

Department of Information Technology

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UNIVERSITY OF MUMBAI

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A Project Report on
Novel Framework Smart Library
Submitted in partial fulfillment of the degree of
Bachelor of Engineering(Sem-7)
in
INFORMATION TECHNOLOGY

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1. Project Conception and Initiation

1.1 Abstract

- The basic idea behind the project is to develop a library in which there is no queue for books. To reduce the work of librarian and also want to reduce or save the time of both librarian as well as student also. In our project there is recommendation system which you don't see in traditional libraries. You can search book by author name, publication, chapter so it will recommend you the best book for that particular subject you will also find the book as a level wise like beginner, intermediate and advance. You will send the book request to admin in the case you are at home and you want a book which is important for exam and there is only 10 books so you can send a request to librarian he will register a book by your name and it will also calculate the fine.

1.2 Objectives

- Online book issue.
- A search column to search availability of books.
- Borrowing and returning function.
- Scan ID number of members using QR code scanner.
- Using QR scanner to borrowing books.
- Scan QR code of member using QR scanner.
- Member record menegement.
- Studewnt login page where student can find books issued by him/her and date of return.
- Scan report using date from and date to.

1.3 Literature Review

- Development of an Intelligent Web Interface to Online Library Catalog Databases.
- Authors: Danny C. C. Poo| Christopher S.G. KHOO | Glenn HONG
- Publication :2018 International Conference on Inventive Research in Computing Application(ICIRCA)
- Advantage: To help users search library catalog's on the Internet more effectively.

1.3 Literature Review

- Library in Everyone's Pocket With reference to Bundelkhand University App
- Author: Mohit Gupta | Sridevi Jetty
- Publication : 2018 International Conference on Information and Communication technology.
- Advantage: There is a rapid increase in the number of users who use internet on mobile App and web apps.

1.3 Literature Review

- National University Library System: A Mobile and Web Application Framework for National University Learning Resource Center.
- Authors: Joyce A. Balinquit| Jeremiah T. Malicdem
- Publication : 2017 10th international congress on web and mobile processing ,BioMedical Engineering and informaytics(CWMP-BMEI 2017)
- Advantage: The proposed NU Library System will integrate the library process such as circulation, inventory, acquisition, and cataloging into a one web application. The mobile app will help the users to uncover books for a particular topic, borrow books and receive notification regarding due date or penalty..

1.3 Literature Review

- A Desktop Application of QR Code for Data Security and Authentication.
- Authors: Partiksha Mittra | Nitin Rakesh
- Publication : 2016 IEEE International Conference on Advance in Computer applications (ICACA)
- Advantage: It reduced the memory storage by redirecting to a webpage through the transmission and online acceptance of data.

1.3 Literature Review

- Neurorehabilitation Control Application: Development Using Ionic Framework.
- Authors : Lyudmila V. Babich, Dmitriy A. Svalov, Aleksey L. Smirnov and Mikhail V. Babich .
- Publication : 26th Telecommunications forum TELFOR 2018 .
- Publisher : IEEE.
- Advantage: It reduce the financial costs of application development and make application compatible with 98% of mobile devices users.

1.4 Problem Definition

- Educational institute have library which traditionally reply on pen paper method to manually get data analyse and generate records of the student.
- Some institutes may use computer to done work which take less time as compared to manual.
- There is no smart library for students each institute may consider different parameters. If you don't have library card , you cant get book. First , you make library card and then issue the book form library. Then you will fill the details given by librarian and librarian also fill the book details for their record get to know on which date which book is given to whom.

1.5 Scope

- It helps to reduce manual tasks in libraries.
- Student can search the available book online.
- Students will have facilities like requesting for a book extending deadline for return.
- If any other person wants to use they will use by paying the monthly or yearly fee.

1.6 Technology stack

- **For Web Application Front-end :**
- HTML, CSS, Javascript, Bootstrap
- **For Web Application Back-end :**
- PHP SERVER(WAMP/XAMPP/LAMP),MySQL
- **For Mobile Application front-end :**
- IONIC-4 IONIC-CLI (IONIC 4 and angular7 using typescript)
- **For Mobile Application back-end :**
- MySQL, PHP

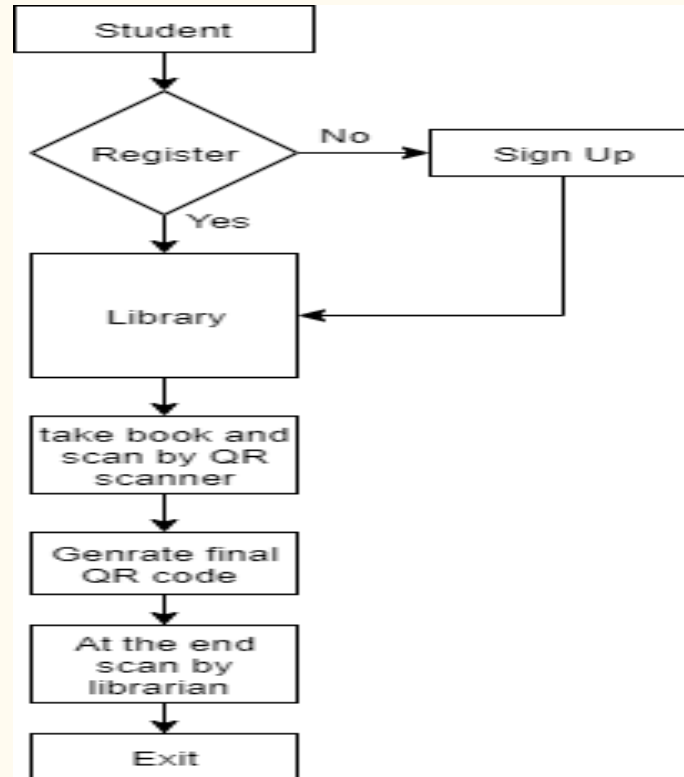
1.7 Benefits for environment & Society

- Any education institute can make use of it for providing information about author,content of the available books.
- It can be used in offices and modification can be easily done according to requirements.
- Due to this massive changes come in library in terms of queue and time it is beneficial for both student as well as librarian.

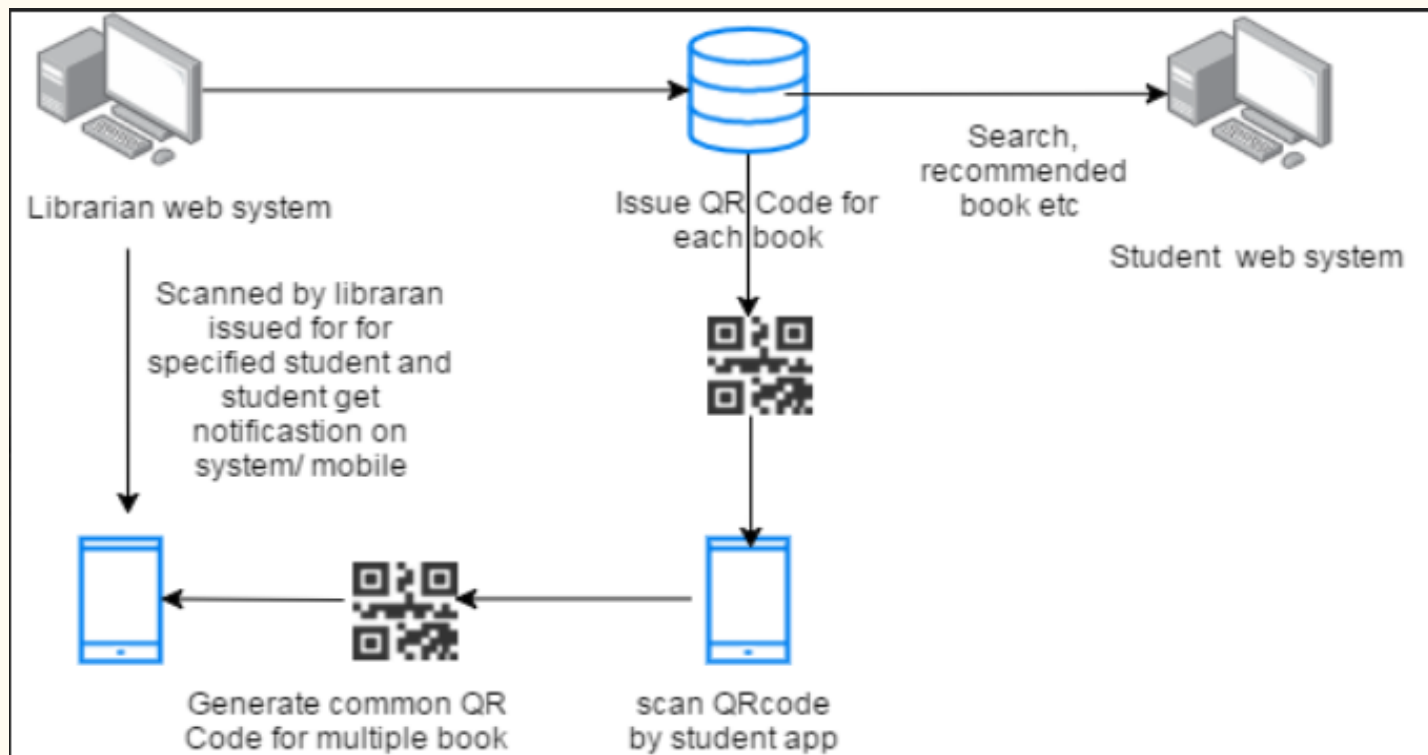
2. Project Design

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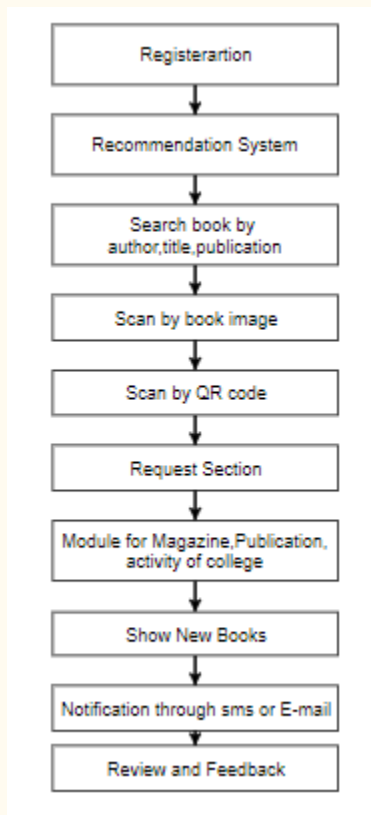
2.1 Proposed System



- Design



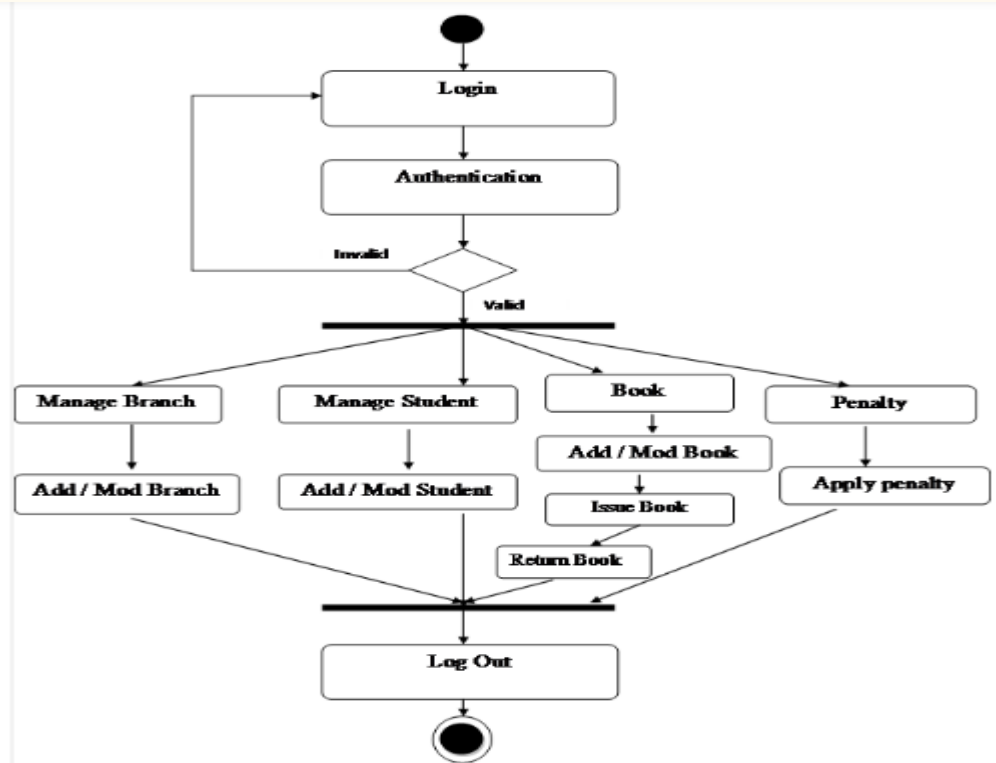
2.2 Design(Flow Of Modules)



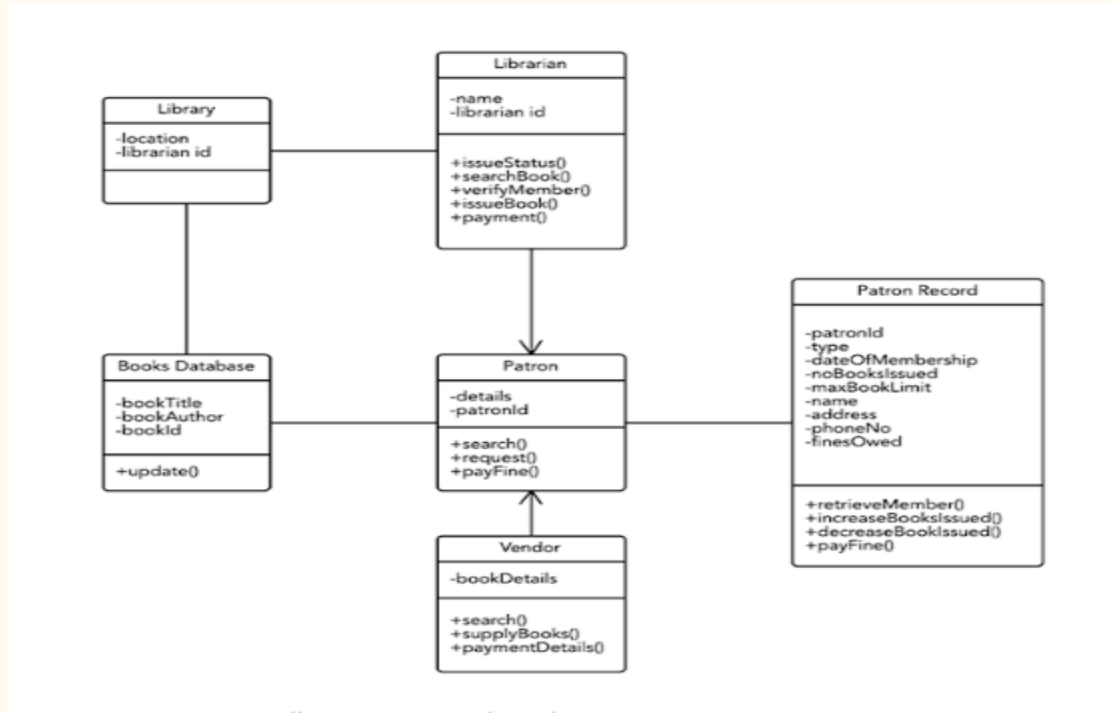
2.3 Sequence Diagram

Java	Dropdown
Core java volume-1 Fundamentals	
Effective Java	
Java Concurrency in Practice	

2.4 Activity diagram



2.5 Class Diagram



2.6 Module-1(Recommendation System)


- A recommendation system broadly recommends books to students best suited to their department and Domain.
- When a recommender is well implemented, it can greatly reduce the information overload and guide the student towards the information or book he or she is looking for. A good recommender can make the user feel empowered to make the right decisions in a short amount of time.
- Such a user experience is good for profit and student retention.

Module-2(Request for a book)


- It help students in the way of if he or she wants a new book then he or she can request for a book to librarian in request module.
- If there is 10 book only and you want a book you can send request to librarian he or she will registering book by your name.
- This module is very helpful in respect to students as well as for college,University and office people.


Module-2(continued)


AP SHAH IT


Welcome,
Admin


MENU


 Home

 Members


 Books

 Requested Books

 Admin

 Members Attendance

Home / Requested Books

 Request Information

10 records per page

Search:

ID	Title	Description	Status
1	English Expressways : Second Year	2019-11-07 08:35:12	Not Approved

Showing 1 to 1 of 1 entries

← Previous

1

Next →

Library Management System AP SHAH IT


Module-3(Notification)

- This module help students to remind them when they have to return the books.
- They can also get a message if they haven't return a book to the library on date and also get a message of fine for the late return.

Module-4(Books)

- In this student can see the availability of books.
- Also see the amount of books of a particular subject.

AP SHAH

Welcome,
Mohit

MENU

Home

Books

TRANSACTION

Borrowed Books

Request

Settings

About Us

Home / Books

Print Books QR Code

Print Books List










+ Add Book

Book List

All New Books Old Books Lost Books Damaged Books Subject for Replacement Books Hardbound Books

10 records per page

Search:

Book Image	QR Code	Title	ISBN	Author/s	Copies	Category	Status	Remarks	Action
	APSIT7LMS	Gintong Pamana Wika at Panitikan - Ikalawang Taon	971-07-1885-1	Lolita R. Nakpil Leticia F. Dominguez	12	Filipiniana	Old	Available	 
	APSIT6LMS	Even Big Guys Cry		Alex Karras	1	English	Lost	Not Available	 
	APSIT5LMS	Great Days of Whaling		Henry Beetle Hough	1	General	Damaged	Not Available	 

Module-5(Members)

- In this module admin can see how many students/members are present.

The screenshot displays the 'Members' module of the AP SHAH IT Library Management System. The interface includes a purple sidebar with navigation options: Home, Members (selected), Books, Requested Books, Admin, Members Attendance, Borrow, Borrowed Books, and Returned Books. The main content area shows the 'Members Information' section with buttons for 'Print Members QR Code', 'Print Members List', '+ Add Member', and 'Import Members'. A table lists members with columns for ID, Member Full Name, Type, Level, Section, Status, and Action. Two members are listed: Mohit R Jain (ID 123) and Sagar M Randive (ID 16204001). The page also features a search bar, a dropdown for records per page (set to 10), and pagination controls showing 'Showing 1 to 2 of 2 entries'.

AP SHAH IT

Welcome, Admin

MENU

- Home
- Members
- Books
- Requested Books
- Admin
- Members Attendance

TRANSACTION

- Borrow
- Borrowed Books
- Returned Books

Home / Members

Print Members QR Code Print Members List

+ Add Member Import Members

10 records per page Search:

ID	Member Full Name	Type	Level	Section	Status	Action
123	Mohit R Jain	Student	1	eeee	Active	
16204001	Sagar M Randive	Student	2	BE	Active	

Showing 1 to 2 of 2 entries

Library Management System AP SHAH IT

Module-6(Admin Profile)

- In this module if you want you can add admin.
- The part of this project is admin who can handle all this stuff.

The screenshot displays the 'Admin Profile' module of a web application. On the left is a purple sidebar with the logo 'AP SHAH IT' and a 'Welcome, Admin' message. The sidebar contains a 'MENU' section with links for Home, Members, Books, Requested Books, Admin (highlighted), Members Attendance, and a 'TRANSACTION' section with links for Borrow, Borrowed Books, and Returned Books. The main content area has a breadcrumb 'Home / Admin Profile' and a title 'Admin Information' with an '+ Add Admin' button. Below this is a table with 3 columns: Image, Full Name, and Action. The table contains 3 entries. At the bottom, it says 'Showing 1 to 3 of 3 entries' and has pagination controls for 'Previous', '1', and 'Next'.

Image	Full Name	Action
	Admin A Admin	Search Edit Delete
	Pradeep Pradeep Pradeep	Search Edit Delete
	Anonymous Anonymous Anonymous	Search Edit Delete

2.7 References

- Development of an Intelligent Web Interface to Online Library Catalog Databases.
- Library in Everyone's Pocket With reference to Bundelkhand University App.
- National University Library System: A Mobile and Web Application Framework for National University Learning Resource Center.
- A Desktop Application of QR Code for Data Security and Authentication.
- Neurorehabilitation Control Application: Development Using Ionic Framework

3.Future Scope

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Future Scope

- It will help student to find the good book for their better understanding.
- It will help to education industry to save their manual work.
- Where all the other way to save time and manual work are costly it is comparatively cheaper.

Thank You

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