Integration of Library Automation to a Mobile Application with User Friendly Interface - AUELIB APP

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ABSTRACT

The study mainly emphasis on the automation process of Library information system in Anurag University, Hyderabad, Telangana. In today's scenario Library automation is a major task for engineering college libraries, with the introduction of advance technologies in field of library and information science, major automation areas and outlines the various factors needed to be considered by the librarians while doing automation work for their respective libraries. Now a day's modern libraries are equipped with traditional resources like books magazines reports etc. with the advent of information technology they are also exaggerated with digital resources like e-journals, online research publications and web resources. The study mainly focuses on the use of automation process of libraries in various schools of Anurag University for seamless dissemination of the information. The Information Communication Technology has brought rapid changes in the performance of libraries and its services. It helps libraries in creating database of their own collections and creation them accessible for easy access to users within and outside the libraries through various networks and mobile applications. We have been using library management software in central library; successfully completed automation of journals, books, and magazines. Digitization of libraries reduces the unending work and preserves time and brings precision and speed & keeps material safe. It increases the efficiency in technical processing of library materials and amends the efficiency of library administration and management processes. The Anurag University central library gives much importance to the library automation services integrated with a mobile application for an effective resource is the need of hour. The integrated approach of the mobile application will ease the process to the needy user in a short time and cost effective way to get the right information in right time at right place. The objective of the case study is understand and implement the integrated library automation process in the departments with a user friendly AUELIB mobile application for ease of accessing information.

KEYWORDS: Library automation process, Colleges, central library, AUELIB, Mobile Application.

INTRODUCTION

A Library Management System is software built to ease the functions involved in the library. Libraries depend on library management systems to manage asset collections as well as relationships with their members. Library automation processes help libraries keep the track of the journals, books & Magazines and their returns, member's subscriptions and their profiles. Library automation involves maintaining the database for entering new books and recording books that have been borrowed by the students and staff with their respective due dates. The main aim of Anurag University central library is to provide access the proper information, to the right users in as possible as short time. In an era of information explosion, due to growing demands of the user and reduction of financial resources, library is not able to get all the study materials on needs. The only way to overcome the problem is of resources sharing thorough networking and automation. The development of library services in engineering college libraries to cover advances of branch of knowledge include planning for acquisition, use of information management techniques, use of new technologies and regular updating with the new additions etc. The Anurag University central library is partially automated and it is must using advance technologies for users for getting the right information in right time. Libraries have been a trusted source of information. Going to a library and picking a book was fun those days. Technology has brought significant changes to libraries. These days Libraries function differently due to the digitalization. Access to information is in real-time and universal. Traditional libraries are forced to re-work on their workflow. Library management has evolved and improved to a stage never imaged in the pre-cyber era. To meet the growing demands of the digital generation, it is essential for every library to invest in efficient manner.

The literature review of related studies is an essential part of any research or any basis of investigation. The related studies are a crucial aspect of the planning of any study. A literature review is an account of previously published material by experts and researchers in the particular area of interest. It focuses the author an opportunity to refer background research publications to provide strengths and weaknesses of the research. Library automation system provides an overall perspective of the functions and the package is user friendly integrated mobile application and menu driven (Azeez, 2004; Kumar, 2015)

There need to be special efforts to be made during the design and development stage to ensure data integrity and security. This pilot project was design as an in-house project in Anurag University using Visual Basic as front end and MS Access as back end, under Windows environment an Android Application for Mobile app. Finally to make mobile application software for easy access of the information to the needy student, researchers and faculty of Anurag University.

Earlier studies of researchers examined the effective usage of web online public access catalogue (Web-OPAC) and mobile applications in engineering college libraries in other states (Mulla et.al.,2010, Mulla &Chandrasekhar, 2009,; Ghosh, 2016). Understanding the importance of knowing various search facilities available on effective use of integrated library software packages and their services, the engineering college libraries have started using advanced information technology in providing services to the student and staff. The authors have highlighted the Indian library automation which is the need of the hour in the developing scientific society.

There are many studies on library automation in the developed countries which are undertaken to ease the functions of library (Mulla et.al, 2010; de smet, 2009). The automation process gives a status symbol and advancement of technological applications in the corporate world. The software packages used by the various engineering college libraries, and opinions of the librarians on the performance of the different modules of the software they have used

to understand the developments and overcome the present lacunae. As per Gbadamosi et.al, the importance of evolution of the college, the planning process, functions and the implementation of library automation processes such as e-library will definitely help in achieving the goal of automation (Gbadamosi et.al, 2012). The author emphasized at different phases to which the project was divided and provided a detailed overview of how each phase was designed and executed which can help librarians make decisions about automation and implementation of the e-library.

The operational challenges encountered during the implementation of the process are also highlighted and solutions are offered. Other researchers focused on the status of library automation and its constraints faced by libraries (Bachav, 2016; Mishra et.al, 2015). The case study found that college libraries are still in the stage of infancy with regard to automation and all of the libraries use local commercial available software's. The case study on library automation may help in understanding and overcoming the problems and recommending the probable solutions that would enhance the efficient use of the ICTs enabling libraries to provide better services to the students and staff of Anurag University and also to be a role model in library automation process in the state of golden Telangana. The case study is limited to only Anurag University, Library automation software being used at central library, AU, Telangana.

Electronic Access: AU central library has being providing access to various full text to ejournals using high band width local area network (LAN). We are also uploading important ejournals in our central library OPAC and our institution has subscribed 7 e-databases through VTU consortium such as Elsevier, Springer, ASCE, Pro-Quest, T&F online, IEEE, Science Direct and Dspace.

AU - LIBRARY AUTOMATION

Automation process started way back in the year 2016 and completed in 2019, our library is fully automated and functional. AU-An Library Automation Software is an automation process developed by in house computer science department for converting a traditional library to e- library. The automation process is in progress for the entire central library of the university. As a pilot project for Information access we have developed an android mobile application with integration to the different departments and institutes of Anurag University for ease of students to get the first hand information on a single click. This will enable the student, staff and other researchers to access the right information at right time.
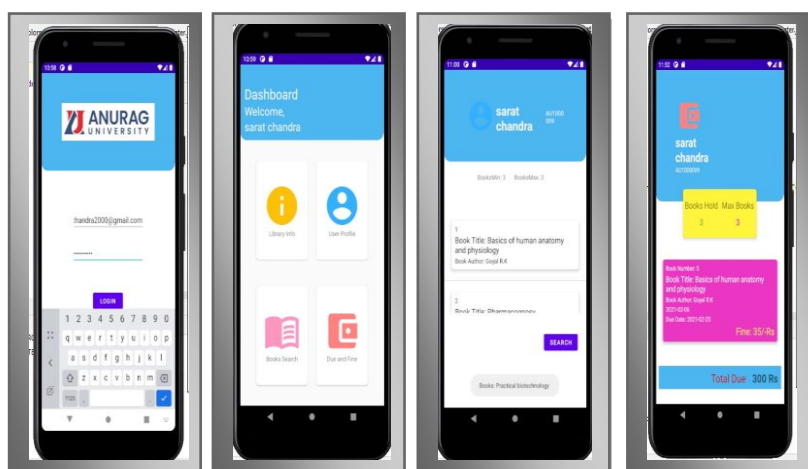

Figure 1: AUELIB Login Credentials and other features application showing the process flow.

The AUELIB App is an exclusive mobile app designed and developed for the libraries using Anurag University ILS for automating their library system. The mobile app acts as a plug-in and fetching the content from existing database of Anurag University Library and user can use OPAC login credentials to login mobile app. The mobile apps used

generally focus on brief interactions of fifteen minutes or less, AUELIB app enables the quick view of essential information such as – Issued books, reading history, fine and item search along push notification for every library transaction.

How to register Libraries to AUELIB

College Code	:	admin
Card Number	:	library
Password	:	librarian

How to update registered Libraries to AUELIB

College Code	:	admin
Card Number	:	admin email ID
Password	:	admin password

How to register students to make use of AUELIB

College Code	:	Assigned by Library
Card Number	:	OPAC Student Login
Password	:	OPAC Student Password

AUELIB-APP-An Android Application

As a college or university student you would have times when all you have around you is your Mobile, you are far away from your books, and yet you would like to study or know the availability of the desired book intended to borrow. Wouldn't it be nice to have an app which serves this purpose, and which also gives you access to useful information such as Books on hold, Quota of Books Left, Searching by Author or Title etc., We have developed an Anurag University Library App (AUELIB) just for this purpose!

This app contains over 11140 plus standard undergraduate textbooks across several fields of study including medicine, pharmacy, science, humanities, business, engineering, etc.
The dynamic information content delivered by the app is updated automatically every week, and in some cases on a daily basis at least.

Through this app you have a direct connectivity to dynamic Library websites, RSS feeds, articles, e-books for both information and entertainment.

AUELIB APP is available at Google Play (Android) and App Store (iPhone) and or as directed elsewhere in the email or text message containing this advert.

This library app is here for you to finally have your books organized - in a library of books that is on your phone and therefore always with you.

Have a list of your books packed in one library:
(Or add them manually).
Rate them; add a description and much more!
Features:
- Book Library
- Listing
- Searching library
- Fine
- Wish list

- Reminders for lent books
- Exporting to Student Database
- Backups

We appreciate your Feedback!

Librarian

Note: With this library app, you cannot read or download books. It will help you organize the books you own physically by adding their information automatically. The Library App helps you to search and retrieve the availability of the books in the physical Library.

Additional Information	
Updated	March 24, 2021
Size	1.3m
Installs	1
Current version	1.1.1
Requires android	6.0 and up
Content rating	Everyone
Learn more	In-app products

Permissions	
View details Report	Flag as in appropriate
Offered by	Dr. A. P. Rao
Technical associate and developer Visit website	libinfo@auelib.com
Privacy Policy	Venkatapur, Ghatkesar Hyderabad- 500088 Telangana, India

Figure 2: Key features of Mobile Application Package-AUE-LIB

AU-An Library Automation Software is a automation process developed by in house with computer science department for converting an traditional library to e- library. The automation process in progress for the entire central library of the institute. (Figure 1 & 2).

AUE-LIB Management Software includes

1. Technical processing
2. Circulation
3. Acquisitions
4. Serials Management
5. OPAC
6. Administration
7. Queries and Windows

TECHNICAL PROCESSING

The module has several features which are important for the user to understand in order to make effective use of the functionalities in processing various types of document materials (books, Journals serials, theses, etc.) and newer forms such as CDROMs, Web pages and video materials. The screen below shows the main menu options that are available in this module.

The menu options will help us to accomplish technical processing related tasks using functions of Circulation Module. The Circulation module of the AUE-LIB provides service for UG students, PG students, research scholars and faculty members, staff of the college to access the necessary information, resources and their responses. The Check-Out or Issue of Items Check-out function is a basic function in any circulation control module and will ensures that the items held by the library are securely and accurately checked out or issued out. The Acquisitions Module of AUELIB acquisitions module has all the futures that are typically required in libraries of engineering colleges. The Serial Management is an important function in all engineering libraries in India, the serials module in any library automation software is usually the most complicated in terms of development effort. The functionality in this module requires that the software must deal with several idiosyncrasies of the serial as a form of publication. Equally, there are issues related to the cataloguing of newly subscribed Library Automation i.e., serial titles, registration, display of serials holdings in the online public access catalogue (OPAC).

The receipt of regular serials issues as well as that of supplements and indexes. Managing the subscriptions to serial titles in such a way that there is no interruption in the supplies is another important requirement. The binding of serials issues when the volume for a particular serial title has been fully received and ensuring that these are sent to binder are other tasks that the module must help library staff to accomplish. Open public access catalogue (OPAC) contains over 60,000 bibliographic records, with more records being added on a daily basis. In our AUELIB we have uploaded question papers, e-books, e-journals, faculty publications, CD ROMS etc. to our central library. Users can able to access them 24×7 via library site of Anurag University. The administration module of AUELIB allows the librarian to configure the software to suit the application environment of the library and so that it reflects the policies of the library in respect of its various operations. The major problems faced by the students now a day are

1. To see whether the book they are looking for is available in the library or not.
2. If the book is available, is it available for the issue?
3. If the book is not available, then by when it will be.

The main idea behind developing a subscription based mobile app for saving the student's time by knowing the details of the availability of the required information in library by a single click. The basic approach I kept in mind was to make the process of using library services a hassle free and interactive experience. The process of looking for the apps should be as easy as someone searching for a topic on Google.

The app should contain features needed to the users such as book, journal availability. This will not only change the outlook of library in the way of issuing the books. By upgrading the library automations services and integration of the automated services to the mobile app as a customized solution to the engineering colleges will definitely benefit the student and faculty fraternity.

CLASS DIAGRAM-AUE-LIB MANAGEMENT MOBILE APPLICATION (Figure 3):

The main classes of our AUELIB Management Application

1. Library: The central part of the organization for which this software has been designed. It has attributes like 'Name' to distinguish it from any other libraries and 'Address' to describe its location.

2. Book: The basic building block of the system. Every book will have ISBN, Title, Subject, Publishers, etc. 3. Book Item: Any book can have multiple copies, each copy will be considered a book item in our system. Each book item will have a unique barcode.

4. Account: We will have two types of accounts in the system, one will be a general member, and the other will be a librarian.

5. Library Card: Each library user will be issued a library card, which will be used to identify users while issuing or returning books.

6. Book Reservation: Responsible for managing reservations against book items.

7. Book Lending: Manage the checking-out of book items.

8. Catalog: Catalogs contain list of books sorted on certain criteria. Our system will support searching through four catalogs: Title, Author, Subject, and Publish-date.

9. Fine: This class will be responsible for calculating and collecting fines from library members.

10. Author: This class will encapsulate a book author.

11. Rack: Books will be placed on racks. Each rack will be identified by a rack number and will have a location identifier to describe the physical location of the rack in the library.

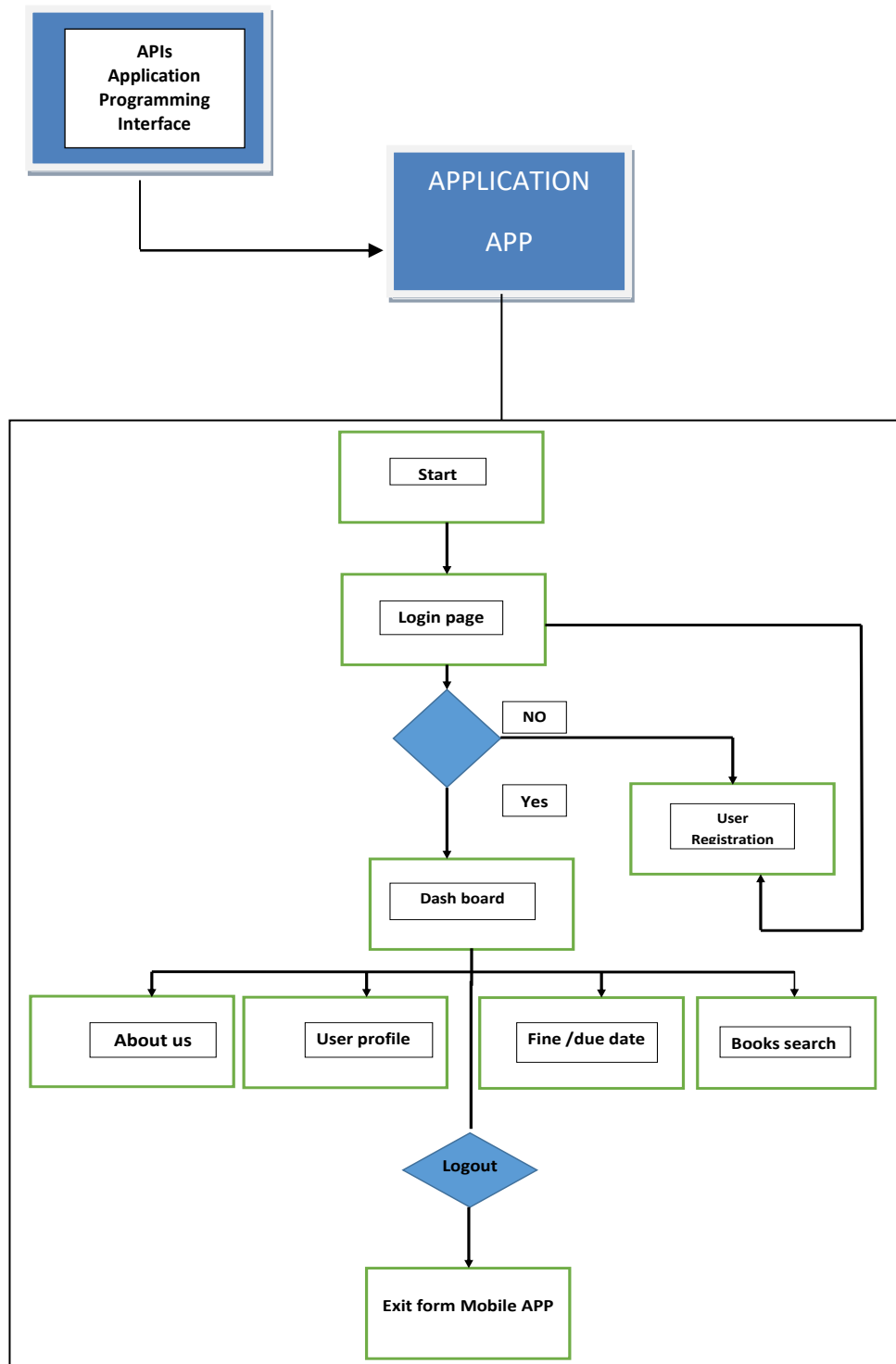12. Notification: This class will take care of sending notifications to library members.

Figure: 3: Block diagram of the functioning of the Mobile Application

AUE-LIB Mobile App features

1. To view the books available in the library, with the number of copies available.

2. To view a brief description of the books.

3. To Bookmark option of the required book or journal.

4. E-Library Collection of journals and E-books issued by the library.

5. Notifications if the due date is near or a book previously unavailable becomes available, etc.

6. An option to pay the due amount left to the library.

7. Options to categorize the search for books.

8. Option to download e-books and journals on the mobile app.

CONCLUSION

AUE-LIB automation services are very much needed in libraries for the ease of information required by the users. Librarians need to have a well integrated and sophisticated automation strategy for library automation. The AU central library gives much importance to the library automation services integrated with a mobile application for an effective library services is the need of hour. Utilization of Information Technology in present libraries is optimistic to gain right information at the right time in the right place and at the right cost. Information Technology helps to progress the rank of the library and it condense the work load of the library professions. The integrated approach of the mobile application AUE-LIB app developed will ease the process to the needy user in a short time and cost effective way. In the pandemic situation the students can access the information of library in hand by using android application which is thought to be an appropriate use for shaping the future generation.

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