

# Advance Library Management System

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## Abstract

On the basis of introducing Advanced library Management, human resource management status the significance and function of library management with the participation of university student volunteers were discussed. The experience of library working with the participation of student is introduced. The library may be queried using keywords and will return a number of classes which match the query. Librarian can browse using any of these classes as a starting point. The combination of browsing and querying provides a high degree of flexibility

**Keywords:** Barcode Scanner, Message Gateway etc.

## 1. Introduction

Advance Library Management System is a technique of maintaining and monitoring books at Library, so that the distributions of books take place effectively."Computer software has played a vital role in book management of library now. Computer software can retrieve books quickly and it also has high effective, long operating life, low costs advantage. It is the information and scientific trend of book management. However, existing large scale library management system used in some small and medium-sized library directly will lead to resources wasting. So, developers adopt a popular software development technology and propose the library management solution based on java framework. System which is designed on java can be divided into presentation layer, business logic layer and data processing layer. This technology can realize code separation and enhance system maintainability and reusability. In the process of the software development based on software component, component library plays a key role. To retrieve and extract the most satisfying component among the library of components is important in component library management system. The retrieval efficiency of the component library not only includes the retrieval of the component itself, but also includes the understanding of the component. The general component retrieval system provides descriptive information about understanding the component simply, but seldom provides information about respect of reused actually. Small Library Management System is a information system built with transaction demand, which includes system management, book borrow and return management, reader database

management and book database management. System management includes system parameters maintenance and reader access authority setting. Books borrow and return management processes routine business, such as books lend, return and query. Reader database management handles reader information maintenance, such as library card registration, loss registration. Book database management maintains literature and information such as query, modify, add and delete or print report. Today LMS's are based on manually that require line-of-sight and time consuming circulation processing of each individual book. Therefore, frustrating circulation delays are experienced by both library personnel and library users. Furthermore, individual entry for each book multiplies risky repetitive motion of circulation staff, which is considered a major drawback by librarians."

## 2. Problem Statement

The current system is not efficient and less user friendly, it is a less secured desktop application, and There are some systems which also help the students and librarian to work properly. But the existing systems lack in some of the other fields. Overcoming these drawbacks we are going to develop the system which reduces human effort with additional advantages.

### 2.1 Aims and Objective

- To develop an user-friendly system for library management.
- Notification facility.
- Proper display of info/statistics.
- A real-time system.
- To design a Good GUI to facilitate users and librarian.
- To provide Flexibility and reliability
- To provide a User-friendly system.
- To provide a Secured system.
- To provide Ease of access

### 2.2 PROPOSED SOLUTION

In our system we have student identity card with a barcode. so by using barcode scanner we are scanning the students identity card. after scanning the entire details of the student gets displayed on the librarian PC. In our

system we are using message gateway which acts as a notification so when the deadline of returning the books come closer the message is sent to the particular student through the database. which is useful for the Students. We are making our system so it can load efficiently even if there is slow connection. We are providing Flexibility to our database so even if there is changes in student record the librarian can change it in efficient manner.

### 3. Architecture

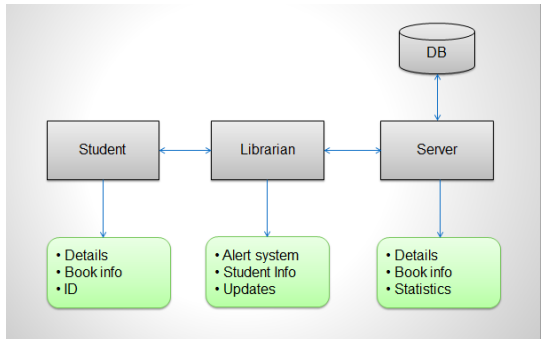


Fig.1. Architecture of Advance Library Management System

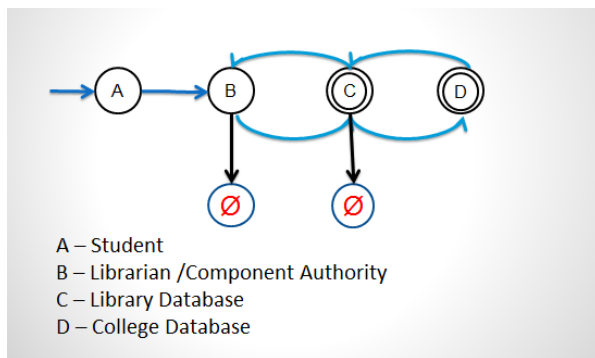


Fig.2. Turing Machine of Advance Library Management System

### 4. Working

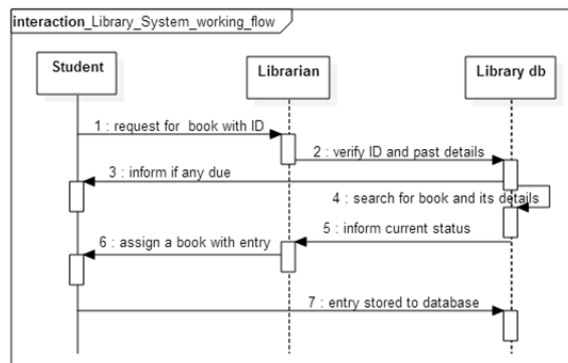


Fig.3. Sequence Diagram

User needs to create his/her account in the library. While creating user needs to specify its current educational details. After successful registration the user will get the Student ID card with barcode. If a user wants to borrow a book, user must provide ID card, Then Librarian verify all the details of user. If any book is pending or any due with respective user then librarian informed to the user and after returning book and clearing due librarian give a book to the user. When Librarian give book to the user that time all the information is stored in database. also using message gateway which acts as a notification so when the deadline of returning the books come closer the message is sent to the particular student through the database. which is useful for the Students.

### 5. Mathematical Model

$$\text{Let } S = \{ I, F, O \}$$

Here I stands for Input, F stands for function, O stands for output.

Where:

- I = {personal and academic details, student, ID}
- F = {making provisional and final list, verification and modification of personal and academic details of student, making student profile, formulation of ID}
- O = {ID, password, provisional and final list}

### 6. Conclusions

The issue and problems faced in the library were identified in the system and system is designed to promote an easy access for a librarian to maintain a library and also for the user to easy access of books article, journals etc. The design of the system is carried out on the based on the idea to rectify the system with the identified errors as a token of enhancement work. The requirements were pointed out and the study of the requirements was done. The future work contributes in developing the entire model for our library and integrating the individual system of model to form the master system with the advantage of cost wise an efficiency for getting the required book with no search of time too with any ordered arrangement with manual work reduction.

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