

# Identification and need of Smart Library Management System

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## ABSTRACT

Library management system is a project which aims in developing a computerized system to maintain all the daily work of library. This undertaking has numerous highlights which are by and large not available in typical library administration frameworks like office of client login and an office of educators login .It additionally has an office of administrator login through which the administrator can screen the entire framework .It likewise has office of an online notice board where instructors would student be able to can set up data about workshops or courses being held in our schools or close-by universities and curator after appropriate check from the concerned foundation sorting out the class can add it to the notice board . It has likewise an office where understudy subsequent to signing in their records can see rundown of books issued and its issue date and return date and furthermore the understudies can ask for the custodian to include new books by filling the book ask for frame. The custodian subsequent to signing into his record ie administrator record can produce different reports, for example, understudy report , issue report, educator report and book report Overall this venture of our own is being created to enable the understudies and also staff of library to keep up the library in the most ideal way that could be available and furthermore to decrease the human endeavors.

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## INTRODUCTION

Integrated library management system is a system where keep all tracks of a library operation such as items, bill, paid, and also patrons record. By this product we can work all the library activity effortlessly. Coordinated library framework there is two interfaces one is benefactor and another is for library staff. In library framework the task of a client/part/benefactor and staff of library is extraordinary. A client can look through a book, see book list which are accessible in library, can issue book, recharge book, can hold book, can print issue list, can alter his/her data (benefactor data). Online open abundance inventory, course, some capacity under serial control can work by supporter. Be that as it may, a staff can store bibliographic (book, CD, DVD, diary and so forth) record really library materials record in database, can make supporter in database, arrange a book, buy a book. Obtaining, inventoriing, some capacity under serial control, administration all are work by staff of a library.

### Prerequisite Analysis of Library System

**Securing:** Materials, which are obtained for library utilize. Exercises identified with acquiring library materials by buy, trade, or blessing, including pre-arrange bibliographic seeking, requesting and getting materials, handling solicitations, and the support of the fundamental records identified with acquisitions. The accompanying prerequisites are under the securing:

**Choice of things:** What sort of books, CD, DVD and so forth need to a staff purchase for a library .For books it could be printed copy, softcopy or unique duplicate.

**Copy checking:** A staff can discover copy checking from that alternative. That implies can think about between two books whether they are same or not.

**Determination of merchant:** A staff of a library can pick a seller to buy a book. All things considered, for buy a book some merchant are well for some particular book so staff need to choose the seller from the seller list from their database.

**Requesting:** After choosing the merchant a staff of a library can request to buy to a seller for specific book.

**Receiving:** From that choice staff of a library can watch that a book is in library on time or not which is requesting to merchant.

**Claming:** If a merchant is a not supply book on time in a library staff can guarantee on that seller.

**Reserve control:** Fixed measure of cash is appoint for specific office. So when book is buy for an office then the adjust will be short from the real adjust.

**Report and insights:** Create a report about the books, diary, CD, DVD and so on. As a matter of fact data about the library from that data a staff can make a move for library.

### Serial control

Serials incorporate diaries, periodicals, magazines, chronological registries, yearly reports, numbered monographs, and different materials. This term is some of the time utilized reciprocally with "periodical."

**Reserve control:** Fixed measure of cash is dole out for specific division. So when book is buy for an office then the adjust will be less from the real adjust.

**Requesting:** After choosing the seller a staff of a library can arrange a book to buy to a merchant for specific book.

**Receiving:** From that alternative staff of a library can watch that a book is in library on time or not which is requesting to seller. Or on the other hand monitor supporter who isn't returning book to the library.

**Asserting:** If seller or supporters are not supply the book on time staffs make a rundown of those people for materials.

**Authoritative:** In a library staff can restricting the diary in a library to get to effortlessly.

The library arrangement of our nation is extremely poor. For instance Brac University Aysha Abed Library framework isn't a modern library framework. They doesn't have some essential module, for example, securing, flow, report and so forth. Accordingly they are doing the majority of work physically. They don't take after standard configuration such as Machine comprehensible inventoriing (MARC) and Z39.50 convention. So in future when we need to coordinate with other library we couldn't do that in light of the fact that each library framework in our nation utilizing their own configuration. A typical database framework is useful to exchange one framework to another framework. So we require those things to influence our library to finish and standard. So we require a total current library framework, which is less cost and productive library framework. I think Open source library framework is outstanding amongst other answers for take care of our concern. Open source programming is free for all and we can refresh our framework with no cost. The most essential part is those product is full highlighted and bolster standard organization.

### OPEN SOURCE STANDAEED LIBRARY SYSTEM

The standards adopted by the library industry and community that facilitate data interchange between libraries and institutions, and which are supported by most system are Machine-Readable Cataloging (MARC) and Z39.50, the information search and retrieve protocol standard.

MARC 21 means machine readable cataloging. It is a common format database, which is used in much software. The usefulness to use MARC 21 format is we can operate any library through own library if all library use MARC 21 format. In MARC 21 there is some rules to record the data. Such as if we want to save in our database system an author name Robert we have to use "100 1# \$a Robert" this format .100 is tag for this field. Each field has particular tag number. Actually MARC formats are standards used for the representation of bibliographic and related information for books and other library materials in machine-readable from and their communication to and from other computers.

### Open Source Library Management Software:

But in real life problem is ILS (integrated library system) is most expensive software such as – Alice, soul, libsuite, and libsys etc. But there is some software, which is free software for ILS such as – KOHA, Openbiblio, OpenILS, and Emilda etc KOHA and Evergreen ILS is most popular open source software. But KOHA is most popular than others. Because Evergreen does not supported all modules such as- Acquisition and Serials Controls. But KOHA is full-featured software system. It is free for all. Katipo Communications Ltd developed KOHA in New Zealand. There is company name Liblime, they are providing service for KOHA with charge. KOHA is written in Perl. Actually KOHA meet all the requirements, which is needed in complete library system. So KOHA is one of best library system to solve our problem.

### SMART LIBRARY MANAGEMENT SYSTEM

Library management system consists of various modules like acquisitions- ordering, receiving of books from the suppliers; cataloging-classifying and indexing materials (tagging); circulation – lending materials to patrons and receiving them back.

**Tagging:** Tag is the most imperative connection in any RFID framework. It can store data identifying with the particular thing to which they are connected, revise again with no necessity for contact or viewable pathway. Information inside a tag may give ID to a thing, verification of proprietorship, unique stockpiling area, credit status and history. RFID labels have been particularly intended to be joined into library media, including books, CDs, DVDs and tapes. The part of the custodian is to characterize the books into gatherings and glue the RFID labels on them. These paper-like labels helps in following the books inside the scope of the peruser.

**Check in/out administration:** The counter station is a staff helped station on administrations, for example, advance, return, labeling, arranging and so forth. The supporter approaches the counter to obtain or restore the book. To start with the supporter should recognize themselves utilizing the labels gave to them. The staff at the counter at that point utilizes a peruser to peruse the labels to make a section in the focal database. In the event of book restore, the staff gathers the book and peruses the tag. On the off chance that the book is returned past the due date, fine is gathered from the benefactor.

**Self check in/out administration:** The framework essentially comprises of a PC interfaced with a RFID peruser, in addition to extraordinary programming for individual distinguishing proof, book and other media dealing with and dissemination. In the wake of distinguishing the supporter with a library ID card, a RFID card-containing the benefactor points of interest and their ID, the supporter is requested to pick the following activity (registration or check in of at least one books). In the wake of picking registration, the benefactor puts the book(s) before the RFID peruser and the show will demonstrate the book title, writer name and its ID number (other discretionary data can be appeared if wanted) which have been looked at. It shows the date before which the book is to be returned. Where as under tight restraints in, the supporter demonstrates the book(s) before the RFID peruser and a similar will be shown as in line out. In addition, if there are delays in the arrival of book(s), the fine sum will be shown.

**Rack Management:** Shelf administration incorporates finding and distinguishing things on the racks as a simple assignment for curators. It contains essentially of a scanner and a base station. The framework is intended to cover three principle necessities: Search for singular books asked for, Inventory check of the entire library stock, Search for books which are miss-helved.

**Book Drop:** The Book Drops can be found anyplace, inside or outside the library. Conceivable remote areas outside the library incorporate MRT/prepare stations, malls, schools, and so forth. This offers extraordinary adaptability and accommodation of returning library things at whenever of the day, notwithstanding when the library is shut. Supporter needs to put the book on the plate accessible for book drop. The peruser peruses the labels and recognizes the supporter of the effective return. The peruser refreshes the backend framework and permits advance cancelation.

**Hostile to burglary Detection:** RFID EAS Gates is the counter robbery part of the Library RFID Management System utilizing the same RFID labels inserted in the library things. Every path can track things of around 1 meter and would trigger the caution framework when an unborrowed thing went through them. The caution will sound and lights on the entryway will streak as supporter goes through with the un-acquired library material.

### MODULES OF MANAGEMENT SYSTEM

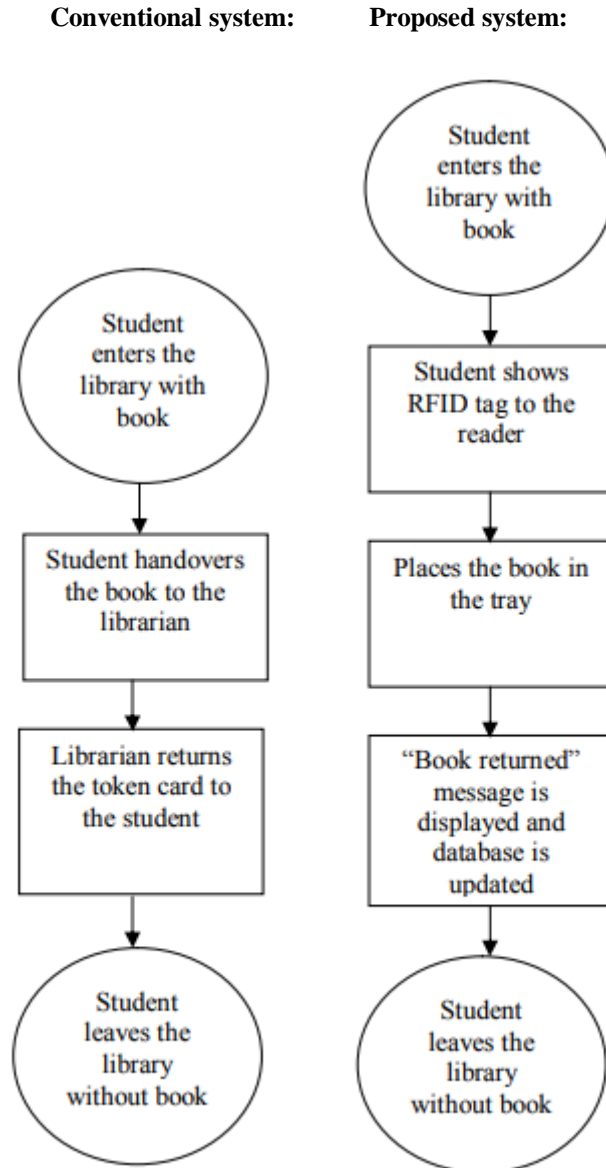
As explained in the above section, there are several modules in the existing library management system. But this paper focused only on three modules namely: Self Check in/out, Book drop and Shelf management.

**a) Self check in/out:**

The following flowchart describes the self check in/out modules in the existing and the proposed system.

**Book Drop:**

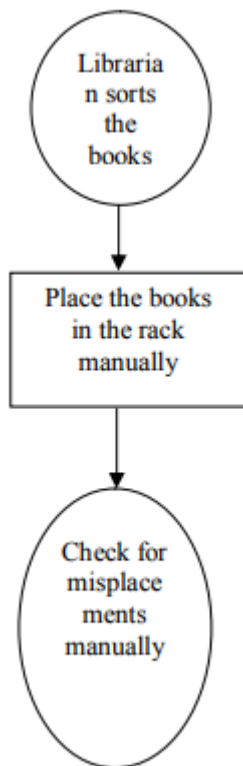
The book return module is explained by means of a flowchart to understand the difference between the conventional and the proposed system.



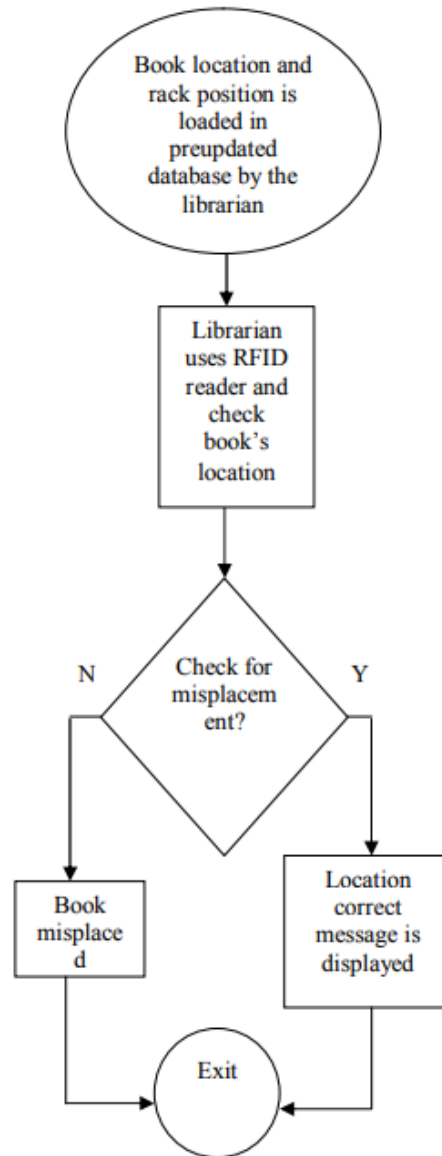
**Shelf management:**

Arranging the books in their respective locations in the racks is a tedious task done by the librarian. In order to overcome this drawback the proposed system consists of RFID reader to check for the misplacements of books. The following flowchart describes the shelf management in the conventional and the proposed system.

**Conventional system:**



**Proposed system:**



**CONCLUSION**

Smart library managementsystem implementation in libraries has been discussed. The whole system were studied to overcome the disadvantages of barcode systems and thus demonstrated. The entire project was planned to reduce the need of skilled librarians. Though the system is more expensive than the barcode systems, security is ensured and is more efficient. RFID technology is also applicable in various fields like: Asset tracking, people tracking, healthcare, animal tracking, document tracking, object tracking in stores, building access control, airline baggage tracking and toll collection at toll booths.

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