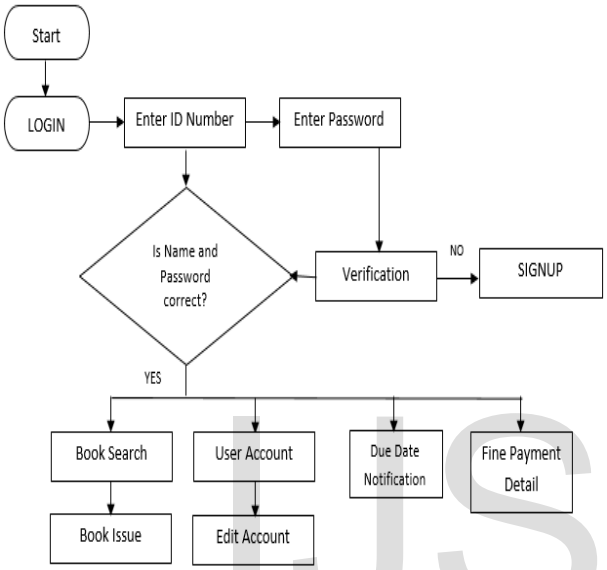
2.5 Anisha Lalwani made "VESIT Library- An Android based Application", in which he created database using Laravel Framework to provide more security against hacking. [5]

3. PROPOSED METHOD

3.1 USER MODULE

The login module is the homepage of this application. The User has to enter registered ID number and password. If these two fields are correct, next page for book search and issue is displayed. User can also view their account, they can edit their account. Due-date of the borrowed books from a library is intimated by the application as a notification prior to the deadline. Penalty for overdue library book is also shown in the application. If user details entered are

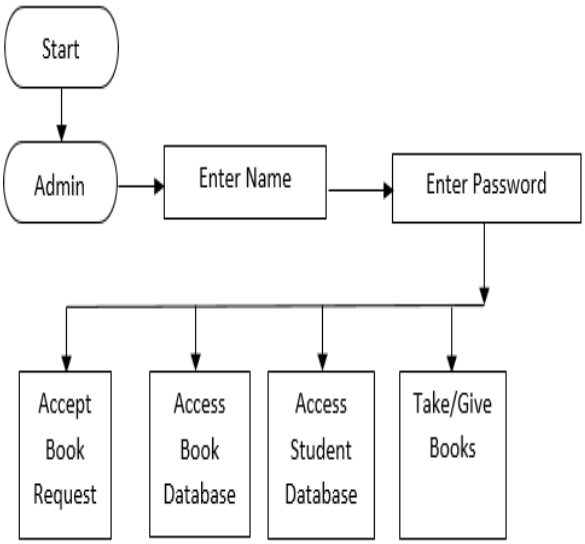
incorrect, pop up message is displayed as "Invalid Username" or "Invalid Password". The flowchart below shows working of Login Page. The Sign Up module is for new user. User has to fill all their personal data. User full name, Emil ID, Mobile number, ID card number, Password are the details required for registration. User has to confirm their password. If password and confirm password fields matches, pop up message comes as "Successful Login". Otherwise, user has to re-enter passwords.



Flowchart 3.1 User Module

3.2 ADMIN MODULE

The Admin has separate Login option in the application. Admin login is denied to other users. Admin has to enter his name and password. Once he login, he can view student and book database. According, he will update the databases. Admin receives request from users for issuing book. If book is available then admin will accept the request and user has to visit library only to take the book. Similarly, the Admin will select return option when user visit library to return the book.



Flowchart 3.2 Admin Module

4. IMPLEMENTATION PHASE

4.1 LOG IN

At first, user has install the application in his Android device. The Login module is for the user who already has account in XIE Library. The login module is added for an authentication purpose. If the user enters wrong details, he will not be allowed to enter the application. A pop up message is displayed will be as "Invalid user". So new user has to select Signup option, which is given at the bottom of the login page. This module has ID Number, password, show password fields. Once all these fields are filled with correct data, the user is directed to next module.

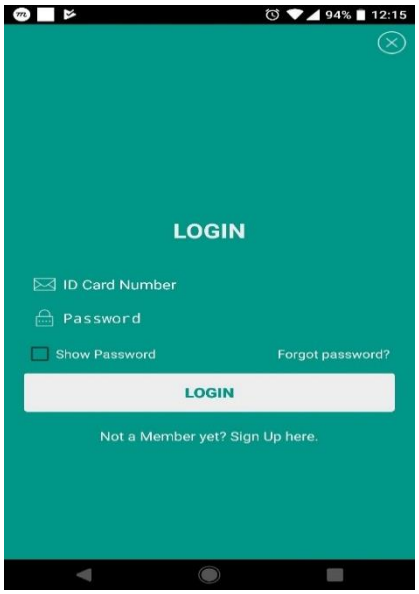


Fig 4.1 LOGIN PAGE

4.2 SIGN UP

If the user is new to the application, he should enter all the appropriate fields mentioned in student signup page in order to get permanent registration in the application. Once if all the required details are filled, the user need to agree to the terms and conditions of the application. After this, user has to select option SIGN UP that stores all the information in the database for next time Login Authentication.

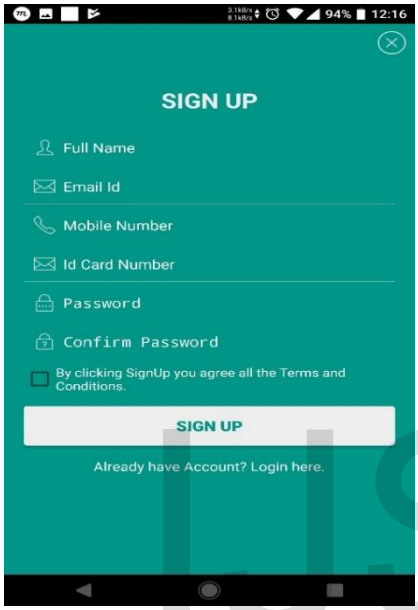


Fig. 4.2 SIGNUP PAGE

5. ADVANTAGES

The main aim of the application is to make available all details of the books to students without them manually searching book in the XIE Library. This application in android allow students to access XIE library app through android Smart phone instead of computers. Student are notified of due date of the book a day before the return date. Student can view their account to check previous history of book issued from library. They can also check the fine deducted from their account. The Computers available in the Library can be replaced with the Android Device such as Tablets, phones that saves capital investment.

6. FUTURE SCOPE

Additional fields like view user account, edit user profile, email notification of account can be implemented. Creating an option of ADMIN login can be done so that library ADMIN will can update book database every time when student return the book. Paying online fine for due dates of the book need to be added.

7. CONCLUSION

In this paper, we have presented XIE Library an Android Application that uses cloud-based server called Parse Server. The student registration database is updated automatically. This database is accessible only by the Admin. All fields required for registration and login has validations. User can successfully login into account.

8. ACKNOWLEDGEMENT

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9. REFERENCES

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