

A Project Report on

## **Novel Framework Smart Library**

Submitted in partial fulfillment of the requirements  
of the degree of

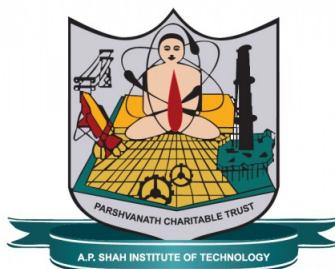
**Bachelor of Engineering**

in  
**Information Technology**

by  
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Under the guidance of

**Prof. Kaushiki Upadhyaya**



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2019-2020

## CERTIFICATE

This is to certify that the project Synopsis entitled "***Novel Framework Smart Library***" Submitted by "***Pravin Jaiswal (16104058 )***", "***Mohit Jain(16204033)***", "***Sanjog Mhasde (15204006)***" for the partial fulfillment of the requirement for award of a degree ***Bachelor of Engineering in Information Technology*** to the University of Mumbai, is a bonafide work carried out during academic year 2019-2020

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## **Declaration**

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Date:

## **Abstract**

Smart Library is a project which aims in developing a computerized system to maintain all the daily work of library. This project has many features which are generally not available in normal library management systems like facility of recommendation system in that user can see most of the recommended books which help the to choose good books for better understanding, user login and teacher's login.

In that we build mobile application i.e. QR code with the help of Ionic framework. Ionic framework comes under hybrid application ,in hybrid Write one time code and build it on all platform like window, android and ios. Ionic framework developed by GOOGLE. So, its one the most popular framework for designing hybrid app.

We have used both web as well as mobile application, mobile application for scanning the code available on book which is come under ionic framework it is possible to significantly reduce the financial costs of application development and make application compatible with 98 percent of mobile devices users.

It also has a facility of admin login through which the admin can monitor the whole system. It has also a facility where student after logging in their accounts can see list of books issued and its issue date and return date and also the students can request the librarian to add new books by filling the book request form. Our system also notifies the student when he/she logins into his/her profile if he/she has not returned a particular book. The system also charges a student certain charges if they have not returned their books. We have a unique identification for each book which would reduce the queue in the library . This will be implemented with the help of QR code. The librarian after logging into his account i.e admin account can generate various reports such as student report, issue report, teacher report and book report. Overall this project of ours is being developed to help the students as well as staff of library to maintain the library in the best way possible and also reduce the human efforts.

It's a responsive web application for libraries of all sizes that want to modernize their services and improve staff productivity. This software can be used both web-based or local host based.

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# **Chapter 1**

## **Introduction**

In this smart library we have a recommendation system which help student to choose good book for better understanding which help them to gain right knowledge regarding that subjects.

Their are two application you will see web as well as mobile application , mobile application like QR code scanner which will use to scan the QR code available on the book we will select all the book which are required by scanning the code available on the book and generate the final QR code which is scan by the librarian one time scanning device which help to reduce the queue in less time or we can say reduce the queue.

Library is the systematic method of managing the whole library through an interactive interface. Using Smart Library, the librarian can handle basic functions of a library such as storing all the library item details like author name, edition, price, books, details of students, record of borrowed and issued books, fines, generate QR Code, etc. of all the books in a library database. It helps to provide information on any book present in the library to the user as well as a faculty.

Library keeps a track on all the books that are issued, returned and added to the library. Overseeing fee collection and fine issued to late return on the book are other important functions of Smart Library. Overall, having a Smart Library is important for an efficient, user-friendly, fast and secure library management - be it a small size college library having limited users and books or a large size public library.

The smart library is very helpful to standalone libraries as well as libraries in schools, colleges, educational as well as other institutes and sometimes also in places of worship. They can take advantage of basic aspects of providing information about the materials and their content. Our Smart Library have a QR code function with the help of which we can save significant costs on paper, printing, manual labor, etc.

Smart Library is helpful in better decision making about what sort of materials need to be stocked or improved. Maintenance is not time-consuming. The library staff gets great help from the software data. Work of the library staff gets smoother and even the work of tracking different modules in the software can be divided among the staff for better control.

## **1.1 Objectives**

Project aims and objectives that will be achieved after completion of this project.

The aims and objectives are as follows:

- Online book issue.
- Request column for librarian for providing new books
- Student login page where student can find books issued by him/her and date of return.
- A search column to search availability of books
- Online notice board about new books, magazine.
- Borrowing and returning books function.
- Dynamic settings (Number of allowed books to borrow, Penalty, and Allowable days).
- Using QR Scanner to borrowing books.
- Scan QR code of members using QR Scanner.
- Search report using date from and date to.
- Member's record management.

## **1.2 Problem Definition**

Educational institutes have library which traditionally rely on pen paper method to manually get data analyze and generates records of the students. Some institutes may use computer to done work which take less time as compared to manual. There is no smart library for student search 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. After that we have returned the book as per the expected dates. If you delayed to return the book you will be pay the fine as per the amount set by the college Dean.

Having an official record review process can actually hinder timely feedback the rest of the year if the process is carried out without proper planning lack of documentation create problems became problem itself. This means the problem is not submitted to the librarian so it creates problem and possibly have chances to lost the books it cost a lot both in terms of time spent and money invested in book.

## **1.3 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.
- Big organization can also use this application.

## **1.4 Technology Stack**

**The Following technologies are :**

**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

# Chapter 2

## Literature Review

- National University Library System:A Mobile and Web Application Framework for National University Learning Resource Center.Amber Jade A. Baetiong Joyce A. Balinquit Jeremiah T. Malicdem Kate S. Pangan National University – Philippines National University – Philippines National University – Philippines National University – Philippines College of Computing and College of Computing and College of Computing and Information Technology Information Technology Information Technology Information Technology Manila City, Philippines Manila City, Philippines Manila City, Philippines Manila City, Philippines baetiong.aj@gmail.com joycebalinquit@gmail.com jmalicdem45@gmail.com kpangan33@gmail.com ©2018 IEEE.
  - The technology continues to progress as it paves way for the creation of a better and meaning life for humanity. The internet has become more popular today than those decades ago. The efficiency of various internet applications overshadows the importance of the library in the community. Nowadays, students prefer to search for information through the web than to go to the library. Librarians are settled with library systems that are bound only with the use of computers and laptops. However, the use of personal computers delimits the capacity of the librarian to work efficiently as he or she is constrained with its use as it is now allowed to move freely. Libraries would be more efficient and timely when the web and mobile application collaborates. 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.
  - Learning is the main reason people enroll in schools. As the civilization continues to develop and be innovative, mobile technologies begun to merge with the traditional process of gaining knowledge and creates learning opportunities for the students to build their interests and explore more about their subjects and goals. The use of technologies becomes a significant part of our daily lives since it begun to help people in collecting data and storing information.

- **A Desktop Application of QR Code for Data Security and Authentication**  
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“QR” is abbreviated as “quick response,” is a reference to the speed at which the huge amount of information it contains, can be decoded with scanners. QR Code shown in figure 1 is a two-dimensional or matrix bar code developed in Japan by Denso Wave. They are sometimes referred to as 2D codes, 2D barcodes, or mobile codes. These are machine readable codes and comprise of black modules on white modules. It holds thousands of alphanumeric characters while the barcode comprises of only 20 characters. This two-dimensional symbol was invented for tracking of automotive parts, but these codes are increasingly found in other fields as well like linking to websites, product labels, advertising campaigns, SMS, contact details, email messages and much more. The information stored in codes varies from tracking information of the products produced in various industries to information of the business on a business card that redirects to the specific website. These small sized codes can also be hidden inside the image.

This document examines the QR codes and realizes the significance of data, information and distributes it in such an obscured or non-obsured way so that authorized people should be able to view it. At the same time, the data should remain publicly accessible but it should either be accessible to the authorized personnel or the ones who have the appropriate tools to view it. In order to improve the security of the information stored in QR code, a 2-D code encryption and decryption method based on cryptic data is proposed in this paper .An interesting use of QR code is to exchange information. Information exchanged can be private information exchange or public information exchange. The public information exchange using QR codes can take place with the help of existing tools and application, wherein no encryption is required. A far as the private information exchange is concerned encryption is required for the secured transactions.

This paper is further divided into five sections. Section first we have introduced QR code and its applications. Second section shows recent application area of QR codes. In third section we have proposed the application of QR code which is a developed application that helps in secure transfer of question papers via websites and interfaced among various universities.

- **Development of an Intelligent Web Interface to Online Library Catalog Databases. Danny C.C. POO Teck Kang TOH**

Library catalog databases are different from other kinds of textual databases, such as full-text databases and abstracts databases. It has the following characteristics:

The database records are very terse. Only information needed to identify the document uniquely is stored in the database - mostly title, author and publication information, although information from content pages is increasingly recorded. The records contain manually assigned index terms (usually taken from the Library of Congress Subject Headings) and a classification code (as part of the location number). Most of the records are of books and journal titles. They tend to cover a broader subject area than, say, journal articles and technical reports. They may also comprise several sub-documents which may not be described in the catalog record. For example, books contain several chapters and journals contain many articles.

Retrieval approaches that work well for full-text databases may not work well with library catalog databases. A digital library has to handle different types of records and documents, and probably has to use different retrieval approaches for each type. We believe that online library catalogues will be part of digital libraries for a long time to come, and that it is important to develop interfaces to help users search them effectively. It is well-known that users have difficulty using present-day online catalogs, most of which still require queries to be specified using Boolean expressions. Several researchers have investigated the problems users encounter, as well as the search strategies that experienced librarians use. For example, users have difficulty matching their search terms with those indexed in the online catalog. They have difficulty coming up with synonyms as well as broader and narrower terms related to their topic. Cousins found that many subject queries were not expressed at the level of specificity that was appropriate or suitable for searching the online catalog.

- **Library in Everyone's Pocket With reference to Bundelkhand University App** Mohit Gupta MLISc, Student DLIS, Bundelkhand University, Jhansi – India mohitg1407@gmail.com Sridevi Jetty Deputy Librarian Central Library Bundelkhand University Jhansi – India sridevi.jhs@gmail.com

Library mobile applications can be considered as pocket library or in hand library. The ‘search term’ is the initial approach which leads the user towards the use of Mobile apps such as: web browsers, encyclopedia applications and the RSS feeds. Currently many users are absolutely dependent upon the mobile apps. In this revolutionary era of digitization [1], it is the duty and responsibility of a library manager or knowledge expert to be excelled with these ICT developments.

The mobile application of Bundelkhand University was developed and launched by the authors on 25th April 2017 for Bundelkhand University is a complete package of knowledge and services. The App does not only have a normal OPAC but also provides a number of sections and their facilities like access to E-resources that are subscribed by the library. The App also provides access to various E-resources, audiovisual lectures of faculties on various subjects etc. Also the user can search for the desired document and its availability, issue status of the book, feedback, appointment booking with the faculties of the university and can also know about daily records updating. A user can also enroll for membership of library and reap all the facilities of student management system with their login credentials. The app also provides dictionary services. The application is beneficial to the library managers/knowledge experts and the users. A librarian can transform a non-user to user with the help of a library App with its variety of services provided. These Apps are a big rescue on part of the library patrons to search web OPAC for any kind of document and information details.

A library mobile App is an additional and essential application of mobile technologies to convert library services into an easier and better mode of access by providing assistance in various ways with e-services and connecting. The Beta results of Bundelkhand University mobile App through android smartphones has shown that the nature and access have become more affordable, easier and reliable without any bug. There is a rapid increase in the number of users who uses internet on mobile App and web apps like: Facebook, Whatsapp etc. These apps and web apps are most popular among youths.

- **Neurorehabilitation Control Application: Development Using Ionic Framework , Lyudmila V. Babich, Dmitriy A. Svalov, Aleksey L. Smirnov and Mikhail V. Babich , 2018 26th Telecommunications Forum (TELFOR)**

This article discusses development of the crossplatform mobile application for medical devices control purposes using the Ionic framework. The SYMPATHOCOR-01 was used as an example of controlled medical device. The developed application helps to reduce the burden on physicians, performing actions automatically. The application allows to manage the patient's treatment process, automatically fills the patient's treatment history, stores patient data in an embedded database. Using Ionic framework with a cross-platform approach, it is possible to significantly reduce the financial costs of application development and make application compatible with 98 percent of mobile devices users.

This paper describes crossplatform application development for neurorehabilitation. This application could help to automate the management of medical records for a physician. At the moment, the application supports only SYMPATHOCOR-01 device and has not been released. In the future, it is possible to support other neuroelectrostimulation devices. Cross-platform approach significantly reduces the financial costs of application development, accelerates development and facilitates application support. There is no need to develop separate applications for each of the mobile OS. Further development of this work is remote neurorehabilitation system creation. This system will consist of mobile applications for a physician and a patient, which will interact via the centralized server over the Internet. Server will communicate with DB, which stores all patient and physician data.

# **Chapter 3**

## **Proposed System Architecture/Working**

The existing system of The College Library is run manually by entering data in books and keeping track of all the data in the books. The different processes involved are:

- To maintain book issued details of Students and Faculty manually.
- To maintain book return details.
- To maintain details of the current books stock.
- Calculating Penalty for Books CD's.
- To maintain the inventory details.

### **Drawbacks of the existing system**

- The existing system has lot of problems such as :
- The entire database is maintained manually which is rather tedious and error prone.
- Time delay is more because the librarian has to go through many records for entering the transactions of different batches and generating reports etc.
- Inventory Management of the Library becomes difficult as the number of books grow.

# Proposed System

Our proposed system is based on web application which will eliminate the need of physical work for library and make the entire process hassle-free.

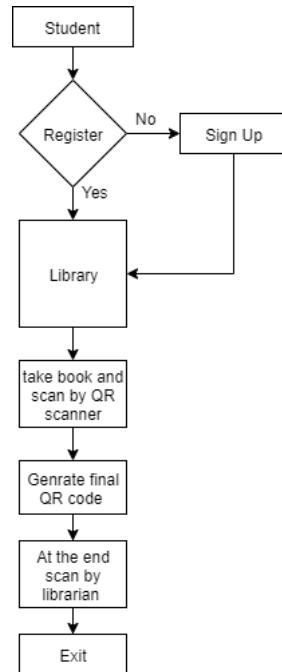


Figure 3.1: Proposed System

The proposed system tries to solve the problems mentioned above. The main objective of the proposed system is to provide information instantly as and when it is required. The main objective is to make the Library information details more efficient. This system should maintain different data files, so that the data can be retrieved easily and in an efficient manner. The system is very interactive. It should ensure process integration to the desired extent, various reports should be generated as the need be. This system should also ensure that there is no redundancy in the recorded data.

# Chapter 4

## Project Design

The design of our project

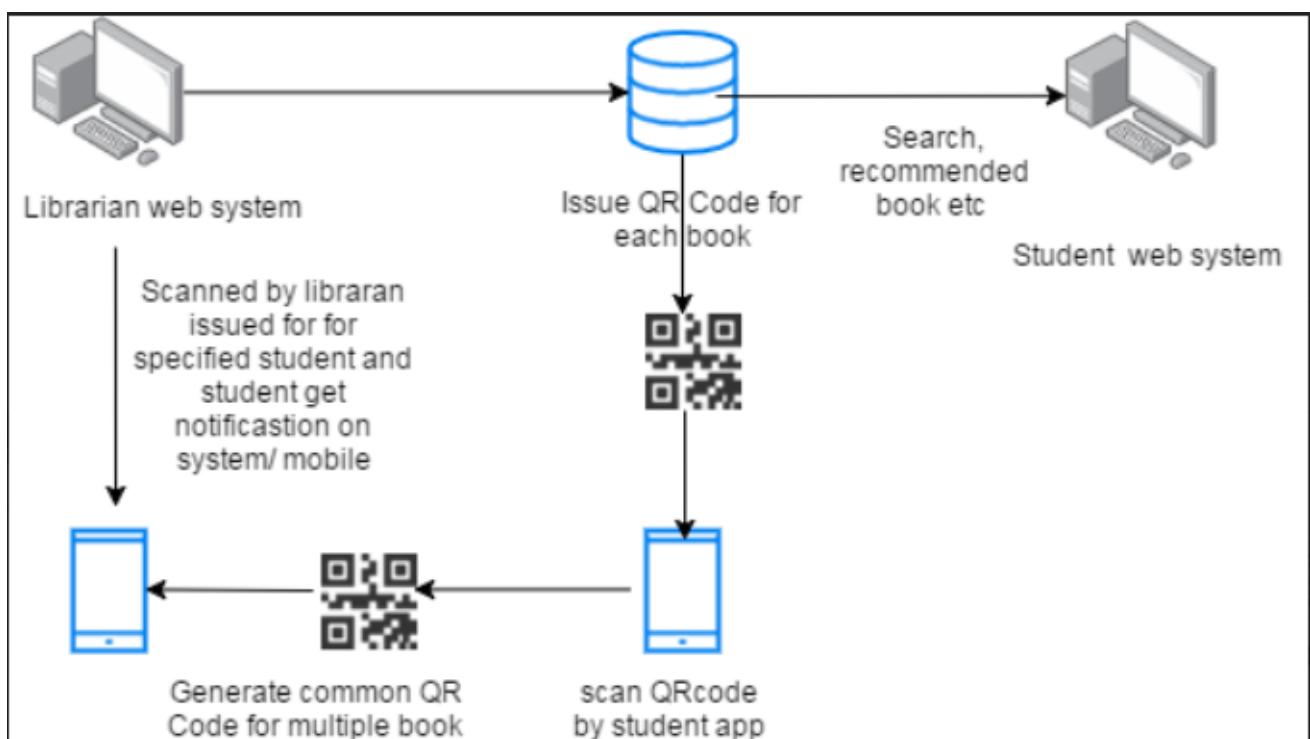


Figure 4.1: Hierarchy diagram

As you can see first of all student need to register themselves for this process after this they can search book by author name , publication and etc. Student need to scan the QR code which is available on the book ones you finished by scanning book , the amount of book you want(ex. 3 to 4 books ). It gives you a final code which is scan by the librarian QR scanner.This process is easy and simple , no need to waste your time on queue it will reduce the time of both students and librarian. We try to reduce time as much as possible and queue too.

## 4.1 Basic Diagram

### 4.1.1 Activity Diagram

The Activity design of our project

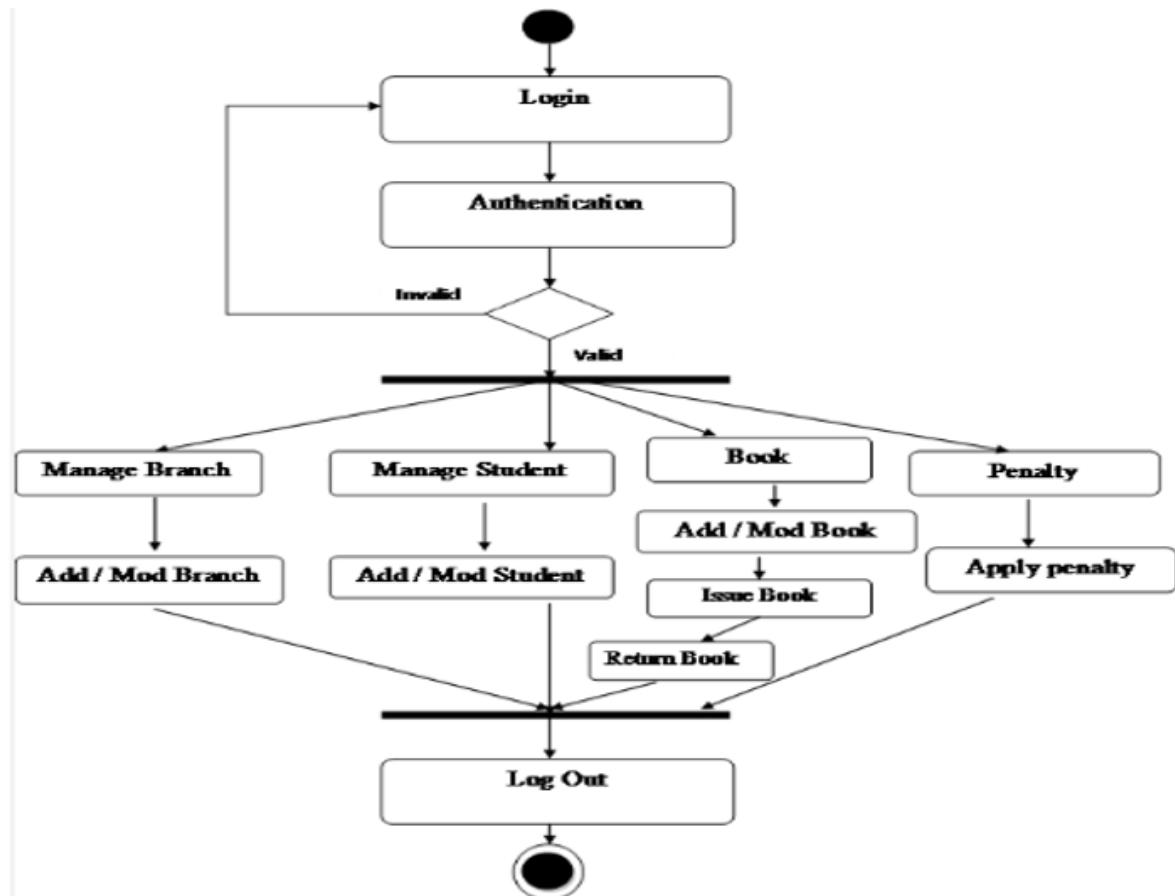


Fig 4.1.1: Activity Diagram

In this students can perform the following activity. Activity is to manage all the book records, in record amount of books, records of issued book.manage book by the branch name add or remove the branch name ,manage student, add book ,remove book,send messages of penalty if anyone not return the book on time.This all activity is perform by the admin end.

Student will scan the code which is available on the book and when he will take the amount of books he want then one final code will generate and the last process is librarian will scan the code and all the records are fetched from this.

#### 4.1.2 Class Diagram

The class diagram is the main building block of object-oriented modeling. It is used for general conceptual modeling of the structure of the application, and for detailed modeling translating the models into programming code.

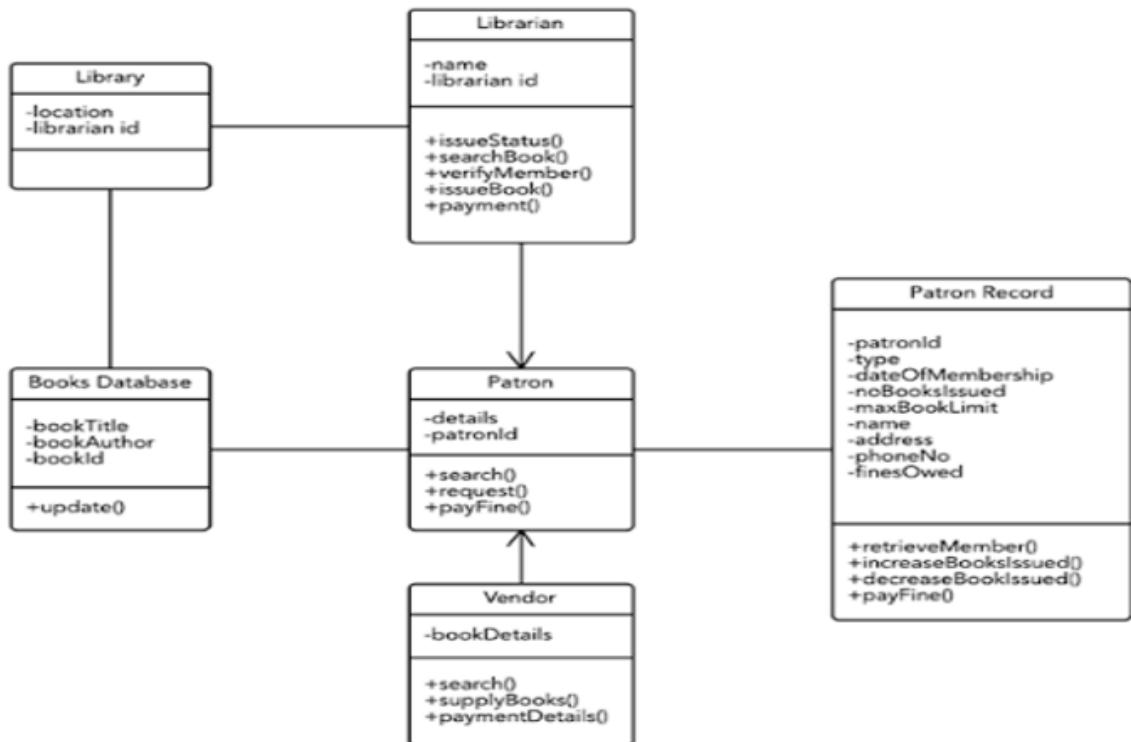


Fig 4.1.2: Class Diagram

Here the class diagram of our projects the various parameters and functions performed by each class of users.

### 4.1.3 Sequence Diagram

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.

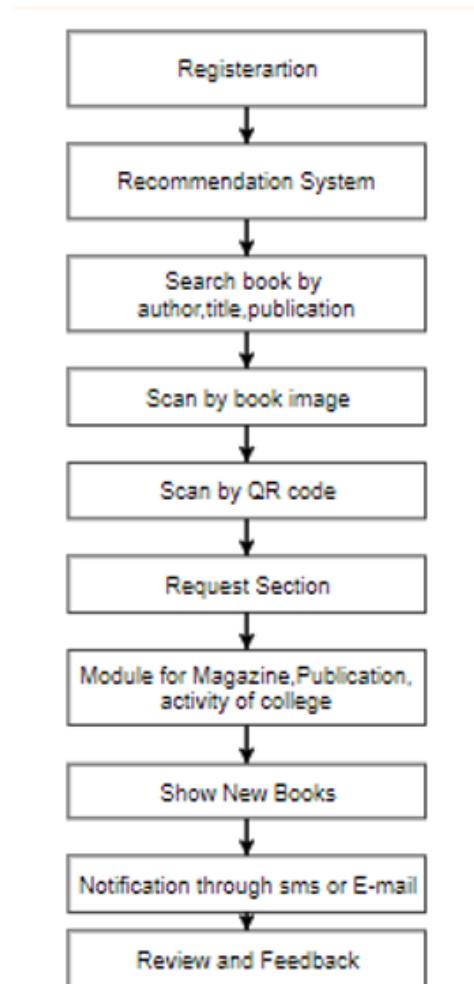


Fig 4.1.3: Sequence Diagram

Here the sequence and interactions between various objects is depicted. The students interact with website and above is the process which is done by the student sequentially.

#### 4.1.4 Use Case Diagram

Use case diagram shows the relationship between a user of a system and its use cases.



Fig 4.1.4: Use Case Diagram

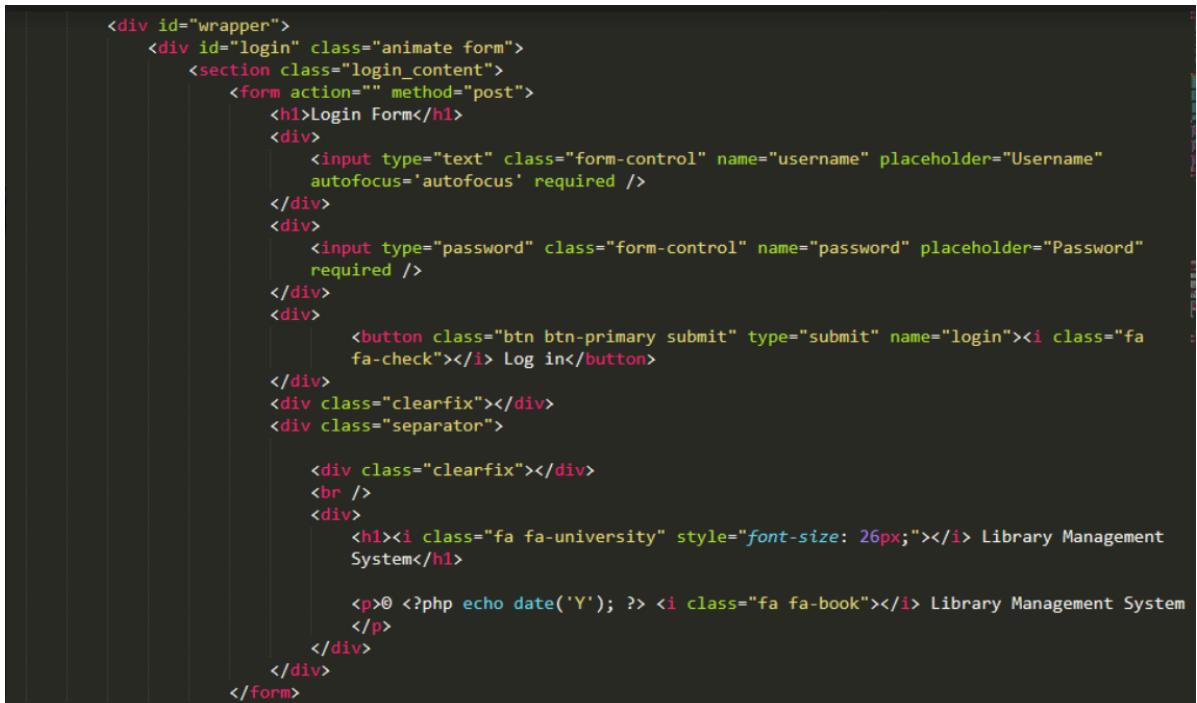
Here, the Use case diagram of Novel framework Management system is showing the various roles performed by Students and Librarian. These include login to the site , search book, request for a book , Adding book, etc. The Librarian has an additional task of sending notification to the students about the books

# Chapter 5

## Project Implementation

### 5.1 Code Snippets

Our project is a web based application built using HTML,css, Javascript,Bootstrap for novel Framework Library System in an educational institute.



```
<div id="wrapper">
    <div id="login" class="animate form">
        <section class="login_content">
            <form action="" method="post">
                <h1>Login Form</h1>
                <div>
                    <input type="text" class="form-control" name="username" placeholder="Username" autofocus='autofocus' required />
                </div>
                <div>
                    <input type="password" class="form-control" name="password" placeholder="Password" required />
                </div>
                <div>
                    <button class="btn btn-primary submit" type="submit" name="login"><i class="fa fa-check"></i> Log in</button>
                </div>
                <div class="clearfix"></div>
                <div class="separator">
                    <div class="clearfix"></div>
                    <br />
                    <div>
                        <h1><i class="fa fa-university" style="font-size: 26px;"></i> Library Management System</h1>
                        <p>@ <?php echo date('Y'); ?> <i class="fa fa-book"></i> Library Management System</p>
                    </div>
                </div>
            </form>
        </section>
    </div>
</div>
```

Fig 5.1: Admin Login

This code is for login authentication.



Fig 5.2: Login Forms For Students.

This is code of review section in that ones student finished his reading work after that he will review the book share his thoughts and experience related to that book. So his review on book will help others to choose their idol book for better understanding.

```

1 <?php include ('header.php'); ?>
2
3     <div class="page-title">
4         <div class="title_left">
5             <h3>
6                 <small>Home / Books</small> / View Individual
7             </h3>
8         </div>
9     </div>
10    <div class="clearfix"></div>
11
12    <div class="row">
13        <div class="col-md-12 col-sm-12 col-xs-12">
14            <div class="x_panel">
15                <form method="POST">
16                    <div class="x_title">
17                        <h2><i class="fa fa-info"></i> Individual Information</h2>
18                        <ul class="nav navbar-right panel_toolbox">
19                            <li>
20
21                                <a href="book.php" style="background:none;">
22                                    <button class="btn btn-primary"><i class="fa fa-wrench-left"></i>Recommendation</button>
23                                </a>
24                            </li>
25
26                                <a style="background:none;">
27                                    <button type="submit" class="btn btn-primary" name="request"><i class="fa fa-help-left"></i>Request For Book</button>
28                                </a>
29                            </li>
30                        </ul>

```

Fig 5.3: Review's Code

This code is for request section. Several times it was happened with student that he want or she want that particular book but that book is accidentally is not available in library ,so in our project we made one request section in that student ca request for that book he want.

```

<thead>
<tr>
    <th>ID</th>
    <th>Title</th>
    <th>Description</th>
    <th>Status</th>

```

```

</tr>
</thead>
<tbody>

<?php
$result= mysql_query("select * from request r INNER JOIN book b ON r.book_id=b.book_id
        where r.userId='$id_session' order by r.rId DESC") or die (mysql_error());
while ($row= mysql_fetch_array ($result) ){
$rid=$row['rId'];
?>
<tr>

    <td><?php echo $row['rId']; ?></td>
    <td><?php echo $row['book_title']; ?></td>
    <td><?php echo $row['req_date']; ?></td>
    <td><?php if($row['request_reply']=='0'){
        echo "<span style='color:red'>Not Approved</span>";
    }else{
        echo "<span style='color:green'> Approved</span>";
    }
    ?></td>

```

Fig 5.4: Request's Code

Librarian will see request of all user and then he'll see branch of that student ad then will talk to their respective Head Of Department(H.O.D.) sir and after discussing with him will serve hat book as soon as possible to that student.

This code is for adding member the process done by the admin.

```

<thead>
<tr>
    <th>ID</th>
    <th>Title</th>
    <th>Description</th>
    <th>Status</th>

```

```

</tr>
</thead>
<tbody>

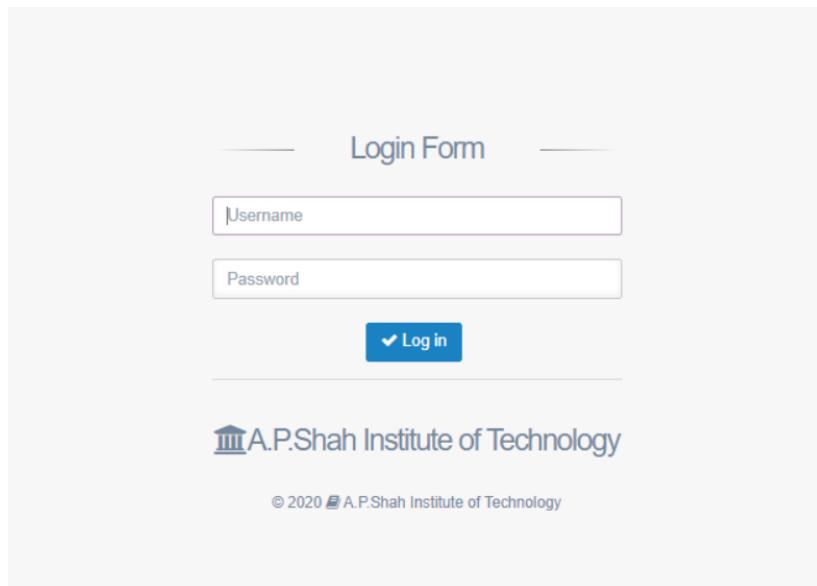
<?php
$result= mysql_query("select * from request r INNER JOIN book b ON r.book_id=b.book_id
        where r.userId='$id_session' order by r.rId DESC") or die (mysql_error());
while ($row= mysql_fetch_array ($result) ){
$rid=$row['rId'];
?>
<tr>

    <td><?php echo $row['rId']; ?></td>
    <td><?php echo $row['book_title']; ?></td>
    <td><?php echo $row['req_date']; ?></td>
    <td><?php if($row['request_reply']=='0'){
        echo "<span style='color:red'>Not Approved</span>";
    }else{
        echo "<span style='color:green'> Approved</span>";
    }
    ?></td>

```

Fig 5.5: Adding Member's Code.

## 5.2 Result



The image shows a web-based login form titled "Login Form". It features two input fields: "Username" and "Password", both with placeholder text. Below the fields is a blue "Log in" button with a checkmark icon. At the bottom of the form is the A.P.Shah Institute of Technology logo and a copyright notice.

Username

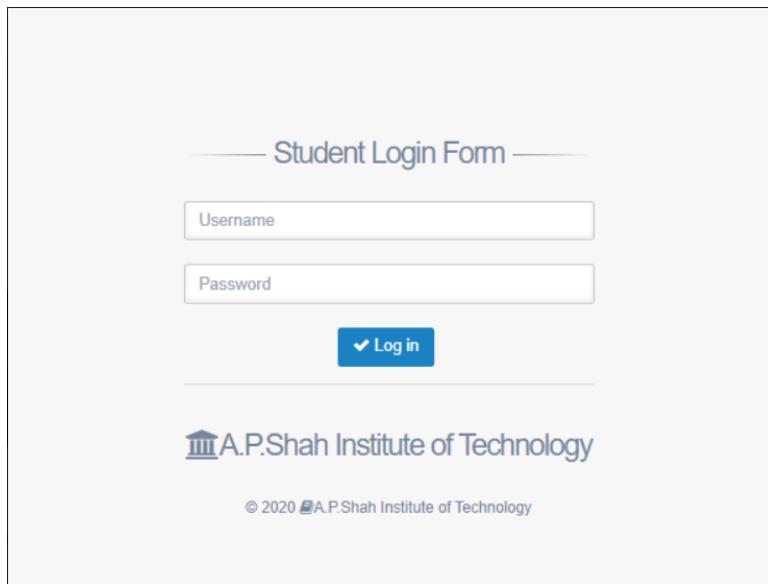
Password

✓ Log in

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Fig 5.2.1: Admin Login



The image shows a web-based login form titled "Student Login Form". It has two input fields: "Username" and "Password", both with placeholder text. A blue "Log in" button with a checkmark icon is positioned below the fields. The form includes the A.P.Shah Institute of Technology logo and a copyright notice at the bottom.

Username

Password

✓ Log in

A.P.Shah Institute of Technology

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Fig 5.2.2: Student Login

This is the home page of our project when you will open the site it will look like exactly this.

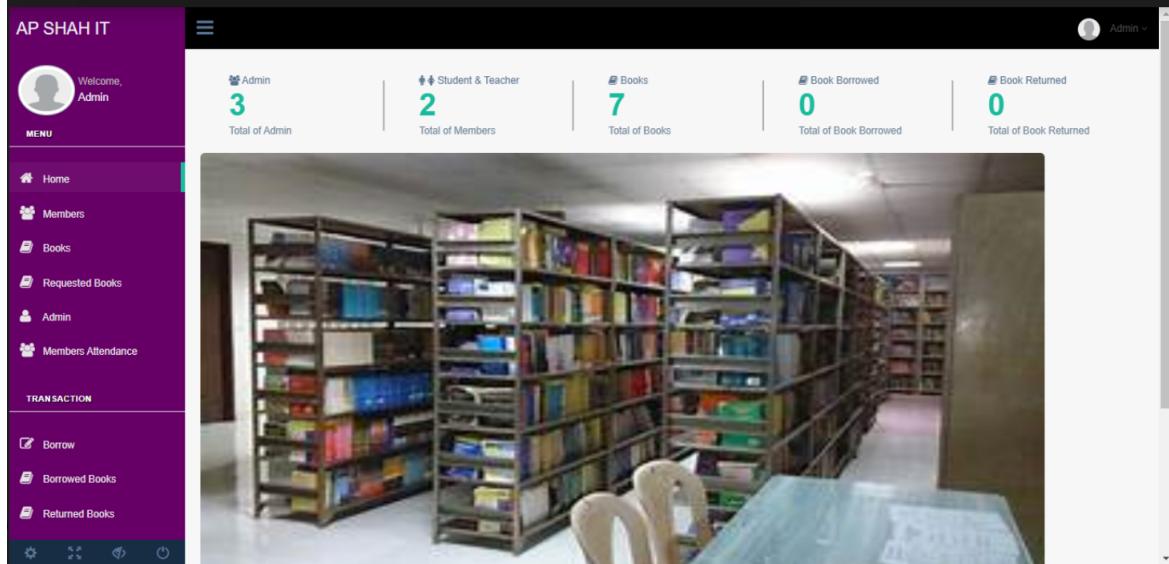


Fig 5.2.3: Home Page

This is the adding member section which will handle by the admin Panel.

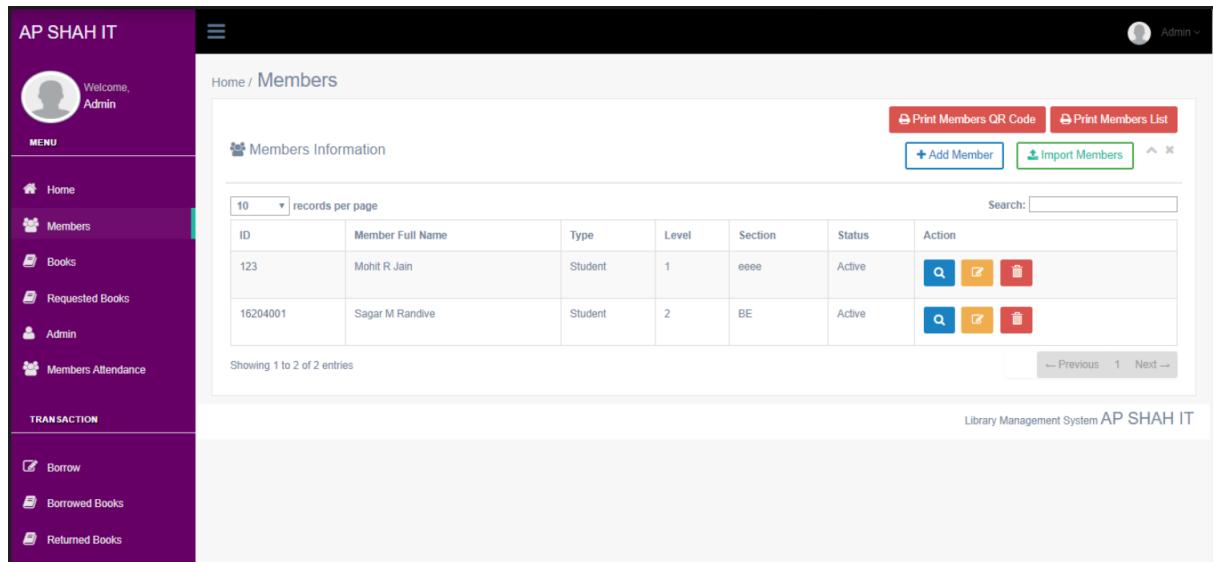


Fig 5.2.4: Adding Member

This code is for review section in that ones student finished his reading work after that he will review the book share his thoughts and experience related to that book. So his review on book will help others to choose their idol book for better understanding.

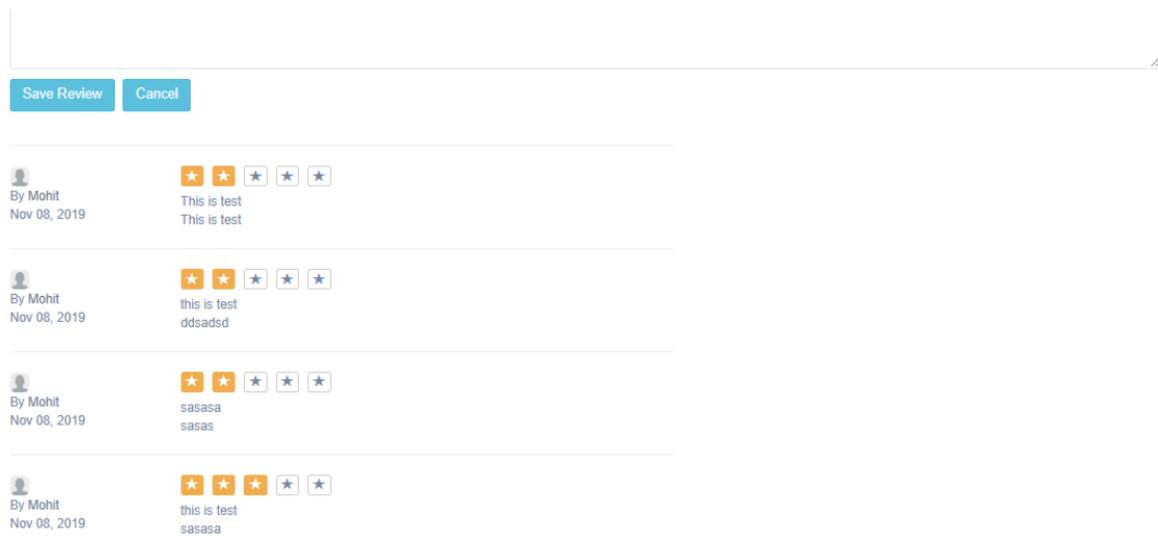


Fig 5.2.5: Review Page

# Chapter 6

## Testing

This is mobile application which is made under Ionic Framework which come under hybrid application ,Here we provide login with other social media platforms like facebook, twitter and at last with google.

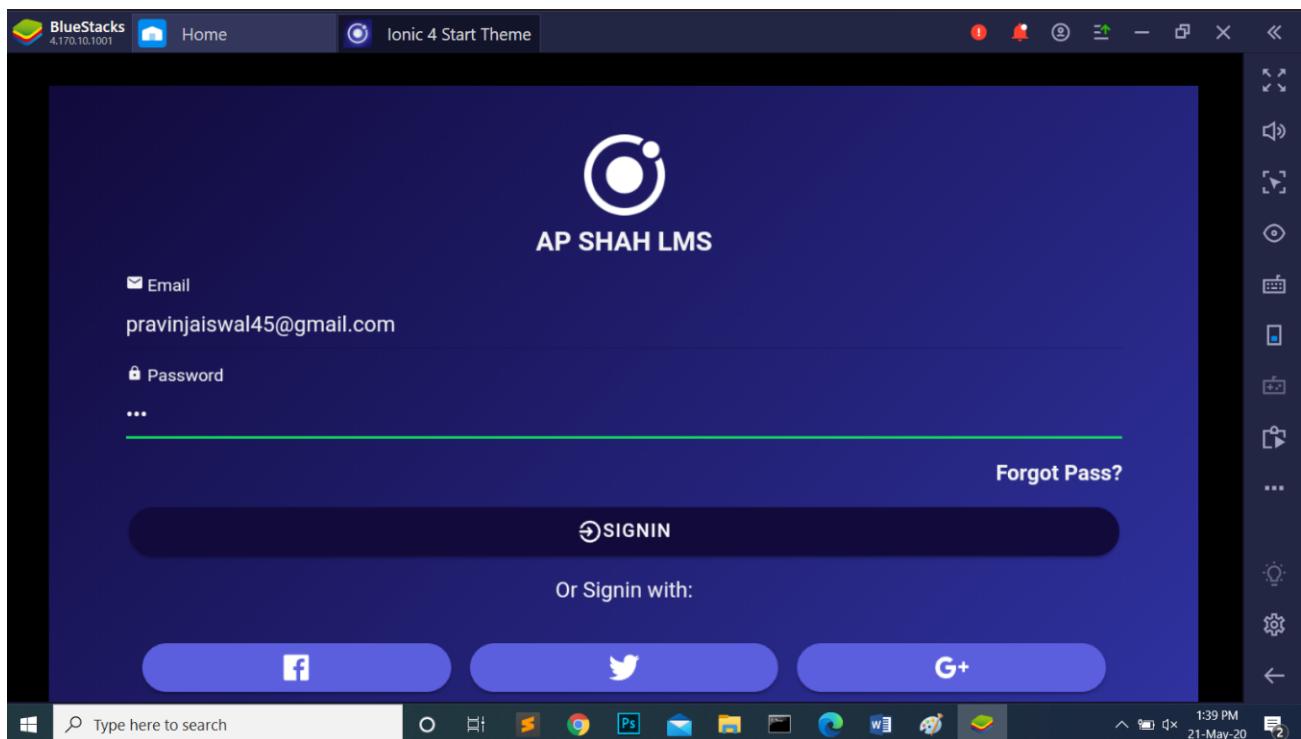


Fig 6.1: Login Page

This is when you are ready for scanning.

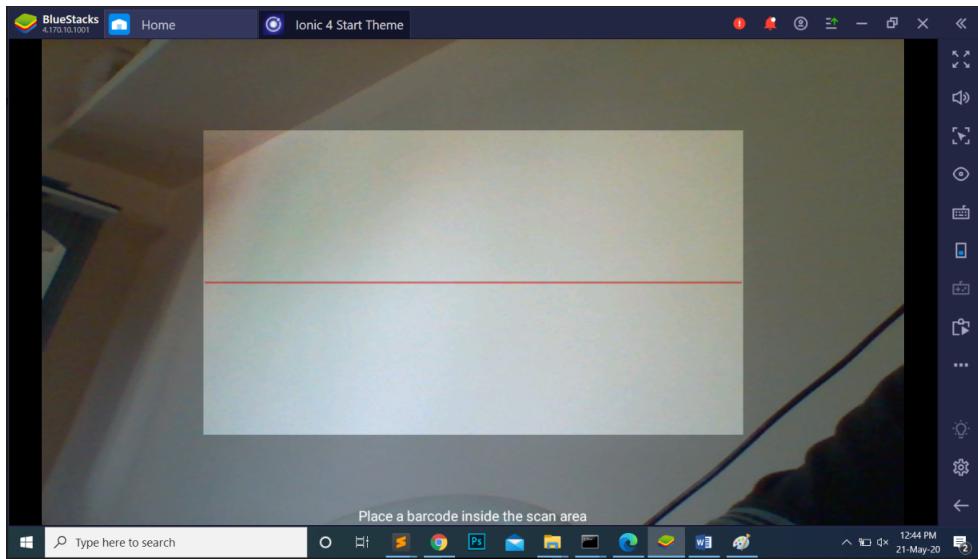


Fig 6.2: Ready For Scanning

process of scanning a QR code which is available on the book.

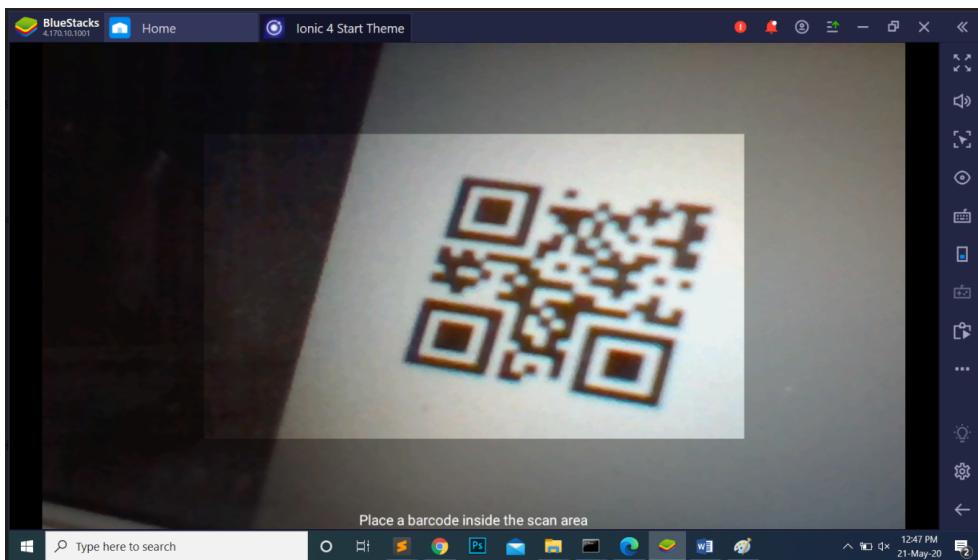


Fig 6.3: Scanned

this process come into the picture when student are done with his book choosing work. After that generating final qr code come in to the picture.

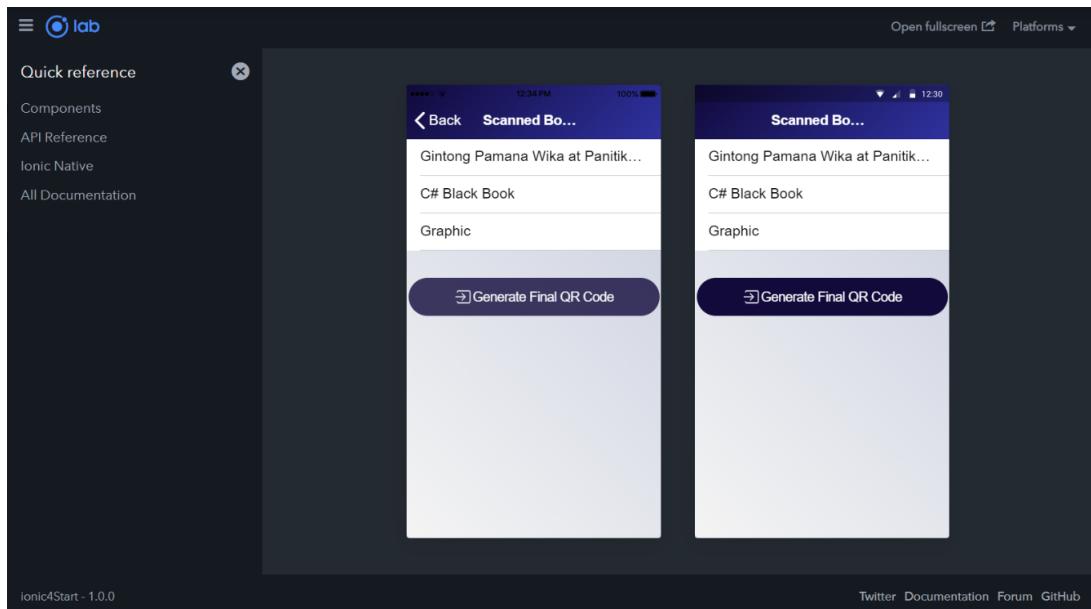


Fig 6.4: List of Books

The final process is when you done with the scanning part then after it will generate final QR code .Which will scan by the librarian.

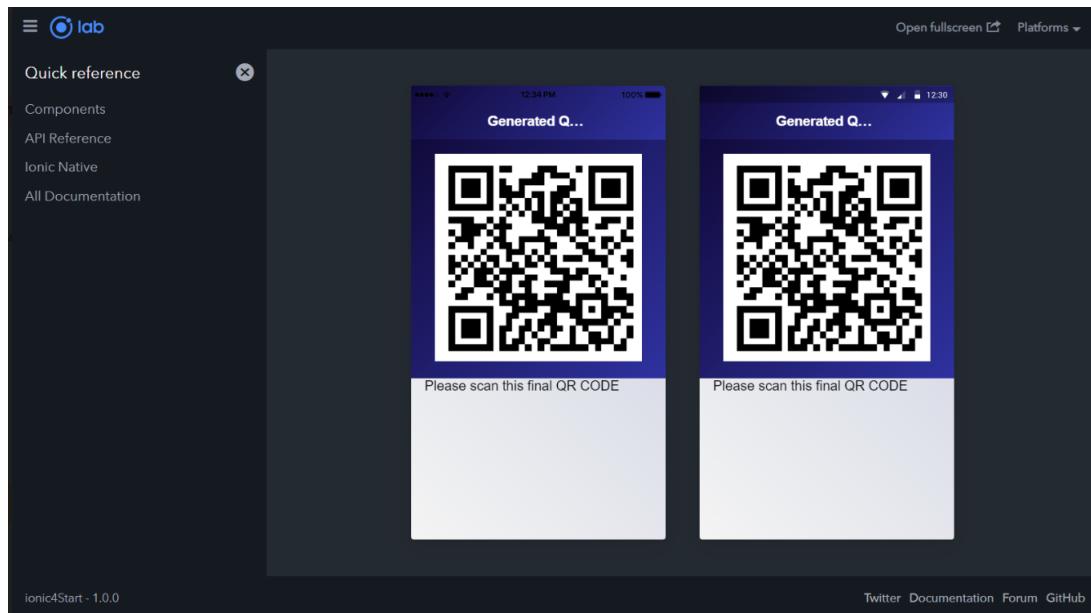


Fig 6.5: Final Scanning

# **Chapter 7**

## **Conclusion And Future Scope**

### **7.1 Conclusion**

Our proposed system will be a progressive web-app and mobile-app which will make the online Library system hassle free. Along with elimination of mostly physical works and also reduce the time of student who stands in a line for their chance to collect the book. Also, educational institutes will not have to invest a hefty amount for developing a customized recommendation system as our proposed system will provide the same facilities. This is cost effective as well as saves time compare to the existing system.

### **7.2 Scope**

The Novel Framework Library system will not only evaluate library performance but also escalate the educational institute's growth and increase it's capacity and overall quality. Our Novel Framework Library system will also save cost of the educational institutes and the evaluation process can be changed according to criteria of different institutes. It also helps the librarian's to reduce their manual work on individual level based on the previous proposed system which will serve as in input to data analysis. Data as a student books report(dates),penalty report,amount of books, etc. Based on the data analysis a new report can be generated which will help the educational institute to take further important decision.

# Bibliography

- [1] Partiksha Mittra Department of Computer Science and Engineering Amity University Uttar Pradesh Noida, India pratikshamittra@gmail.com 2018.
- [2] Nitin Rakesh Department of Computer Science and Engineering Amity University Ut-tar Pradesh Noida, India nitin.rakesh@gmail.com
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- [4] Christopher S.G. KHOO Centre for Advanced Information Systems School of Applied-Science Nanyang Technological University dpoo@comp.nus .e. sg Singapore 639798 .to-hteckk@comp.nus .edu.sg
- [5] “Global smartphone user penetration 2014-2021 — Statistic,” Statista. [Online]. Available: <https://www.statista.com/statistics/203734/global-smartphonepenetration-per-capita-since-2005/>. [Accessed: 10-May-2018]
- [6] Muhammad Ramadhan Fitriyan Department of Informatics, Universitas MuhammadiyahSurakarta Surakarta, Indonesia ramright06@gmail.com
- [7] “Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2016–2021 White Paper,” Cisco. [Online]. Available: <https://www.cisco.com/c/en/us/solutions/collateral/serviceprovider/visual-networking-index-vni/mobile-white-paper-c11- 520862.html>. [Accessed: 10-May-2018].
- [8] G. A. H. Flynn, B. Polivka, and J. H. Behr, “Smartphone Use by Nurses in Acute Care Settings,” Comput. Inform. Nurs. CIN, vol. 36, no. 3, pp. 120–126, Mar. 2018.
- [9] A. Zargaran et al., “Ethics of Smartphone Usage for Medical Image Sharing,” Indian J. Surg., vol. 80, no. 3, pp. 300–301, 2018
- [10] Drifty, “Ionic Framework,” Ionic Framework. [Online]. Available: <https://ionicframework.com/docs/native/ble/>. [Accessed: 25-Sep2018].

## **Appendices**

### **Appendix-A: Nodejs Download and Installation**

- 1.In a web browser, navigate to <https://nodejs.org/en/download/>.
- 2.Run the installer i.e the .msi file
- 3.Accept the license agreement, click the NEXT button a bunch of times and accept the default installation settings
4. open the Windows Command Prompt, Powershell or a similar command line tool, and type node -v.(This is to confirm the installation.)

### **Appendix-B:Ionic 4 Installation**

1. Install Node. jS 2. Check version of node and npm

Node -v

Npm -v

3. Install IONIC CLI with npm

Npm install -g@ionic/cli

4. ionic start myApp tabs

5. cd myapp

6. ionic serve

## **Appendix-C:Android Download and Installation**

1. Pre-Installation Check List. Before installing Android SDK, you need to install Java Development Kit (JDK).
2. Install "Android Studio IDE" Reference: "Install Android Studio"
3. @<https://developer.android.com/studio/install>.
4. Installing Android SDK

## **Appendix-D:Android SDK Installation**

1. Launch Android Studio -> It will run the "setup" wizard for the first launch.
  - a. Choose "do not import previous settings".
  - b. In "Welcome", choose "next".
  - c. In "Install Type", choose "Standard" (default).
  - d. In "Select UI Theme", choose one that you like (or default).
2. Use "File Explorer" to check the SDK installed directory. Take note that the "App-Data" is a hidden directory. You need to choose "View" menu -> Uncheck "Hidden Items" to see this directory.

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