

Library Management System

(SRS Report)



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1. INTRODUCTION

With the increase in the number of readers, better management of libraries system is required. The Library management system focuses on improving the management of libraries in college. “What If you can check whether a book is available in the library through your phone?” or “you can reserve a book or issue a book from your phone sitting at your home!”. The Integrated Library Management system provides you the ease of issuing, renewing, or reserving a book from an library within your college through your phone. The Integrated Library Management system is developed on the android platform with the help of barcode scanner which basically focuses on issuing, returning the book.

1.1 PURPOSE

The main purpose of this project is to maintain a easy circulation system between students and the libraries, to issue books using barcode, also to search and reserve any book from student section and to maintain details about the user (fine, address, phone number).Moreover, the students can check all books availability from their home.

1.2 SCOPE

- Manually updating the library system into an android based application so that the user can know the details of the books available.
- The ILM System provides information's like details of the books, insertion of new books, deletion of lost books, limitation on issuing books, fine on keeping a book more than one month from the issued date.Also user can provide feedback for adding some new books to the library.
- Automatic books issue and return in one single click with help of barcode.

2. OVERALL DESCRIPTION

2.1 PRODUCT PRESPECTIVE

The proposed Library Management System will take care of the current book detail at any point of time. The book issue, book return will update the current book details automatically so that user will get the update current book details.

2.2 SOFTWARE REQUIREMENT

Front end: • Android developer tool

• Advance java

Back end: •MySQL

•PHP

2.3 HARDWARE REQUIREMENT

- Android version 6.0 marshmallow(minimum, android user's)
- 1GB ram
- 1.2 GHz processor
- 5MP rear camera

2.4.1 FUNCTIONAL REQUIREMENT

R.1.1: Register

Description : First the user will have to register/sign up. There are two different type of users.

The library manager/head : The manager have to provide details about the name,address, phone number, email id.

Regular person/student : The user have to provide details about his/her name of address, phone number,roll no., email id.

R.1.2 : Login

Input: Enter the username and password provided.

Output : User will be able to use the features of software.

R.2 : Manage books by librarian.

R.2.1 : Add student detail along with input roll no.,email id,name,address,father name and mobile number.

R.2.2 : Add book detail along with input book id,Title,Author,Publication,Quantity.

R.2.3 : Show book detail

Output : list of book along with bookid,Title,Author,Publication,Total Quantity,remain in stock.

R.2.4 : Student detail

Output : Show all student detail

R.2.5 : Return book

Input ; student id and book id

Output : The issued list will be updated and the returned book will be listed out.

R.2.6 ; Issue book

Input ; student id and book id

Output : Book successfully issued and list will be updated .

2.4.2 Non Functional Requirements

• Usability Requirement

The system shall allow the users to access the system from the phone using android application. The system uses a android application as an interface. Since all users are familiar with the general usage of mobile app, no special training is required. The system is user friendly which makes the system easy.

• Availability Requirement

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

• Efficiency Requirement

Mean Time to Repair (MTTR) - Even if the system fails, the system will be recovered back up within an hour or less.

• Accuracy

The system should accurately provide real time information taking into consideration various concurrency issues. The system shall provide 100% access reliability.

• Performance Requirement

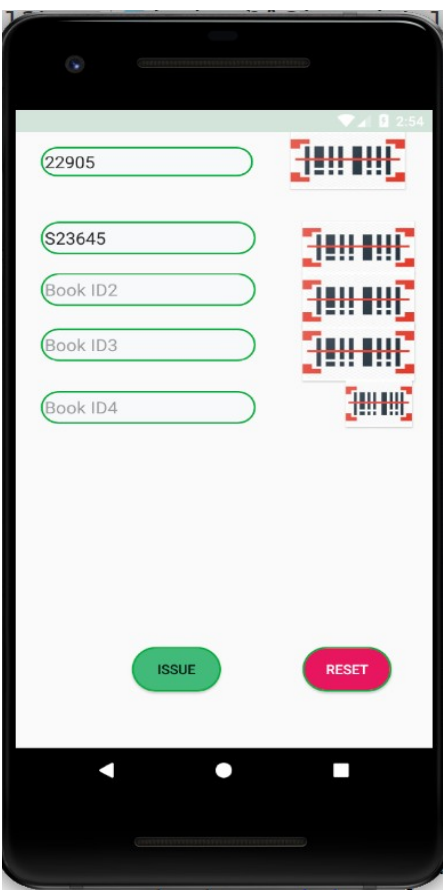
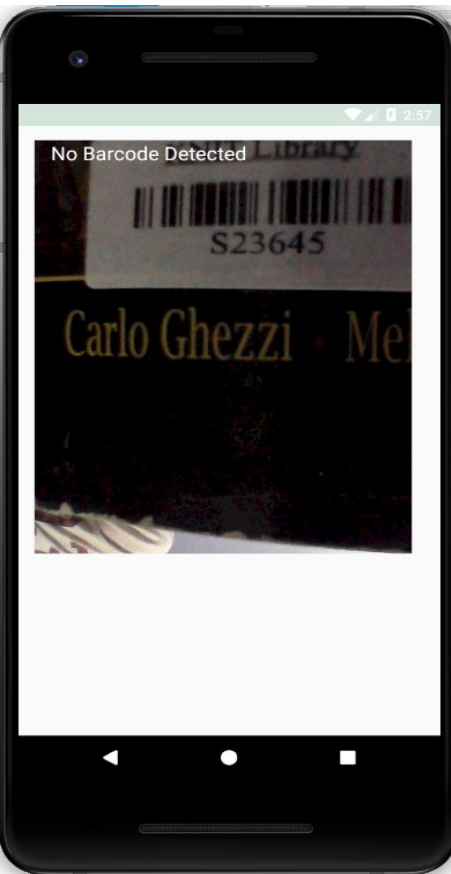
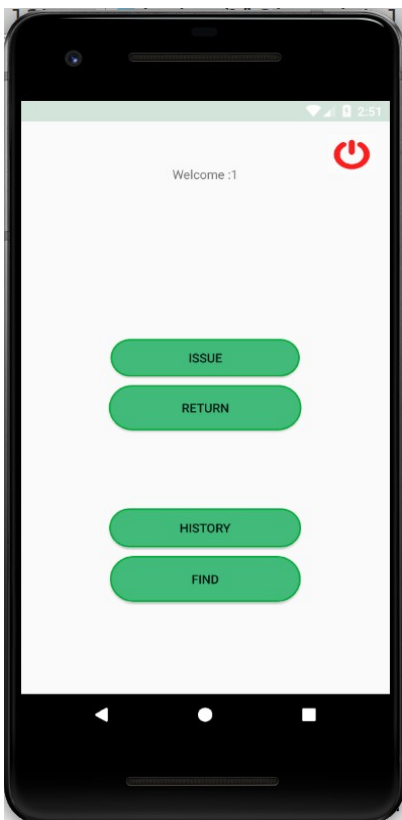
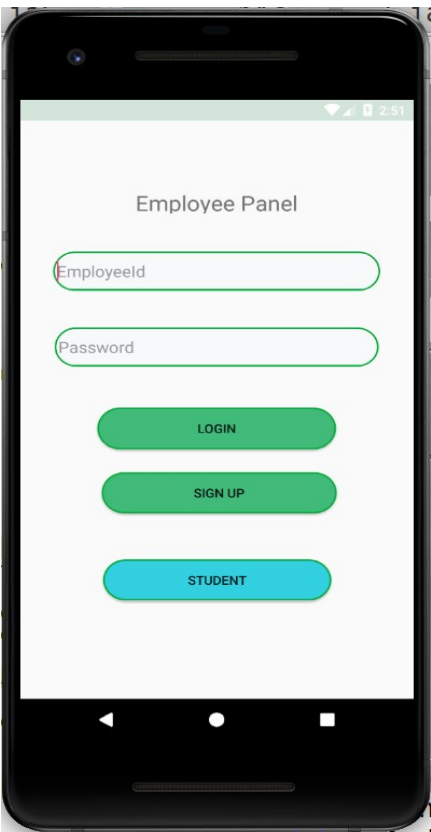
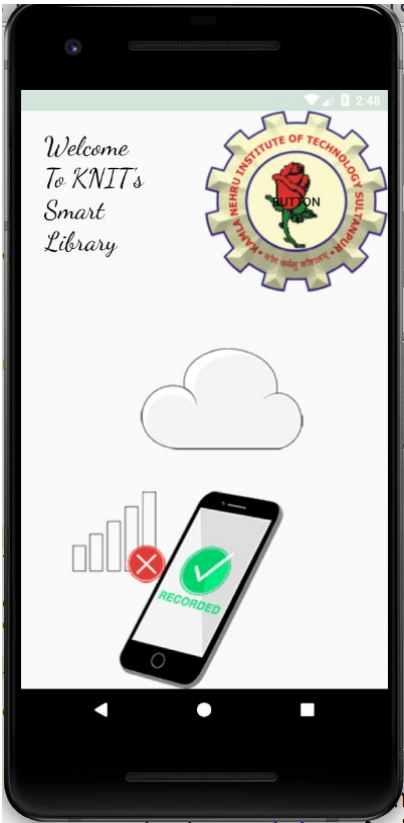
The information is refreshed depending upon whether some updates have occurred or not in the application. The system shall respond to the member in not less than one seconds from the time of the request submittal. The system shall be allowed to take more time when doing large processing jobs and slow internet connection.

Responses to view information shall take no longer than 5 seconds to appear on the screen.

• Reliability Requirement

The system has to be 100% reliable due to the importance of data and the damages that can be caused by incorrect or incomplete data. The system will run 7 days a week, 24 hours a day.

Screenshots :



2.5 USER CHARACTERSTICS

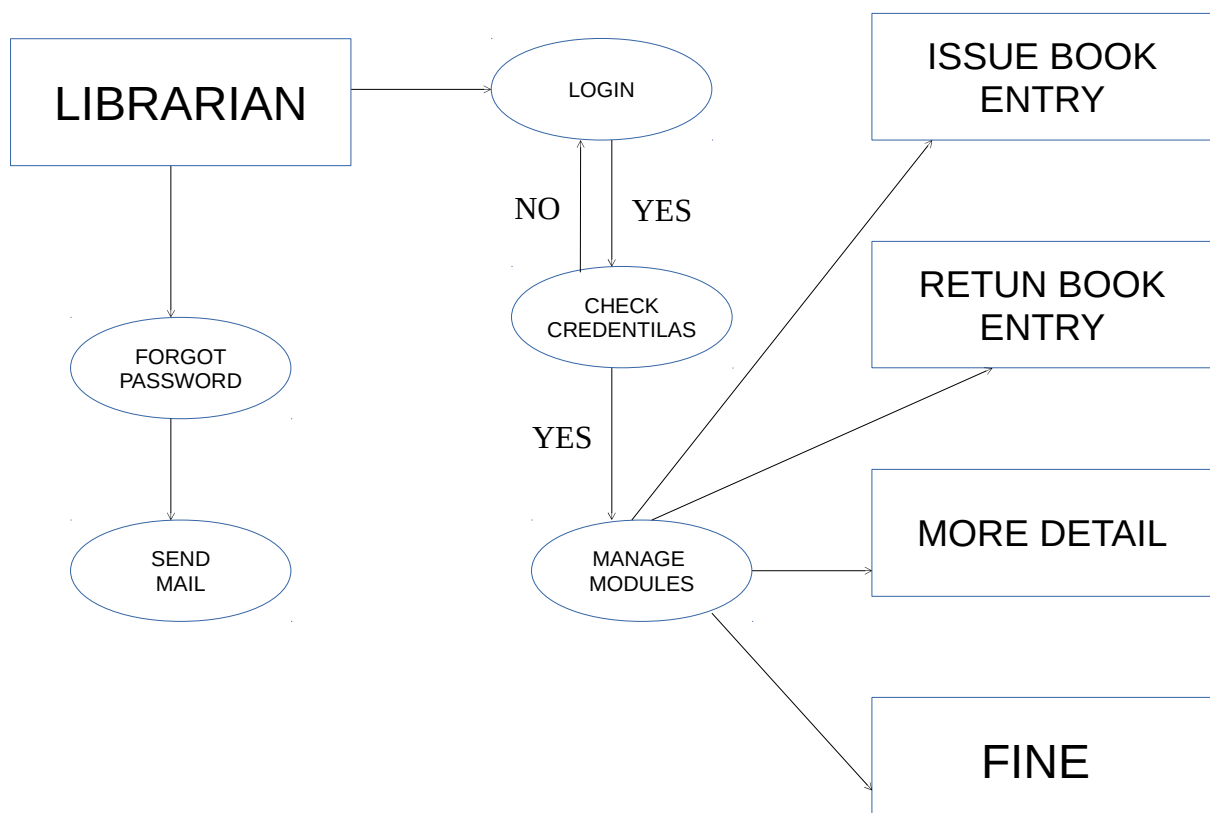
User/librarian module:

- Issue book
- Return book
- Student history
- Add student
- Add book detail
- Show book detail
- Student detail
- Fine details
- Scan barcode

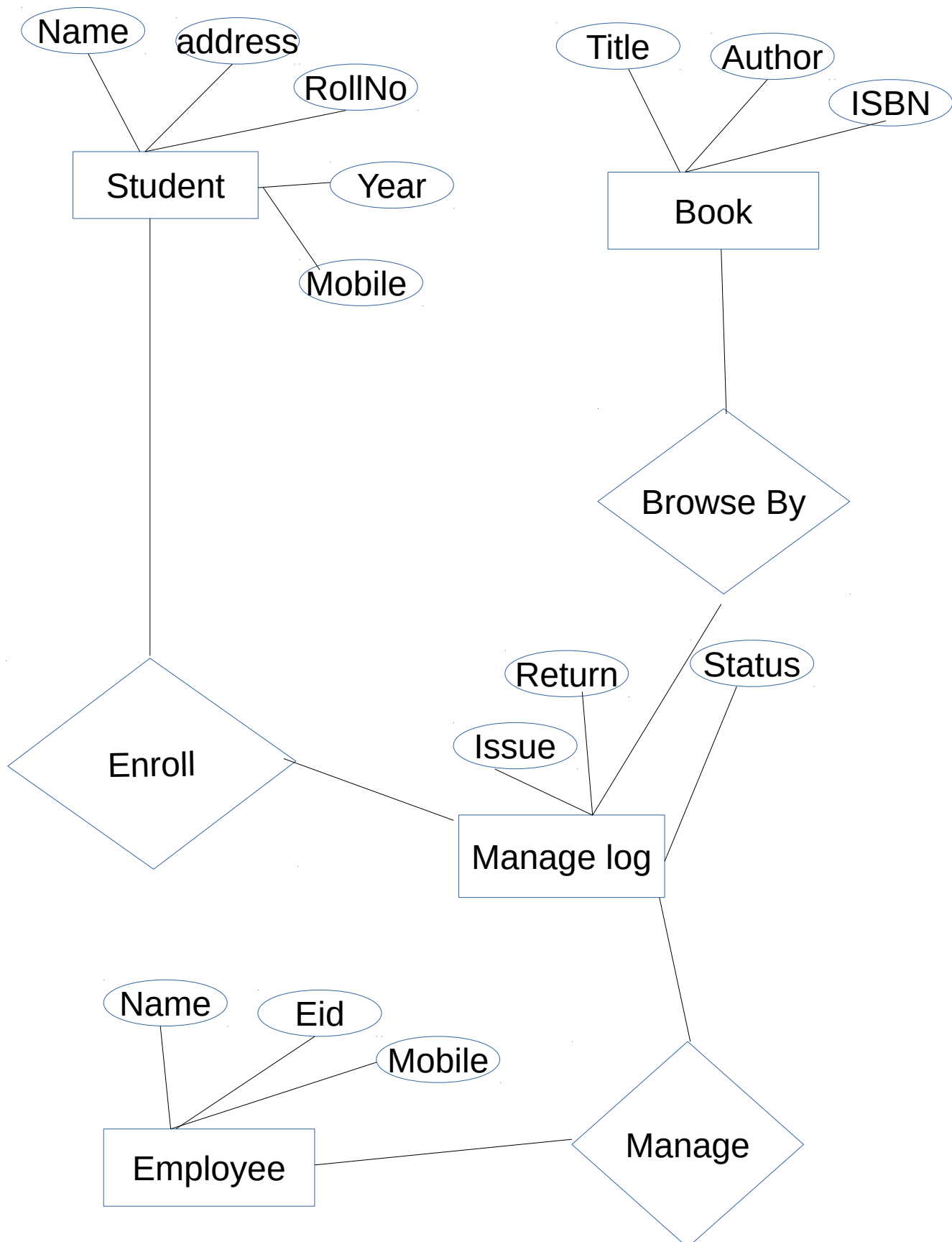
Student module:

- Register user
- Login user

2.6 DATA FLOW DIAGRAM:



2.7 ER DIAGRAM



2.7 Assumptions and Dependencies

The product needs following third party applications for the development of the project:

- Android Studio (for development of android based applications)
- Photoshop (for editing layouts, icons, buttons, etc)
- Mysql (for database)
- Sublime text (php coding)
- Google vision api (for barcode scanner)
- Volley api (for connect database through php)

3. System Features

3.1. Database – Storage

13.1.1. Description and Priority

Proposed Database is intended to store, retrieve, update, and manipulate information related to university which include

- Books availability
- Staff information
- Student details
- My Account
- Calculation of fines

23.1.2. Stimulus / Response Sequences

Responses for Administrator:

The administrator can Login and Logout. When the Administrator Logs into the Library system. The system will check for validity of login .If the Login and password are valid, the response to this action is the administrator will beSoftware Requirements Specification for library management system able to modify, view, add, deleting and all other functions that can be performed on the database.

3.2. Functional Requirements

This section gives the list of Functional and non functional requirements which are applicable to the Library Management System.

3.2.1 Interface Requirements

This section describes how the software interfaces with other software products or users for input or output.

3.2.1.1UserInterfaces

Describes how this product interfaces with the user.

GUI

Describes the graphical user interface if present. This section should include a set of screen dumps or mockups to illustrate user interface features.

1. Description

The user interface must be customizable by the administrator.

2. Criticality

This issue is essential to the overall system. All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined.

3. Technical issues

In order to satisfy this requirement the design should be simple and all the different interfaces should follow a standard template.

There will be the possibility of changing colors and images, plus Software Requirements Specification for library management system switching between interfaces with the minimum impact for the users.

4. Risks

To reduce the circumstances under which this requirement might not be satisfied, all the designers must have been developed web sites previously and they must be aware of html restriction and cross browsers implementations before starting the designing. In order to reduce the probability of this occurrence the entire design team will be trained in basic html development and macromedia fireworks, this tool will be used instead of Photoshop.

5. Dependencies with other requirements

All user interfaces should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module

4.Non Functional Requirements

4.1. User Interfaces

4.2. Hardware Interfaces

Server Side:

Software Requirements Specification for library management system

Operating System: Linux

Processor: Pentium 3.0 GHz or higher

RAM: 512 Mb or more

Hard Drive: 1 GB or more

Client side:

Operating System: Android 7.0(nougat) or above

Processor: Any 1.2 GHz or higher.

RAM: 1 Gb or more

Camera: 5MP or above

4.3. Software Interfaces

Database: MYSQL Server.

Application: APK(Android package installer)

Web Server: Apache 2.0

4.4. Communications Interfaces

The Customer must connect to the Internet to access the Application:

- Internet connection minimum 128kbps(15kb/sec)

5. Other Nonfunctional Requirements

Software Requirements Specification for library management system

5.1 Performance

Requirements

The proposed system that we are going to develop will be used as the easy-to-use for issue and return books in library in university.

5.2 Safety Requirements

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup

5.3 Security Requirements

We are going to develop a secured database for the university .There are different categories of users namely teaching staff, administrator, library staff ,students etc., Depending upon the category of user the access rights are decided. It means if the user is an administrator then he can be able to modify the data, delete, append etc., All other users other than library staff only have the rights to retrieve the information about database.

Software Quality Attributes

The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database.

5.4 Hardware Constraints

The system requires a database in order to store persistent data. The database should have backup capabilities.

5.5 Software Constraints

The development of the system will be constrained by the availability of required software such as web servers, database and development tools. The availability of these tools will be governed by the Kamla nehru institute of technology.

The most recent versions of software development tools may not be installed at the Kamla nehru institute of technology

5.6 Design Constraints

The system must be designed to allow user usability. That is, the system must be designed in such a way that will be easy to use and visible on most of the browsers.