Proposal

For

MyLibrary

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1.0 Introduction

1.1 Purpose

MyLib is a web platform system that will provide a systematic system to manage and store book information automatically. The system will provide great help for both students and library staff to keep a constant track of all the books available in the library. With the presence of this system, all the work will become much more easier as the process of adding new books, updating the books description and so on can be done via online. The admin can manage all the books record and this process only takes a few minutes to be completed. Students will be able to view all the list of books available at the moment and can request to borrow their desired books. This task if carried out in a manual system, it will be hard and includes chances of mistakes. These errors can be avoided by allowing the system to keep track of information systematically and thus there is no need to keep manual track of this information which will help in avoiding any mistakes. This system will also enable students to check and borrow books without having to go to the library.

1.2 Scope

MyLib will be used mainly in institutions such as universities. This system will enable both library staff and students to have direct access towards the books in the library. This system will help students a lot as the students can check the availability of the books via online and do not have to go to the library in order to do that. After making sure that their desired book is available, they can straight away place an order upon the book and go collect it whenever they want. The students then will be the borrower. Besides, the librarian can also add new books and update the information about the books. This is seen to be practical compared to manual way.

1.3 Definitions, Acronyms and Abbreviations

Table 1: Definition of Terms

Term	Definition
Administrator	User who manages the system.
Borrower	Registered user for borrowing books
System	MyLibrary which helps librarians and students to manage books easily.
Clerk	User who works at the library.
Librarian	User who works in the library and has additional privilege.

1.4 References

1. Software Requirements Specification IEEE Std 830-1998. https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=720574&tag=1

2.0 Overall Description

2.1 User Classes and Characteristics

Borrower:

- Search for books by using titles following the categories.
- View available books in the library.
- Place a request to borrow a book.

Librarian:

- Add new books into the system.
- Update description about books in the system.
- Record the borrower details.

Clerk:

- Search books.
- View all books details in the system.
- Manage the borrower of the book.

Administrator:

- Add new librarians that can access the system.
- Add new clerks.
- Manage the system.

2.2 Operating Environment

MyLib is a web-based system. The appropriate web server and browser are required for the development. All the data will be stored in MySQL database management system. Users should be able to access the system using any type of browser such as Google Chrome, Mozilla Firefox, Internet Explorer, Safari and many more. The connections to the servers will be based on the criteria of attributes of the user like his/her location and server will be working whole 24/7.

2.3 Constraints

The constraints in design and implementation phase are as follows:

- Language requirement: This system only caters in English.
- Browser support limitations: This system is a web-based application. There is an issue of an unsupported browser problem.
- Security consideration: All users will have their own username and password.

2.4 Assumptions and Dependencies

- The system does require database server MySQL for storing the username and password for different types of user of the system.
- The system also assumes that details regarding each customer would be made correctly.
- The end users of this software are assumed to have a basic level of computer knowledge i.e. point and click.
- Users must have basic knowledge of English.
- The third party component that is going to be integrated into MyLib system is the barcode scanner. It will be used to scan the books that are going into and out of the MyLib system.

3.0 External Interface Requirements

3.1 User Interfaces

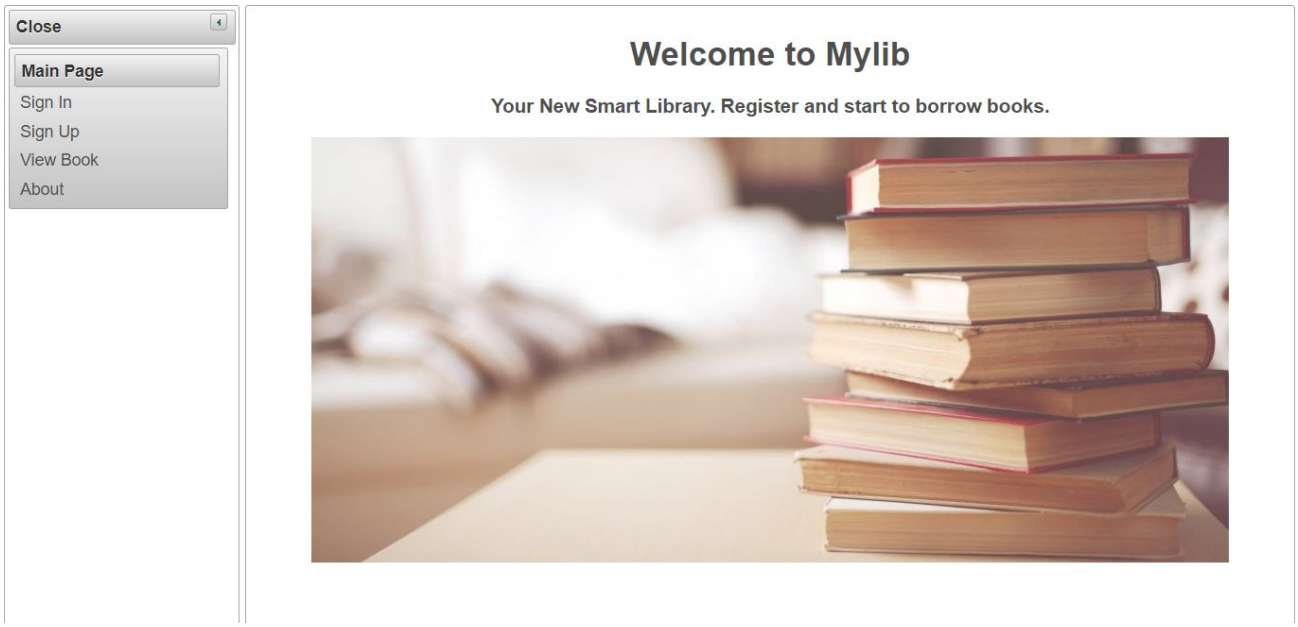


Figure 3.1.1 Main Page (Borrower)

Figure 3.1.2 Log In (Librarian)

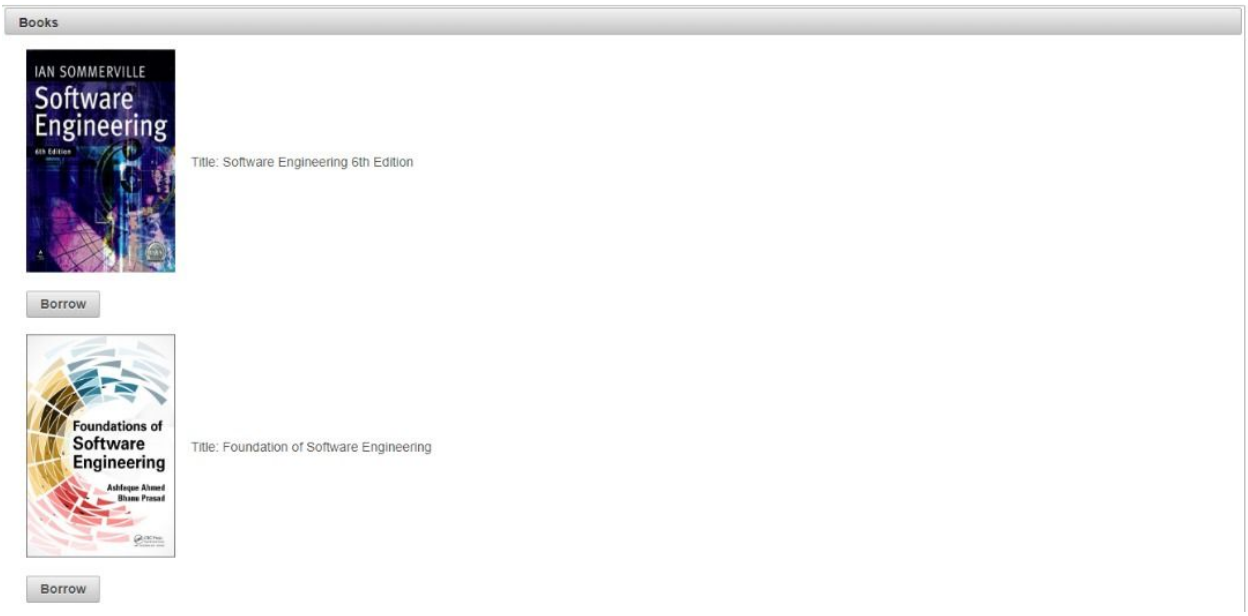


Figure 3.1.3 View List of Book (Borrower)

List Of Books

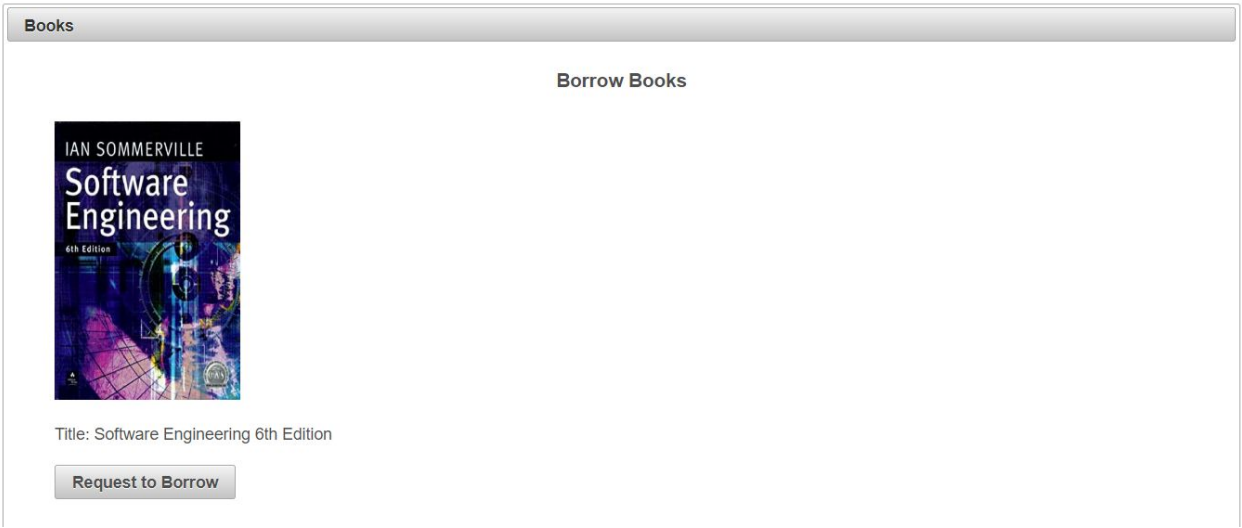


Figure 3.1.4 Borrow Book (Borrower)

Add New Books Into MyLib

Title:

Author:

Year:

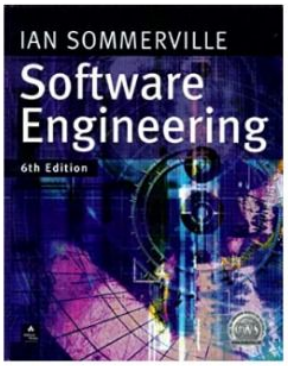
Subject

Add

Figure 3.1.5 Add New Books (Librarian)

Manage Books Info

Update Information of the Books



Title: Software Engineering 6th Edition

Author: Ian Sommerville

Year: 2014

Subject: Software Engineering

Update

Figure 3.1.6 Manage Book Info (Librarian)

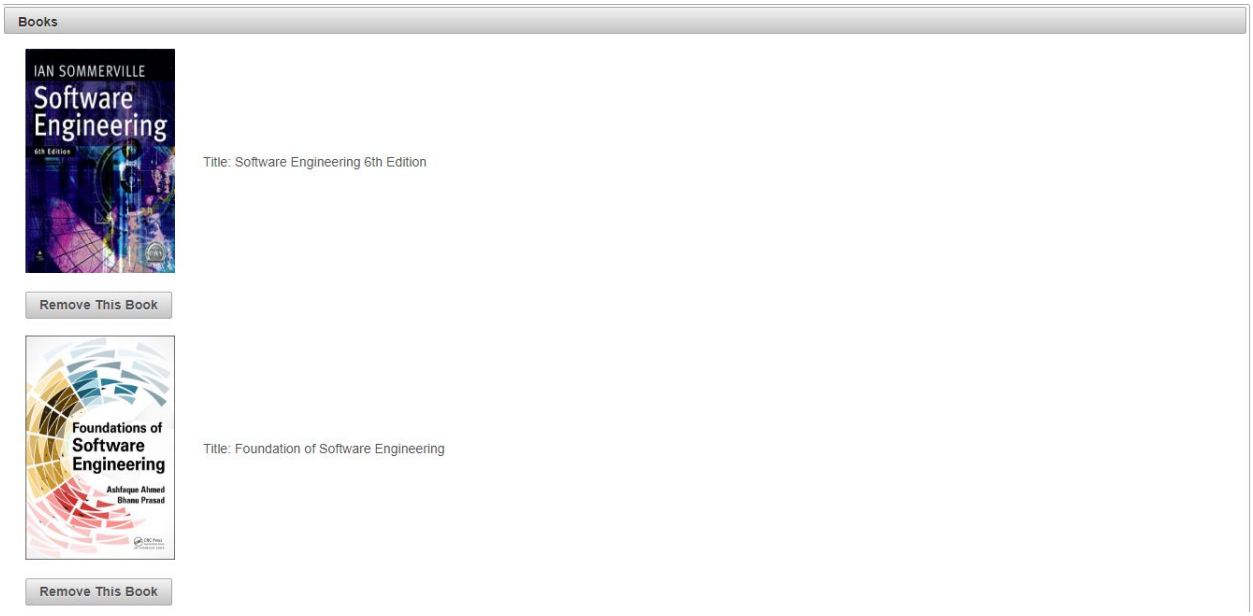


Figure 3.1.7 Remove Book (Librarian)

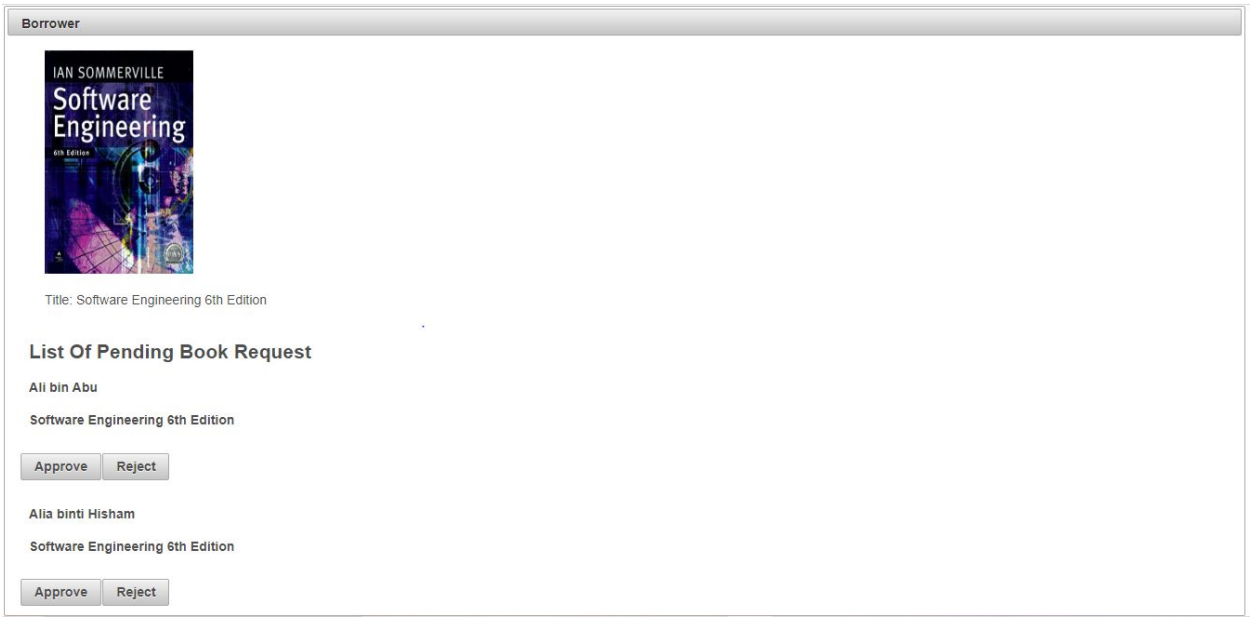


Figure 3.1.8 Manage Borrower (Clerk)

Add New Librarian Into MyLib

Please provide necessary details of the librarian

Name:

LibId:

Email:

Phone Number:

Add

Figure 3.1.9 Add New Librarian (Admin)

Add New Clerk Into MyLib

Please provide necessary details of the clerk

Name:

ClerkId:

Email:

Phone Number:

Add

Figure 3.1.10 Add New Clerk (Admin)

3.2 Hardware Interfaces

Hardware requirements for MyLib on internet will be same for both the parties which are follows:

- Processor: Pentium 1 or above.
- RAM: 128MB or above.
- HD: 20GB or above.
- Devices: Personal Computer (PC) or laptops.

3.3 Software Interfaces

- Operating System: Windows.
- Development Tool: Netbeans, Primefaces, JavaServer Faces
- Database: MySQL (PHPMyAdmin).

3.4 Communication Interfaces

- MyLib system shall notify the borrower to pick up the book that they had requested to borrow.
- A list of books available will be displayed to the students when they request to view it.

4.0 Functional Requirement and System Use Case

4.1 Functional Requirements

Table 2: Functional Requirement

Use Case ID	Use Case	Description	Actors Involved
SRS_REQ_001	Add Book	Librarians add new books into the MyLibrary system.	Librarian
SRS_REQ_002	Search Book	Search the available books in the system's database.	Librarian, Borrower, Clerk
SRS_REQ_003	Log in	Log in as authorize user	Librarian, Clerk, Administrator
SRS_REQ_004	View Book	View book descriptions	Librarian, Borrower, Clerk, Administrator
SRS_REQ_005	Remove Book	Remove books from the system database.	Librarian
SRS_REQ_006	Borrow Book	Borrower can borrow books	Librarian, Clerk
SRS_REQ_007	Manage Book Info	Update the details of the book.	Librarian
SRS_REQ_008	Add Borrower	Add a new borrower into the MyLibrary system.	Librarian, Clerk
SRS_REQ_009	Add Librarian	Add a new librarian into the MyLibrary system.	Administrator
SRS_REQ_010	Add Clerk	Add a new librarian into the MyLibrary system.	Administrator
SRS_REQ_011	Return Book	Borrower returning book to the library	Librarian, Clerk

4.2 Use Case Diagram

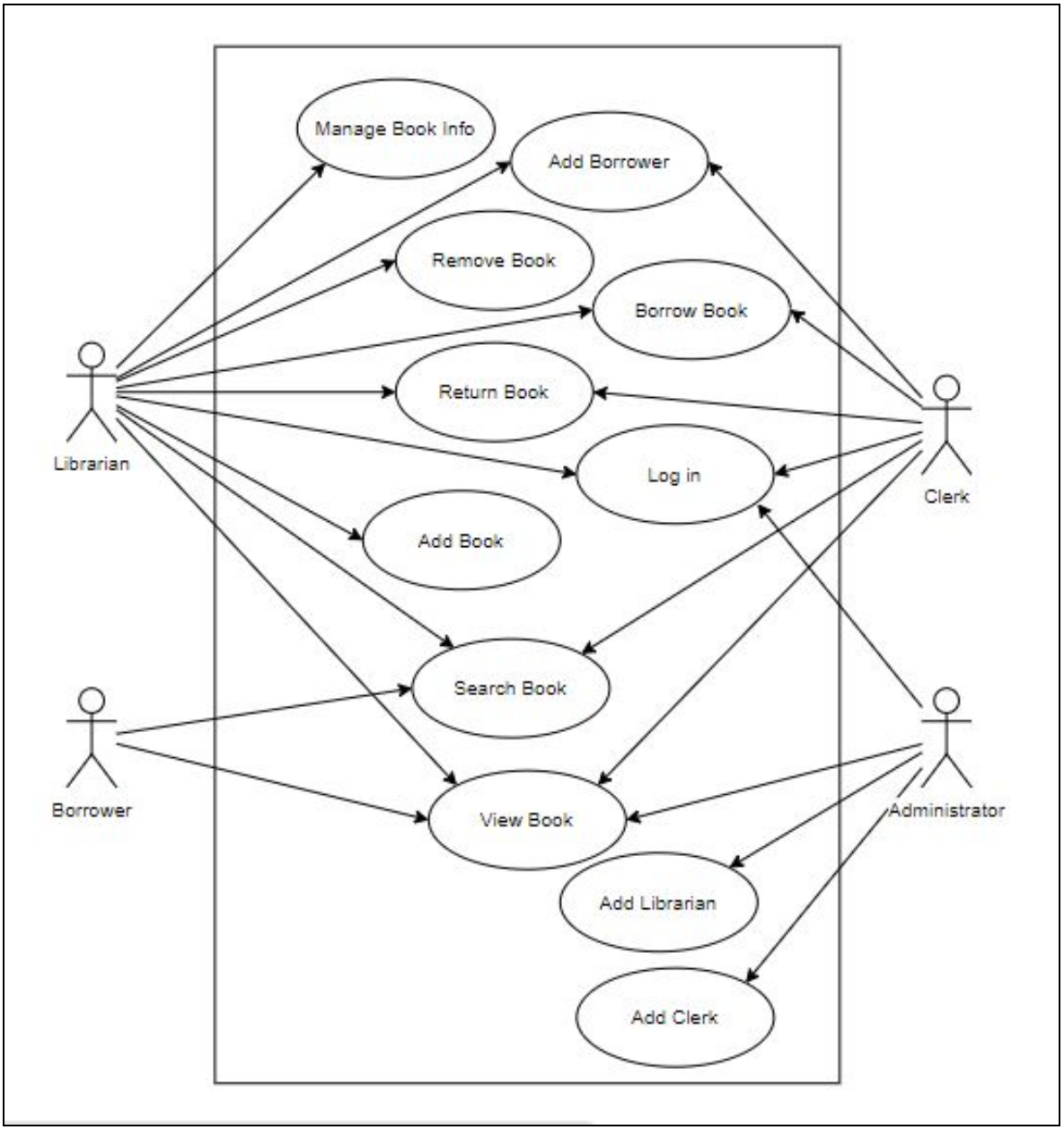


Figure 4.2.1 Use Case Diagram for MyLib system

4.3 Use Case Description

Table 3: Use Case 1: Add Book

Identifier	SRS_REQ_001
Name	Add Book
Objective	Librarians add new books into the MyLibrary system
Priority	High
Actor	Librarian
Pre-condition(s)	1. Sign in as librarian 2. Librarian click register book button
Flow of Event	**Basic Flow** 1. Book id is given by continuing from the previous book id. 2. The librarian enters information about the book including the title, barcode, author etc. 3. Click register book button 4. The system display successful message
Alternative Flow	3. a) Invalid or incomplete information entered. Back to step 2.
Post-condition(s)	Book detail and information is registered into the system database

Table 4: Use Case 2: Search Book

Identifier	SRS_REQ_002
Name	Search Book
Objective	Search for book that exist in the system's database
Priority	High
Actor	Librarian, Borrower, Clerk
Pre-condition(s)	No pre-condition
Flow of Event	**Basic Flow** 1. The actors insert the title of the book in the search textbox. 2. Click the search button. 3. If the search input entered has similarity to the books in the database, the system will show to the user the list of books. 4. The information of the book will also be shown such as status, book id, bookshelf id, etc.
Alternative Flow	3. a) If the search input entered has no similarity to the books in the database, the system will display "The book is not available here"
Post-condition(s)	The librarian, borrower and clerk will be able to view the list of books successfully.

Table 5: Use Case 3: Log in

Identifier	SRS_REQ_003
Name	Log in
Objective	Log in as authorize user
Priority	High
Actor	Librarian, Clerk, Administrator
Pre-condition(s)	The email and password is already in the system database
Flow of Event	**Basic Flow** 1. The users click the login button 2. The librarian, clerk or administrator enter their email and password 3. If the email and password is correct, the user will be redirect to another page
Alternative Flow	3.a) if the email or password is wrong or invalid, they need to reenter their email or password.
Post-condition(s)	The user will be redirect to their respective page

Table 6: Use Case 4: View Book

Identifier	SRS_REQ_004
Name	View Book
Objective	View the book descriptions.
Priority	Medium
Actor	Librarian, Borrower, Clerk, Administrator
Pre-condition(s)	1. Use case 2 is used 2. List of book is displayed
Flow of Event	**Basic Event** 1. The user click on the book title 2. The system will display the information of the book from the database. 3. Information such as title, barcode, author, book's location, status and etc.
Post-condition(s)	Book description is displayed

Table 7: Use Case 5: Remove Book

Identifier	SRS_REQ_005
Name	Remove Book
Objective	Remove books from database
Priority	High
Actor	Librarian
Pre-condition(s)	1. Logged in as librarian 2. Book is in the system database 3. The librarian use search book function
Flow of Event	**Basic Event** 1. Librarian click the remove book button 2. Librarian click confirm button 3. System will remove the book from the system database
Post-condition(s)	Book is remove from the system database

Table 8: Use Case 6: Borrow Book

Identifier	SRS_REQ_006
Name	Borrow Book
Objective	Borrow book from the list of available books in the database
Priority	High
Actor	Librarian, Clerk
Pre-condition(s)	1. Borrower information is already in the database 2. Logged in as librarian or clerk 3. Book to be borrow is given to the clerk or librarian
Flow of Event	**Basic Event** 1. Librarian enter the borrower id into the system 2. Display borrower information 3. Librarian enter the book id into the system 4. Confirmation for borrowing 5. System will display the return date of the book
Alternative Flow	2. a) The borrower id is incorrect. Back to step 1. b) The borrower id is invalid due to late return. Fine needed to be paid to enable borrowing. Return to step 1 4. a) The book id is invalid or incorrect. b) The book status is borrowed.
Post-condition(s)	Date for return book is created

Table 9: Use Case 7: Manage Book Info

Identifier	SRS_REQ_007
Name	Manage Book Info
Objective	Update the details of the book.
Priority	Medium
Actor	Librarian
Pre-condition(s)	1. Logged in as librarian 2. Book is in the database 3. Use case 4 is used
Flow of Event	**Basic Event** 1. The librarian click the update button 2. The librarian update the information of the book 3. The librarian clicks the “Save” button. 4. The system shows an update message.
Alternative Flow	3. a) The librarian clicks the cancel button. Update made to the book is cancel
Post-condition(s)	Book information updated

Table 10: Use Case 8: Add Borrower

Identifier	SRS_REQ_008
Name	Add Borrower
Objective	Manage the borrower details and status.
Priority	High
Actor	Librarian, Clerk
Pre-condition(s)	Logged in as librarian or clerk
Flow of Event	**Basic Event** 1. Librarian click register a new borrower 2. System will create new borrower id 3. The librarian will enter the information of the borrower into the system 4. The librarian clicks the “Save” button.
Post-condition(s)	New borrower is created

Table 11: Use Case 9: Add Librarian

Identifier	SRS_REQ_009
Name	Add Librarian
Objective	Add new librarians into the MyLibrary database.
Priority	High
Actor	Administrator
Pre-condition(s)	Logged in as administrator
Flow of Event	**Basic Flow** 1. Administrator click register a new librarian 2. System will create new librarian id 3. The administrator will enter the information of the librarian into the system 4. The administrator clicks the “Save” button
Post-condition(s)	New librarian is created

Table 12: Use Case 10: Add Librarian

Identifier	SRS_REQ_010
Name	Add Clerk
Objective	Add new clerks to perform actions in MyLibrary system
Priority	High
Actor	Administrator
Pre-condition(s)	Logged in as an Administrator
Flow of Event	**Basic Flow** 1. Administrator click register a new clerk 2. System will create new clerk id 3. The administrator will enter the information of the clerk into the system 4. The administrator clicks the “Save” button
Post-condition(s)	New clerk is created

Table 13: Use Case 11: Return Book

Identifier	SRS_REQ_011
Name	Return Book
Objective	Borrower returning book to the library
Priority	High
Actor	Librarian, Clerk
Pre-condition(s)	1. Logged in as librarian or clerk 2. The book status is borrowed
Flow of Event	**Basic Flow** 1. The librarian or clerk click on return book button 2. Then, the librarian enter the the book id 3. Display return book success
Alternative Flow	3.a) The book id is invalid. b) Book status may not be borrowed. c) Return book is late. Fine is charged to the borrower for late. Borrower unable to borrow book until paid
Post-condition(s)	The returned book status become available

4.4 Entity Relationship Diagram

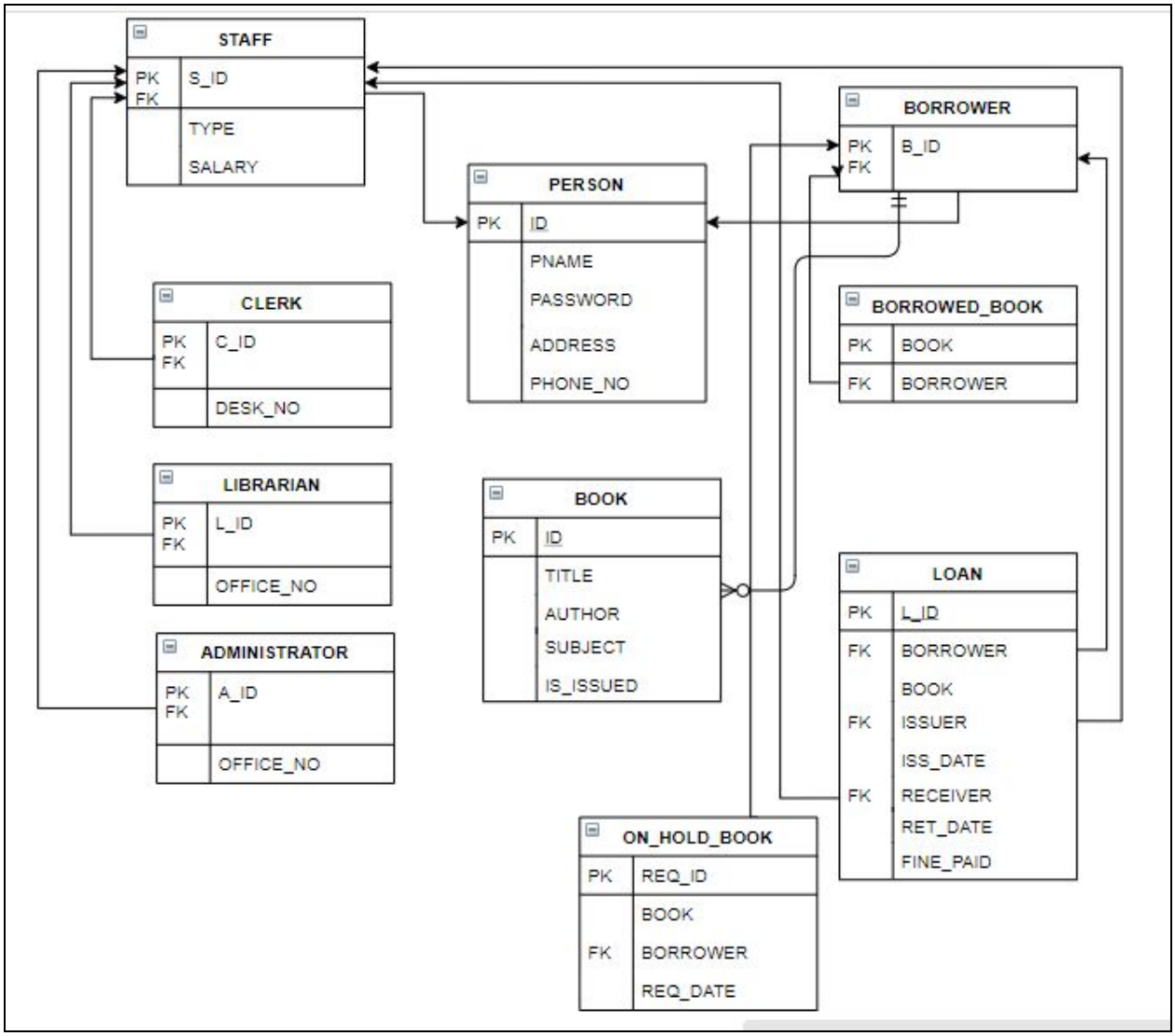


Figure 4.4 Entity Relationship Diagram

5.0 Non Functional Requirements

QA ID	Quality Attributes	Attribute Refinement	ASR ID	Architecture Significant Requirement (ASR)
1	Performance	Response Time	1.1	Our Application will be interactive and the delays involved will be less, so in every action-response of the application, there are no immediate delays and will be complete in less than 5 second.
2	Reliability	Connection	2.1	The system will be able to operate and be accessed by multiple users even when it is flooded with requests or if one of the servers is down. There will be a backup server to make sure the system is always connected.
3	Security	Confidentiality	3.1	The system will use define user type in database to authorise in order to grant them the privilege and access to the application
		Integrity	3.2	The system will resist unauthorised access and report the attempts
4	Availability	No downtime	4.1	Our system is accessible and available from 7.30a.m. until 11.00p.m. since that is 30 minute before and after closing hour