

SELF ISSUING SYSTEM FOR LIBRARY

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Abstract - The paper titled *Self Issuing System for Library* is library management software for monitoring and controlling the transactions in a library. The paper *Self Issuing System for Library* is developed in *aspx.net, vb.net* which mainly focuses on basic operations in a library like adding new student, new books, and updating new information, searching books and students and facility to issue and return books. *Self Issuing System for Library* is a windows application written for 32-bit Windows operating systems, designed to help users maintain and organize library. This software is easy to use for both students and administrator.

Key Words: Automation, Surveillance bit

1. INTRODUCTION

The purpose of the system is automation of library, it provides facilities to student to search for the required books and it allows the administrator to create & delete membership of students. Four main modules of software of Self Issuing System for Library are:

Membership Module- This module keeps track of all important information of students, who has taken membership of library.

Cataloguing- It is the process of creating a list of all bibliographic items such as short description, list of subjects, authors name and classification of books.

Report Generator- It helps in generating various reports like status of issued books, total students, books returned.

OPAC- Online Public Access Catalog, it is an online database of materials kept in the library. It allows the search for a book of our choice in the library

1.1 RFID Technology in Libraries

A library is a growing system. The problems associated with the maintenance and securities used to identify, track, sort or detect library collections at the circulation desk and in the daily maintenance. This system consists of smart RFID card, hardware and software, provides libraries with more effective way of managing their data while providing greater service. The technology works through thin smart card, which placed on the inside cover of each book in a library's collection. Manual interactions not needed for RFID-tag reading.

2. Methods and Material

A. RFID Tag:



Figure 1. RFID Tag

Tags are thin labels which can be fixed inside the cover of the book. These are made up of carbonic structure which contains a magnetic strip or coil layer inside the tag which helps in sensing the tags. When we bring the tag in front of the reader, the reader antenna senses the tag and checks the unique serial number of the tag. If the tag is registered in the database of administrator then the reader authenticates the tag otherwise the reader shows an error and gives the message that the tag is not registered or the tag is not authenticated.

B. RFID reader:



Figure 2. RFID Reader

RFID readers used to interrogate data stored in tags. It contains a radio frequency module, a control unit and an antenna to communicate with electronic tags via radio signals. The antenna inside the RFID reader generates electromagnetic field. When a tag passes through the electronic field, the information stored on the tag is interpreted by the reader and sent to the database server, which in turn stores or retrieves information about the book's issue or return.

3. METHODOLOGY

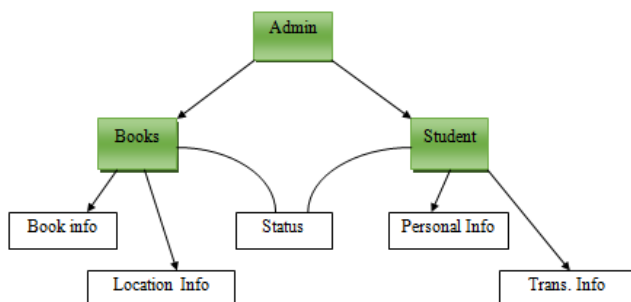


Figure 3. Connectivity of students existing academic account with library

Figure 3 shows the connectivity of students existing academic account with library to allow student for books issuing system and managing stock with enhanced security to save time and cost. As the user convenience is the first priority so an android app will be developed for the user and a desktop based app for the librarian or admin.

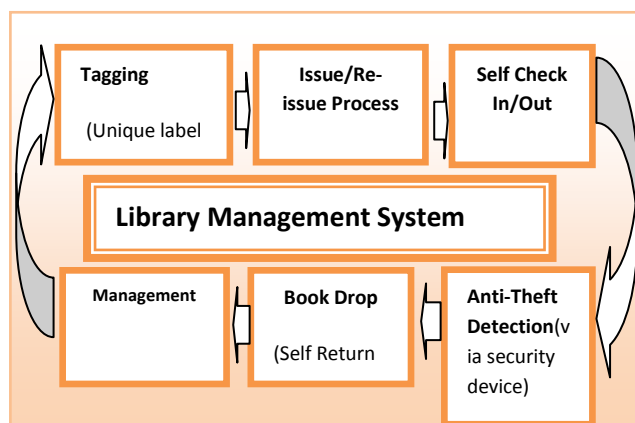


Figure 4. Architecture of complete system

Figure 4 shows the overall architecture of proposed system. In which books will be labeled by unique tag for unique identification. For issuing and re-issuing of any book, first it will check the status of availability of book, if it is available then system will allow for issuing. Books selected by the user are identified by the

system's built-in RFID reader. And, the surveillance bit in the book tag is deactivated by the system. If the surveillance bit is active then buzzer will sound so one (guard) can alert and he will not allow to go, so the security problem is solved. When a book is returned, the check-in/out system activates the surveillance bit.

4. RESULT AND DISCUSSION

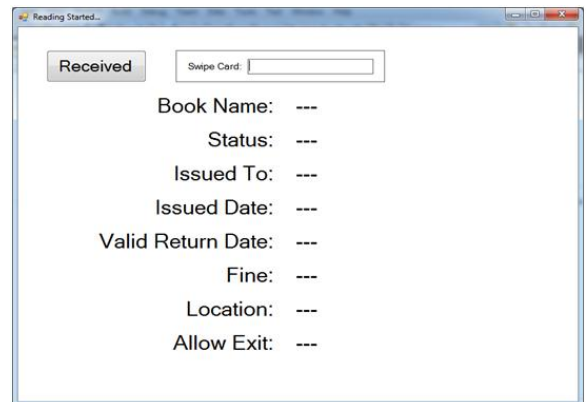
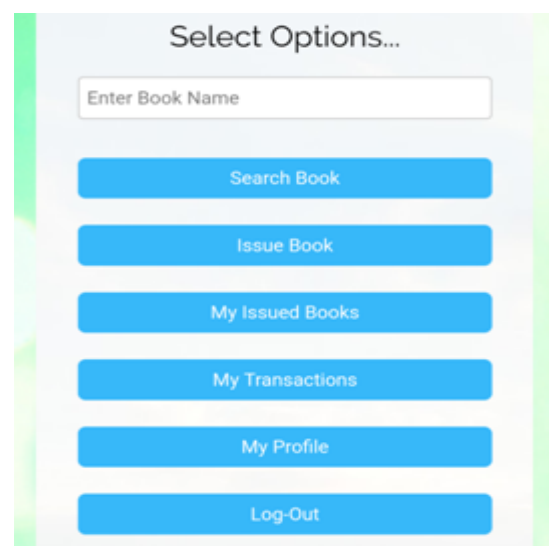


Figure 5. Member's Issue/reissue Book Status

Above figure shows the overall information of issued/reissued book status. Once the book is issued by student the admin side information will updated. This information include book name, status whether it is available for issue or not, if issued by someone then its name, issue data, return date, location of book in shelf.



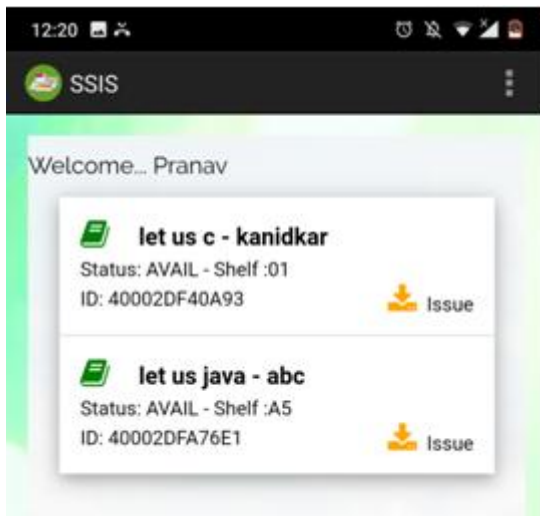


Figure 6.Book Search

One can search book in search option and can also check other fields like my issued books, transactions etc. Figure shows the book information which are currently available with book ID and shelf no. If you want to issue the book, simply click on issue option.

5. CONCLUSION

This system is used for self issuing of books, in which android based application is developed for user and desktop based application is developed for administrator. For transactions of any book one will have to register themselves in that app and log in to their library profile. Once they get logged in, the person has to search for that particular book inside the mobile application. Then they have to scan the same book through the RFID reader from library. Once the scan is completed their entry for that book gets successful and a particular date is given to that person when they can return or re-issue that book. If any person fails to return their books on given date & time then the library authority will start charging extra for each day, and that app will try to constantly notify that person to return or reissue that book. For re-issuing the book that person only needs to click the re-issue button and as a result the date of returning the book will get extended.

Now in case if that person does not scans the book while issuing and they just walks away out then the buzzer having a RFID reader which will be placed at the entry/exit section will make loud sound so that the library authority get alert and can take penalty. It increases the speed and efficiency of book issuing, returning and monitoring, and thus frees staff from

doing manual work so that they could be used to enhance user-services task.

6. REFERENCES

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