

A SURVEY ON DEVELOPMENT OF ANDROID APP FOR COLLEGE LIBRARY

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Abstract: There is an emerging influence in the use of mobile technology in libraries day by day; mobile apps have a big role in learning, teaching, and research etc. The innovation of computer has shown such a notable number of parts mostly the educational sector. An Android-based Library Management System has been developed to handle all the library activities including arrangement of materials, quick and easy access, and reference etc. An android mobile application for Library Management gives an effective resolution for institutions & other educational, corporate organizations to come up with different utility provisions to the community. The application system includes various features, which supports the information of custodians to manage different library functions by using computerized environment that are highly powerful and can document and track different operations like accessioning, advance-booking and listing of different library users. The major task is to cultivate an android mobile application for library management, consisting of resources accessible in an efficient and structured arrangement and assist every consumer to access applicable data faster and effortlessly while providing an easy access to the library electronically.

Keywords – Android Application, Voice Search, Online Payment, Database.

I. INTRODUCTION

In the college campus, the library is a very important component. From there, one can borrow books, perform research, browse through magazines and study in a quiet environment. Library is a hub of information and its sources which is made available for borrowing or reference to a particular group of people. Hence we have developed a project known as android app for college library which helps to access various sources of information and also helps in efficient management of the college library. By the help of this app, the admin can login and check the book volumes, the number of books which have been issued and returned, the number of students present in the library etc. Supposedly if a user wants to issue a book of their choice, they can look it up on the app and on availability, they can reserve it for a few hours by searching for the book in the library database. Following which, the response will be delivered to the user about the obtainability of the book. If the book is shown as accessible, the user can know the number of books available so as to reserve it accordingly. To make the whole process more convenient, voice based search is also available. This whole system is more effective and dynamic as compared to the traditional methods as it provides rapid distribution and recovery of information and better client service with the use of current technology. The term 'library automation' means to computerize library maintenance operations. The advancement & innovation of a mobile-phone based library management system offers a comprehensive resolution aimed at organizations and universities to integrate and introduce dedicated services and functions to the users. The library management system, is an instrument that assist the guardian of the information to manage and maintain various library processes by making use of powerful computerized systems that are capable of tracking and keeping a record of various library activities like accessioning, loaning and registering the library users. In comparison to public libraries, university libraries are well equipped, have great infrastructure and have a substantially large collection of books on science and engineering where the readers get scope for acquiring vast knowledge on the subject matter. Even though there are pre-existing software tools, most of them are not proper user interactive and have some limitation for

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accessing the books. Library Management System, is modest to medium in size and helps the librarians to administer the library using an automatic technique in which they can register several transactions like borrowing book and return, latest additions and new user additions. This system additionally comprises book and student maintenance modules, which keeps and records track of various activities like the number of students utilizing the library, description of books available. This system also guarantees no loss of book or details of a member which is a feature collective with non-computerized systems. As an add-on, the library management system has a report module. If supposedly the user is an administrator, he or she can generate accounts such as list of registered students, list of books available, reports of return and issue which can help the librarian to manage work more efficiently as compared to non-computerized library. Certain system modules should be analysed closely as they are the system's foundation. Without these modules, the system is futile in functioning. Admin login, staff login, student login, public access and search book are among these modules. The admin (in a few cases, the librarian or staff of the library) can monitor the entire system using the admin login. Additionally student and staff can access the system's resources via the staff and student login, which can be used correspondently with the user's login. Before being granted access to the system administrators, students and employees must first authenticate themselves. Other elements on the system, on the other hand, should allow commoners who are not given permission to gain access some of the systems resources. While predicting development of the management system after alternative perspective, it can be classified into two main parts namely, the frontend and the backend. The frontend is the network where every user of the system can login and approach the system while the backend of the system is the database where all the books and other materials of the system including user's login username and password are stored. Implementing voice based search helps the librarian to keep track of library materials in a more efficient manner, saves time and also enhances the search function. It also makes it easy for the librarian to oversee the process of allocating and paying for books. Multiple advantages of using such a system is that it is simpler and easier to operate, enables mobile access, available at any time at any location, update and browse library materials online, includes function to search and add, lowers overhead, saves time and lowers library operating costs. The application is versatile which means that it can be used in any educational institution as well as in offices with some minor modifications. An additional feature is that it is possible to cancel a reservation for a previously booked book. The system also has a status page where all users can see the books they have borrowed, their due dates, and the penalties that the user has accrued.

II. LITERATURE SURVEY

Dr. P. G. Kuppusamy et al.. Proposed a strategy and execution of an android based mobile library management system which lessens human task and provision to ingress to information resources in a library anywhere at any time. This android application which is created using Android Studio and Firebase helps in the digitalization of the traditional library functions and related activities. The software is easy to use for the user which has an attractive interface.[1]. R. Dinesh et al.. Proposed a library access system using an android application which aims to create a method to give the public an opportunity to enter the library more conveniently and access the library database for information. The application also eases the process of accessing the library for the admin and users to find the necessary information without computers or librarians. The limitations were that the library admin should refurbish the details of the books and users manually and only Android users are able to access. [2]. C. Srujana et al.. Proposed a system, exercising MATLAB based on development of RFID in which library management is done by a rapidly advancing technology called Radio Frequency Identification (RFID), which allows productivity and convenience, This system helps the librarians to efficiently manage books in the library. RFID technology is very versatile in many real time applications and provides a very intelligent. This method is complicated compared to android.[3]. Julian Araujo et al.. presented a modelling method which follows a hierarchical way to analyze the availability of management of library digitally which resulted in the digital library implementation in cloud computing which employs different redundancy policies, from the proposed paper it can be concluded that it can improve library availability using efficient cloud management.[4]. Engr. Liaquat Ali Rahoo and Prof. Dr. Mukhtiar Ali Unar developed a system to automate library services, this system satisfied all objectives by monitoring clients and resources they manage by employing a library staff. This study found out that the library information system shown more noteworthy improvement in use and service of library facilities. The implemented system had advantages such as the librarian could easily locate the literature source and could identify the books borrowed by a particular student. The system had an application server and database running on the same system. The system mainly focused on automating aspects of a library.[5]. Kittipuritat and Kannikarintawong proposed the evolution of an automated open source archive with a system of book recommendation. Conceptualization of information and communication technologies (ICT) is used to implement library automation which aids in eliminating the issue of manual processing in a library. This approach has

multiple features like title similarity, bibliographic of information and NDC category of books on the basis of loan record as learning data by employing machine learning of support-vector machine. In this study book recommendation is given by SVM based on resemblance between bibliographic or title. [6]. Shanmugam A. P et al.. Proposed library management system explaining about how it can act as tool to renovate traditional libraries into digital libraries. The Library Management System (LMS) will assist the librarian to work easily. C# is used as a tool to build the front end and SQL is used to create database. The hindrance and issues related to traditional concepts are identified and solved it to use the library easily and efficient administration is achieved.[7]. Yujun Li, Hao Zheng ,Tengfei Yang and Zhiqiang Liu proposed implementation and design of library management system on the basis of web service . In this model, three- layer architecture is used, along with which, design and analysis is needed for the prototype building language that UML carries. Front interface is created using JSP technique, back-end and database is done using SQL server. Three-tier dynamic database optimization and website production technologies are used to maximize performance.[8]. Ayodeji Iwayemi and Sulaimon Oyeniyi Adebayo proposed the development of a robust library management system used to automate normal system which reduces manual activities in a library which is waste of time and effort. The system uses waterfall model, PHP, CSS and HTML are used for front end design and MySQL a backend database. The sturdy design holds both online library system and library management system. [9].Kolo, Silas et al.. Proposed the design and implementation of android mobile library management system for a specific institution which aims to develop a system which can manage few activities of a library reliably and efficiently, it focus to harness the mobile library system for the better usage by clients. This paper describes the challenges faced by the existing system and to solve those issues. The new system offers easy accessibility, fast retrieval of information and the utilization of library system can be guaranteed.[10].Neelakandan.B, Duraisekar. S, Balasubramani.R, Srinivasa Ragavan.S described about execution of automated library management system by making use of koha open source software. Some of the outcomes of the study observed are that it gives a complete control over the library operations and collection. Research scholars and faculty members can also use this facility efficiently.The problems associated with this was lack of infrastructure, lack of environment support and lack of financial resources.[11].HeruSupriyono, Muhammad Ramadhan Fitriyan, Muamaroh developed a QR Code-based library management system ,waterfall method is used in the development process of the system development cycle(SLDC). Here QR code is executed to contain all the library collection data in the form of a tag which can further be attached in the library collection. QR code is scanned using a camera to retrieve information which can be accessed process transaction in an optimum distance of 15-30 centimetres.[12].An Integrated Library Management System for Book Search and Placement Tasks by Umar Farooq et al. In this paper [13], Umar Farooqmainly discuss about Library management system for placement tasks and book searching which is done with the help of particular mobile application. The user can check whether the book is available or not by giving author name or book name using the app. According to information received from the user it will show whether the book available or not Manual reserving the book is time consuming and cumbersome process of humans. Due to the intervention of library app we can easily search book and check availability and reserve desired book.In this report [14], Prabhakar Kumar, Rahul Kumar, Rajat Singh, Vikram Pratap Singh mainly discussed about from library management system project designed to build a computerized library management system. Framework for preserving all the library's everyday work. This project has many characteristics. In general, they are not accessible in normal library management systems, such as User login facility and teacher login facility. Additionally, it has an admin facility, login through which the admin can track the entire system.It also provides a facility where students log in after logging in. Accounts can access and have a look at the list of books issued and their date of issue and date of return.An Approach for Modeling and Analyzing Mobile Push Notification Services In this paper [15], JunhuaDing,Wei Song and Dongmei Zhang deals with Mobile push notifications.An significant aspect of mobile push notifications is Mobile computing facilities, and it has been thoroughly In mobile devices, incorporated. Nevertheless, it also carries Security and reliability to the devices. The structured Specification and verification are an efficient technique for Understanding the features of Smartphone push alerts and notifications ensuring consistency in the production of the method.Library Automation-A Feasibility Study, In this research paper [16] AA Vaishnav and NG Bapat deals with the automation of libraries. It discusses the issues in the current system and Reasons for automation are presented. The analysis calls out attention to the need for Automation of libraries and technical, social and economic discourse In depth, elements of the library automation. The rise in the admission of Students has

generated a higher demand for Services for the library and output of each Manual service. One of the resolutions to tackle these problems is library automation. Library automation is the computerisation of library housekeeping operations.

Erxiangchen and Minghui Liu 2009, introduced an approach to reduce the waste resources. They proposed a multi-tier system including business layer, presentation layer, database layer and data persistence, which is used to separate codes and reuse of the system and improve maintainability. The system is created on hibernate frame structure and on struts. Using this we can also enhance the system. The system fully takes advantage of struts and hibernates, shortens system development cycle in an effective manner.[17] .ChiagunyeTochukwu, Nwachukwu-nwokefor K.C, Udeani Henrieta, proposed a system to create unlimited quantity of digital information and make it available to the world. This system solves the difficulty to store and manage large number of documents. The system is created so as to obtain research materials for institutions and then publish it to the relevant users. It helps the students to gain access to the latest learning facilities like journals, articles, , textbooks etc. with their own computer systems without having to go through conventional institution libraries.[18]. lyjoyMicheni, Julius Murumba 2014, introduced a method in order to automate the process of digital library projects in various universities and to identify the challenges faced in management of digital library projects. Proposed an investigation to carried out to establish digital project management procedures and to collect information on the degree to which digital projects have been carried out and the difficulties encountered in managing the implementation of such projects in university libraries.[19]A Java based University Library Management System. In this paper[20], by Asaduzzaman Noor and Md. Sharif Hossen which discuss about An online Java based collaborative database for users The management system has been successfully developed, much of which is Applicable to libraries at universities. Any consumer who uses this app without having any understanding of Java, it could easily be possible to understand the graphic reports of various transactions, such as book availability, number of copies of the available books, fines that are due on the users, etc. Appropriate protection has also been taken care of so that the resources could only be accessed by registered users allowed by the Admin. You can run this program on any operating system that has a Java Virtual Machine. It can be inferred from a proper study of positive points and constraints that this is a highly powerful GUI based program. This library management system works correctly and satisfies.

III. PROPOSED WORK

The procedure of manually managing library operations wastes time and causes unnecessary stress. In light of the foregoing, the computerized system for managing library activities makes the best possible of using available library staff and resources which benefit the users. The goal of this design will be to provide solutions to the issues that manual library systems encounter. The main objectives are as follows

- Easier access to the library for faculty and students
- To make other functions of the library simpler
- Reservation of books and notes
- Payment of fine/penalty using the app
- Management of books and other utilities
- To implement voice based search
- To upload notes by faculty
- Notification system

The below diagram shows the design and the approach of the proposed work and how the android can be accessed by the students in a particular college.

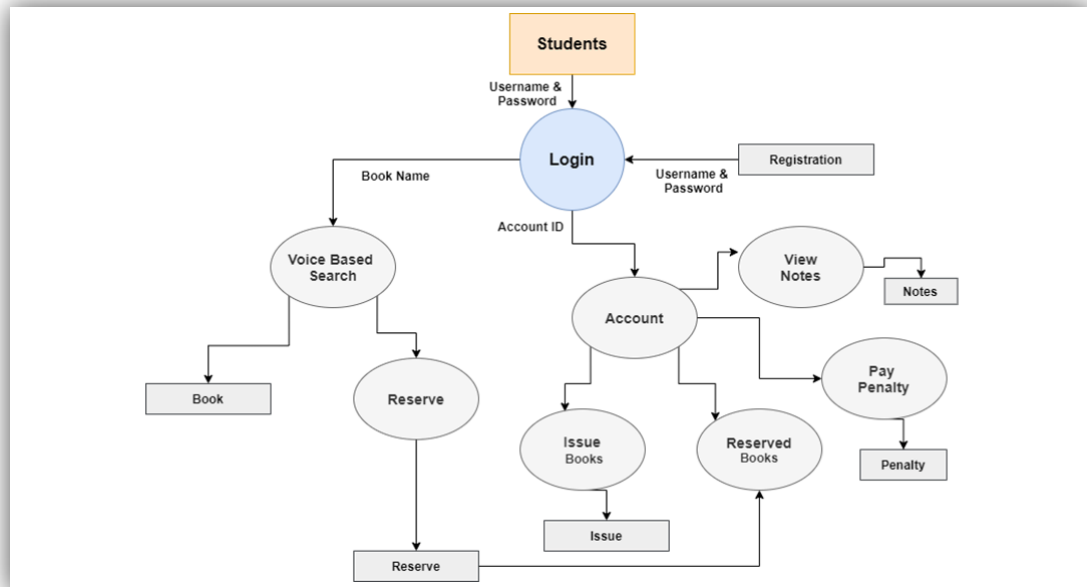


Figure 3.1 Proposed Approach

IV. CONCLUSION

The proposed android app for college library is designing to automate library tasks, such as user registration, charging and discharging of books, and research, it can be fairly inferred that the system is awell organized, security-conscious, cost effective, and platform-independent Library Management system. By the implementation of voice based search facility make searching of books easier by taking book name as command. The system will also make library staff's jobs easier by assisting them in doing their duties more efficiently and automating library tasks.

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