

LIBRARY MANAGEMENT SYSTEM

A Python Based Desktop-Application

A Report submitted
in partial fulfilment for the Degree of
B.Sc
In
Computer Science (Honours)

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Syamaprasad College

Year of Submission: 2022



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CERTIFICATE

This is to certify that the project report entitled "**LIBRARY MANAGEMENT SYSTEM**" submitted to **Department of Computer Science of Syamaprasad College, Kolkata**, in partial fulfilment of the requirement for the award of the degree of **Bachelor of Science in Computer Science** during the academic year **2022**, is a *bona fide* record of the project work carried out by Abhisek Midya, Roll No- 193016-21-0029, Reg. No- 016-1112-0281-19 under my guidance and supervision. The contents of this report, in full or in parts, have not been submitted to any other Institution or University for the award of any degree or diploma.

Signature of H.O.D
Dept. of Computer Science

Signature of Project
Guide

Signature of the
External Examiner

DECLARATION

We declare that this Project Report entitled "**LIBRARY MANAGEMENT SYSTEM**" submitted in partial fulfilment of the degree of **B.Sc.** in **Computer Science** under Calcutta University, West Bengal is a record of original work carried out by us under the supervision of **Prof. Aparna Kisku Hansda**, and has not formed the basis for the award of any other degree or diploma, in this or any other Institution or University. In keeping with the ethical practice in reporting scientific information, due acknowledgements have been made wherever the findings of others have been cited.

Sl. No.	Name of the Student	Roll No	Signature
1.			
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3.			
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ACKNOWLEDGEMENT

In the present world of competition there is a race of existence in which those are having will to come forward, succeed. Project is like a bridge between theoretical and practical working. With this willing we joined this particular project.

We are obliged to the **Department of Computer Science of Syamaprasad College Kolkata**, for giving us this initiative to do this constructive project. Then we would like to express our special thanks of gratitude to **Prof. Aparna Kisku Hansda**, our guide mentor and support system throughout this project who helped and coordinated us in every path.

Besides, we would like to thank all the teachers, friends and family members who helped us by giving us advice and support throughout the period.

Name of all the group members:

- 1. Ahin Subhra Halder**
- 2. Avijit Halder**
- 3. Abhisek Midya**
- 4. Atish Sarkar**

Abstract

Library Management System 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 user login and a facility of teacher's login.

It has a facility of admin login through which the admin can monitor the whole system. It also provides of an online **E-library** where teachers and students can read and download the books which are available.

After logging in their accounts members can see list of books issued and its issue date and return date and, they can request the librarian to add new books by filling the **BRF** which available on the website.

The librarian after logging into his account i.e., admin account can access various reports such as members details, issue report, and book report.

This library management system has a special ability (**SITE**) sending info through email by which members can get all information through email. Also, the members will get an email remainder before 2 days of due date who did not return the book.

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 reduce the human efforts.

KEYWORDS:

SITE, E-Library, BRF.

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Introduction

This chapter gives an overview about the Domain Description, Motivation and Scope of the Work of the system.

1.1 Domain Description:

As the modern organizations are automated and computers are working as per the instructions of user, it becomes essential for the coordination of human beings, commodity and computers in a modern organization. This information helps the distributors to purchase or sale the products very efficiently.

In our case, Library Management System consists of list of records about the management of the details of the students and the issues going on and about some books and all. This is a Python based desktop & Google blogger-based web support. The project has two modules namely- User & Librarian. This is easy and time saving concept for better usage of the library management system.

The administrators and all the others can communicate with the system through this project, thus facilitating effective implementation and monitoring of various status.

1.2 Motivation & Scope of the Work:

This objective overcame all the short comings of a manual system that was used daily. This includes the following: -

1. To eliminate the paperwork in library.
2. Developed a well-organized library borrowing system.
3. Produced a well-designed and functioning system in accordance with the needs and wants of the borrowers.

4. Minimized the task and the effort being performed by both the librarian and borrowers.
5. Provided the College and the students a well-organize and well-presented reports.
6. A search column to search availability of books.
7. An Admin login page where admin can add books.

Scope of the Work:

Library management system is a resource planning and enterprise management software, used to operate and manage the huge amount of data generated from libraries. It is also used to track books, fines for lost books, and students or other members who have borrowed books from the library. Library management system also helps in reducing operational cost, increasing efficiency, and providing easy access to the huge amount of data available in the library.

The library management system helps a librarian to maintain all types of books, journals, newspaper's counts, and member information including profiles, penalties, payments, and other financial transactions.

So, our Library management system includes some operations such as facility of user login and a facility of teacher's login. It has a facility of admin login through which the admin can monitor the whole system. It also provides of an online E-library where teachers and students can read and download the books which are available.

After logging in their accounts members can see list of books issued and its issue date and return date and, they can request the librarian to add new books by filling the BRF which available on the website.

The librarian after logging into his account i.e., admin account can access various reports such as members details, issue report, and book report.

Our Library management system has a special ability (SITE Sending Information through Email) by which members can get all information through email. Also, the members will get an email remainder before 2 days of due date who did not return the book.

The global library management system market is mainly driven by rise in need for automation of library management functions to manage informational resources. Additionally, growing demand for quick access to libraries through computers, mobiles, tablets, and other digital platforms further drives the market globally. So, here we can see our project can be future proof.

1.3 Limitation of the Work:

- a) We cannot send auto remainder to the people who have borrowed books. Admin have to login and press "Send Remainder" button to send the emails.
- b) We are not able to test multiple computers connect to the same web server (Xampp) so the software may not work properly multiple interconnected computers at the same time.

Pre-Requisites

2.1 Hardware Requirements:

Processor: - Intel Core i3 processor / Reyzen 3 processor or above.

Ram: - 4gb or above.

Storage Space Required: - 50mb.

Monitor resolution: - 720p / 1080p

Internet: - Stable broadband connection / Wi-Fi.

2.1 Software Requirements:

OS: - Windows 7/8/8.1/10/11 (Recommended: Windows 10)

MySQL Server: - XAMPP / WAMP web server.

2.3 Languages Used:

- a) Python Programming Language
- b) MySQL

Python Packages Used:

1. Tkinter
2. TTK
3. PyMySQL
4. DateTime
5. OS
6. Shutil

Review

- 1) In the system there was few selected books inserted into the system through if-else condition. There was no scope of adding or deleting new books.
- 2) There were few selected members inserted into the system through if-else condition. There was no scope of adding or deleting new members.
- 3) In the system there was no authentication system (login page).
- 4) No admin page & user page was there.
- 5) There was no scope to modify books & member details.
- 6) No e-library page was attached to the system.
- 7) In the system we must manually enter all the information to store in the database.
- 8) Lack of security was an issue.

Review Based on :- <https://www.youtube.com/watch?v=GODYXAnBDvc>

Methodology

4.1 Problem Formulation:

- a) Books information maintained in a properly defined database.
- b) Ease of issuing and returning of books with a click of a button.
- c) Ease of tracking books issued by each member.
- d) Administrator can manage users and books effectively.
- e) E-book & mail reminder.
- f) Added Menu bar (File, Edit, Show, Reminder, Import, Export, Help) for smooth navigation.
- g) Added Date & Time for helping the user.

4.2 Design Descriptions:

The following Software constitute the 'Library Management'. Main Page Consisting of the WELCOME and LOGIN columns.

Login Page

- Includes an interface to Login both for users and administrator.
- A forgot password facility.

Admin Page

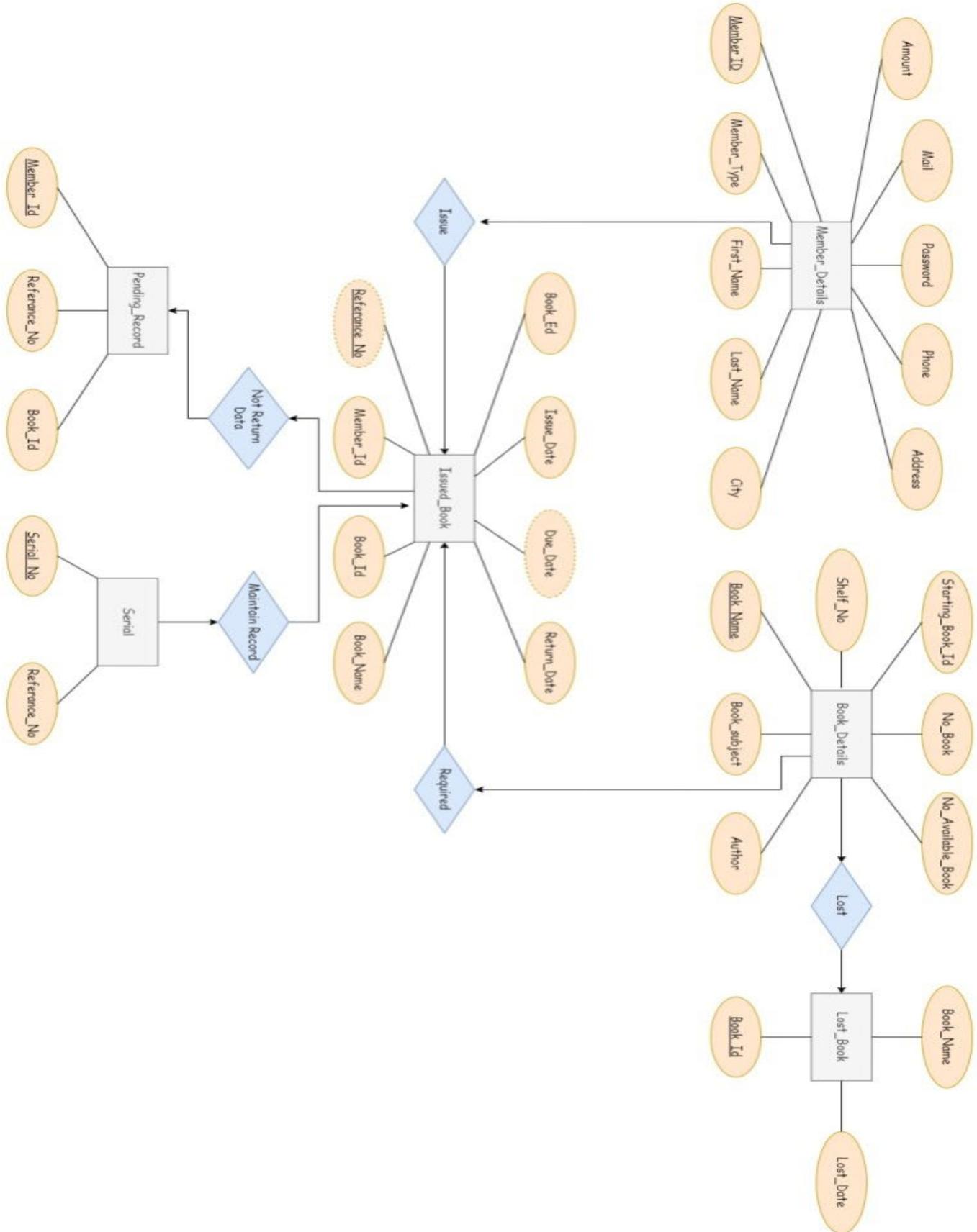
- Includes links to other pages: 'Add Books', 'Remove Books', 'Manage Users' Has a welcome page with profile options.
- A Log out tab.

User Page

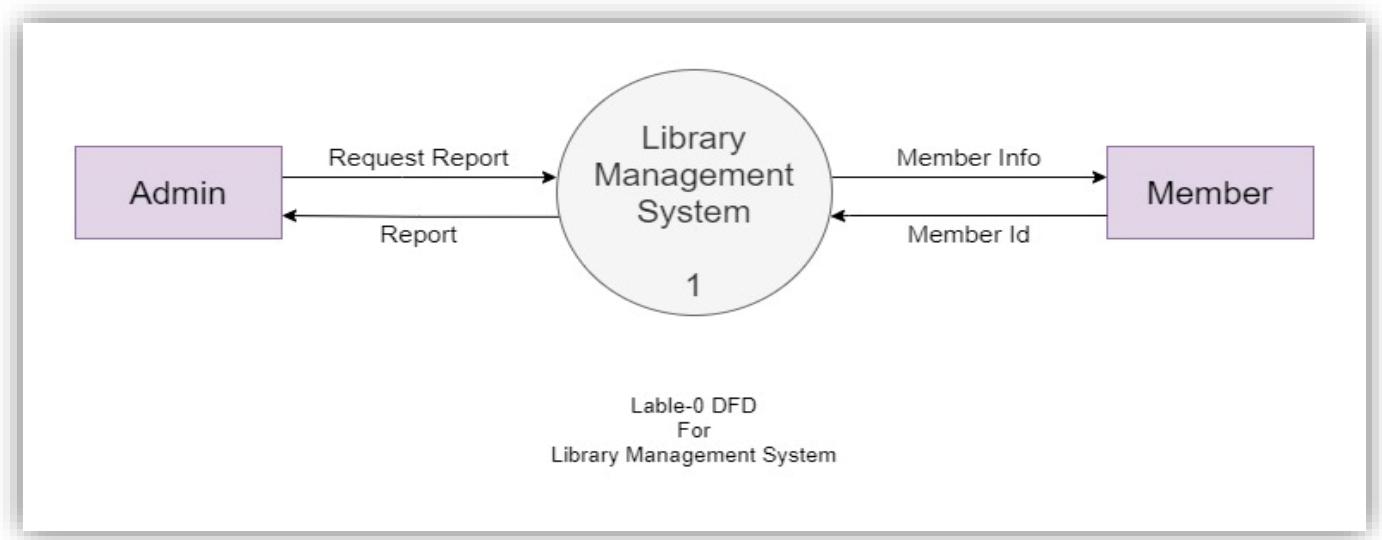
- Includes links to other pages: 'Issue Books', 'Account', 'Return Books' And a welcome page with profile options.
- A Log out tab.

All these pages are interlinked using Microsoft visual studio and the coding which it uses is that of Python. The data is held in databases managed by the SQL server management which gives the facility to connect the database to the website so that the data can be viewed, updated, or removed as required.

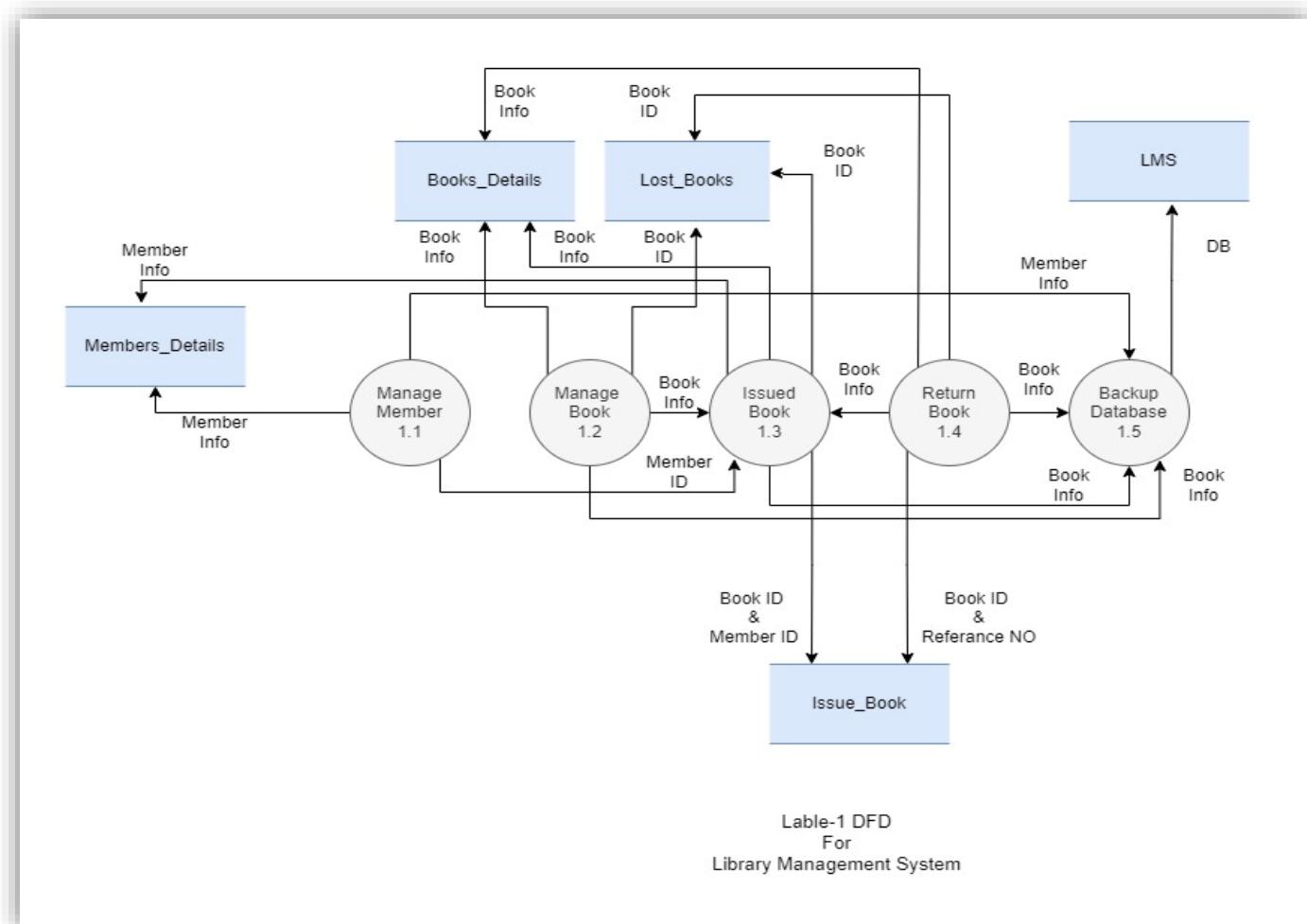
➤ ER Diagram:-



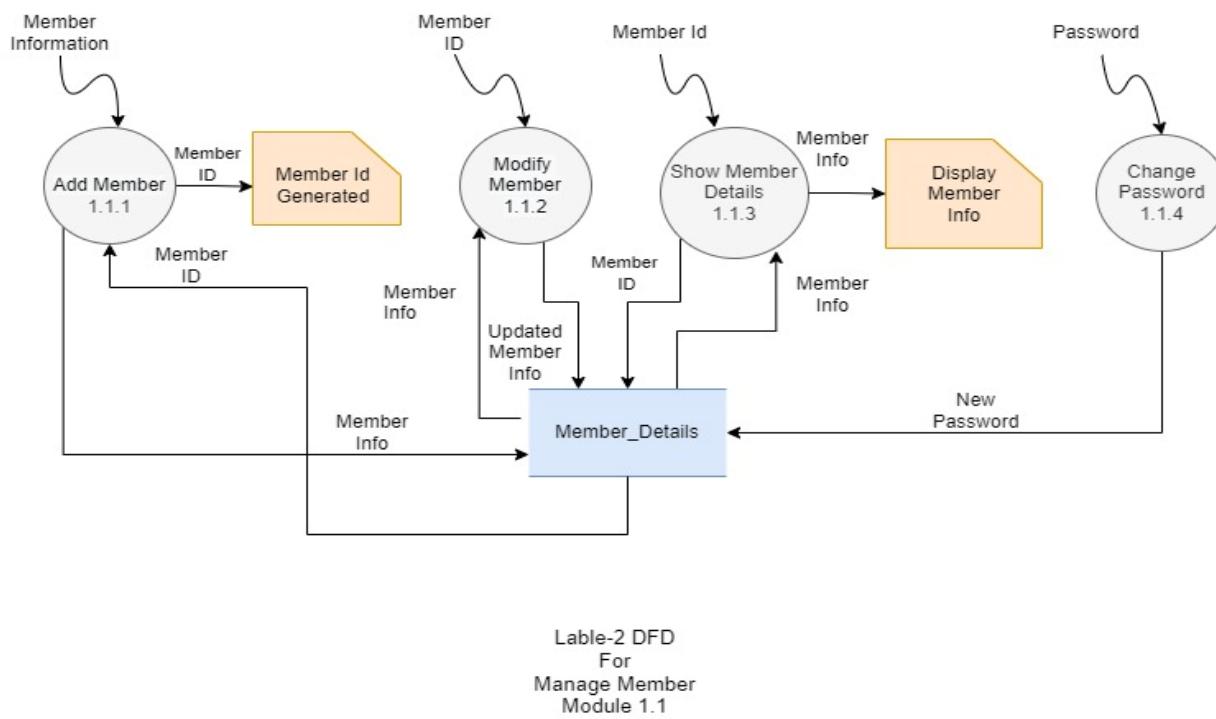
➤ DFD Level - 0 :-



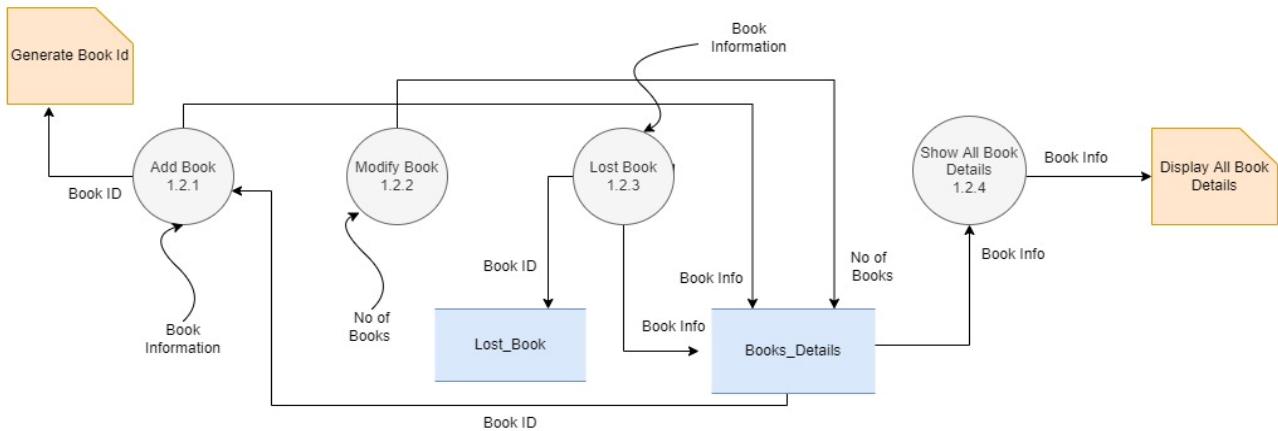
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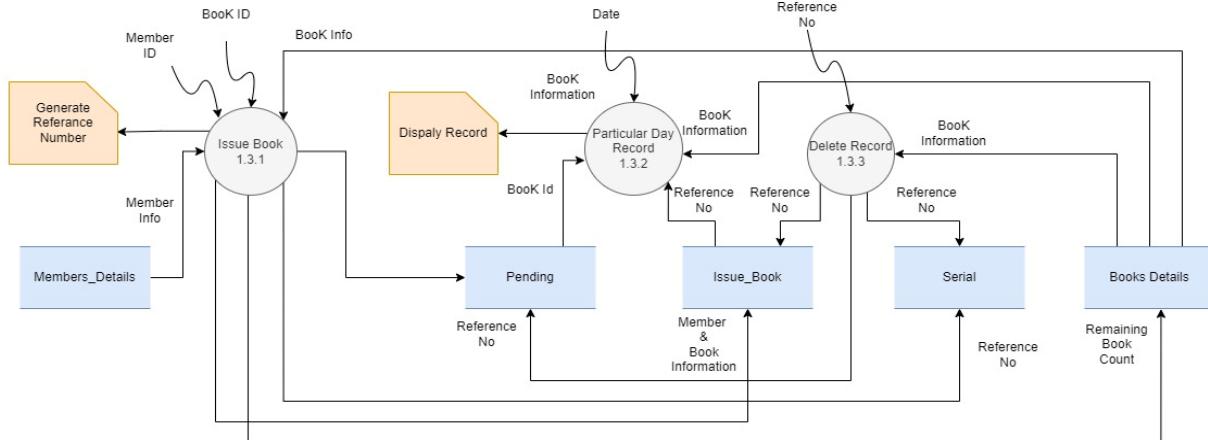
➤ DFD Level - 2, For Manage Member, Module - 1.1:-



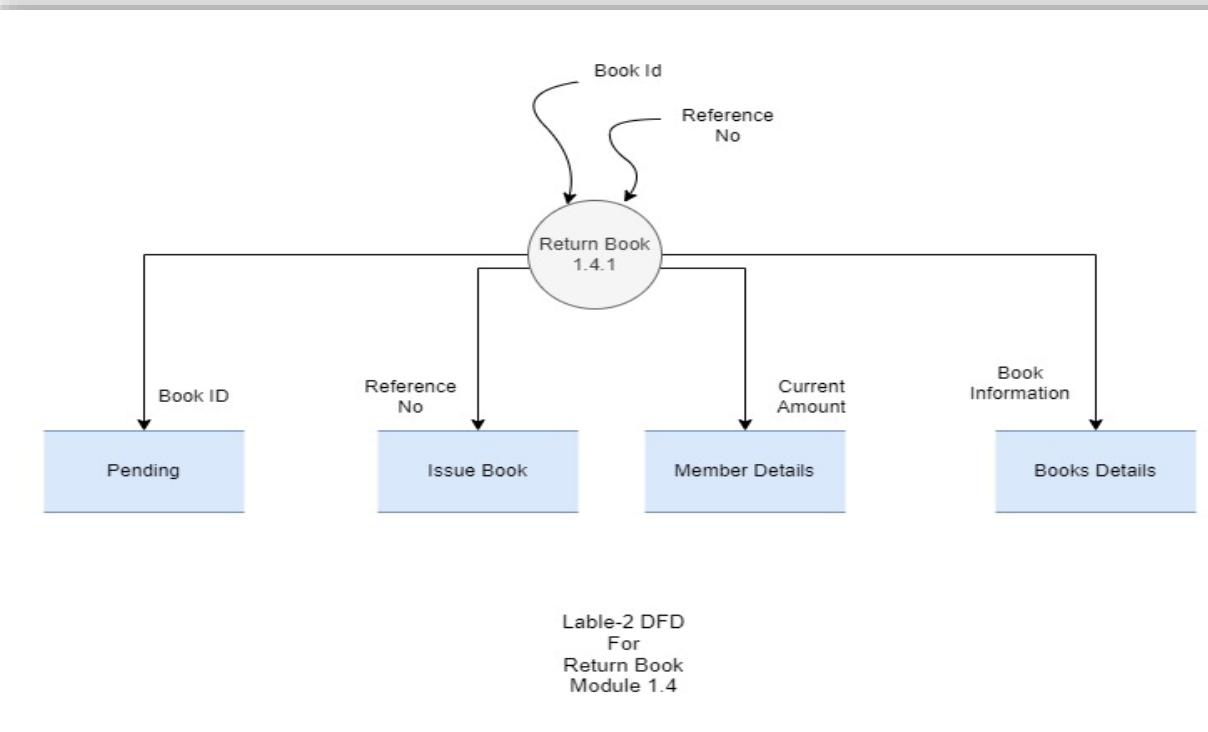
➤ DFD Level - 2, For Manage Book, Module - 1.2:-



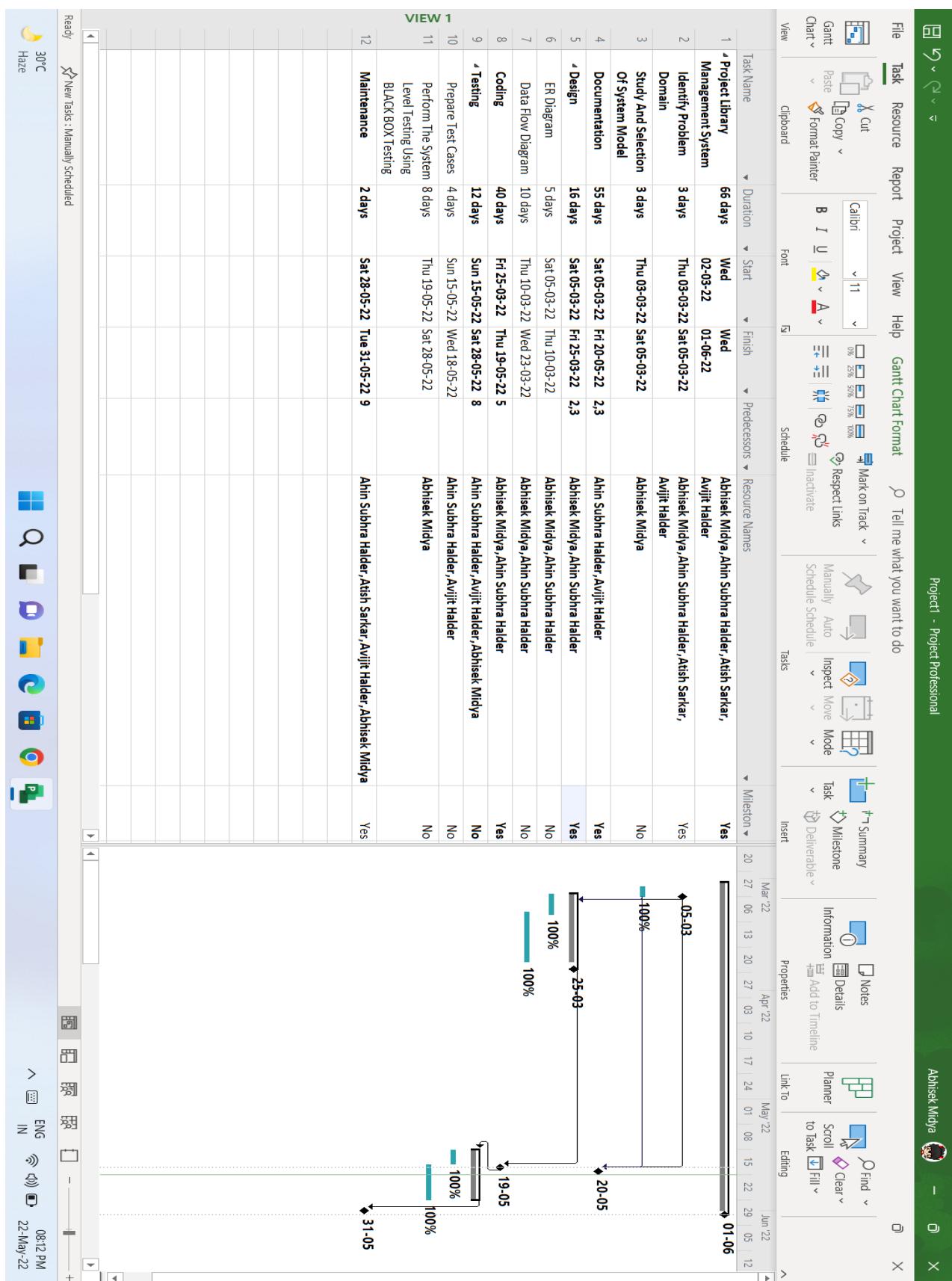
➤ DFD Level - 2, For Issue Book, Module - 1.3:-



➤ DFD Level - 2, For Return Book, Module - 1.4:-



➤ Gantt Chart:-



Implementation

Implementation is the stage where the theoretical design is turned into a working system. The most crucial stage in achieving a new successful system and in giving confidence on the new system for the users that it will work efficiently and effectively.

The system can be implemented only after thorough testing is done and if it is found to work according to the specification.

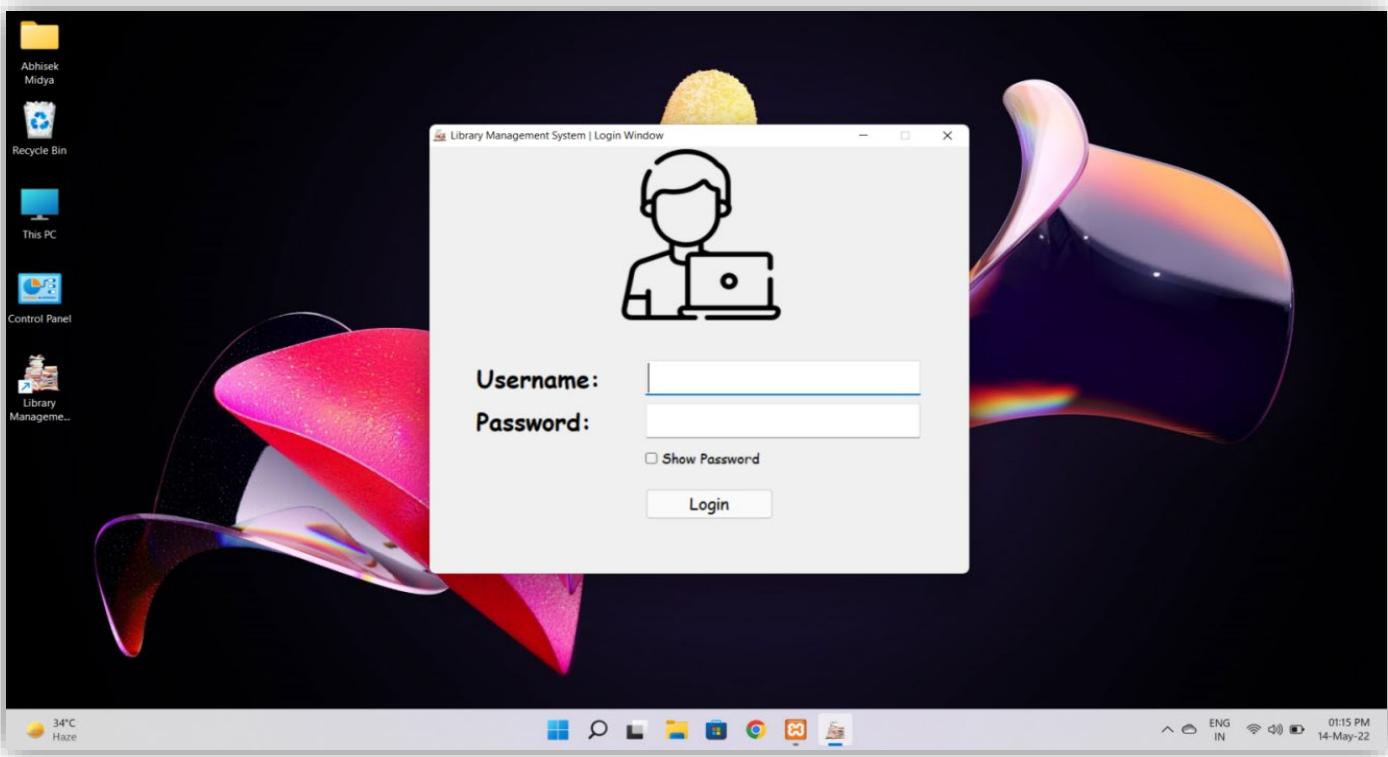
It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover and an evaluation of change over methods apart from planning. Two major tasks of preparing the implementation are education and training of the users and testing of the system.

The more complex the system being implemented, the more involved will be the systems analysis and design effort required just for implementation.

The implementation phase comprises of several activities. The required hardware and software acquisition is carried out. The system may require some software to be developed. For this, programs are written and tested. The user then changes over to his new fully tested system and the old system is discontinued.

5.1 Client-Side Development:

1. Login Page:-



2. Admin Panel:-

File Edit Show Reminder Import Export Help

14 May 2022 Library Management System 12:55:05 PM

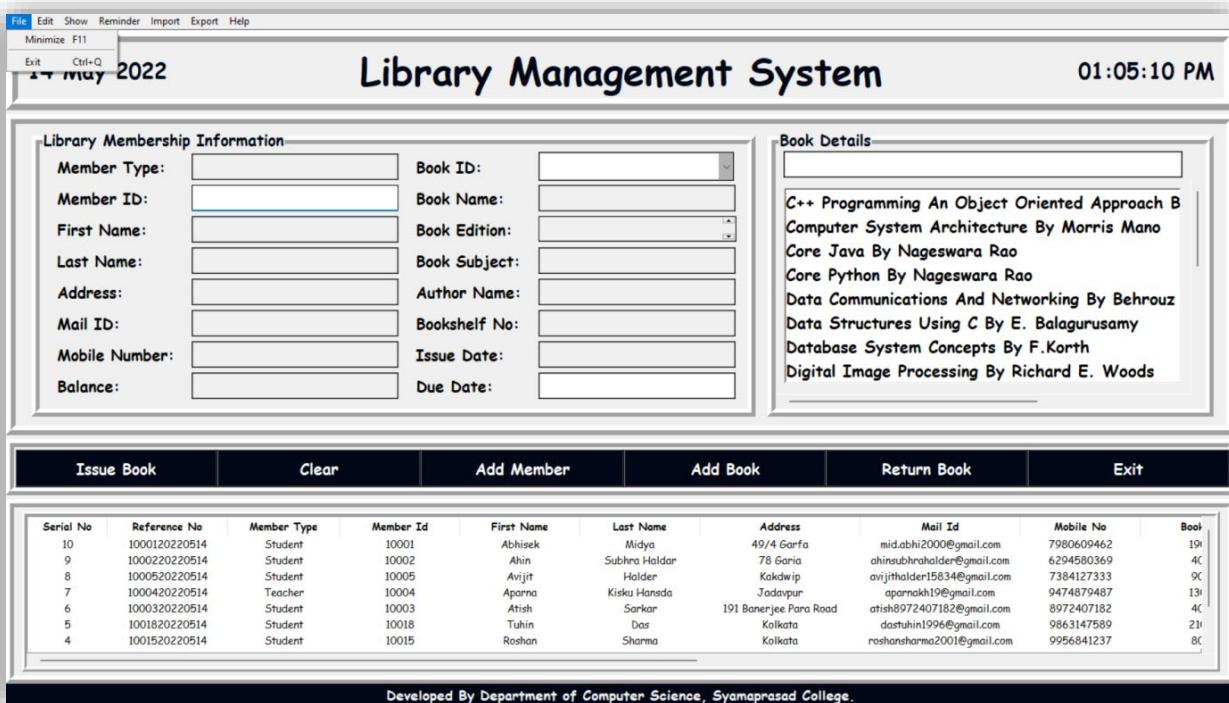
Library Membership Information		Book Details	
Member Type:	<input type="text"/>	Book ID:	<input type="text"/>
Member ID:	<input type="text"/>	Book Name:	<input type="text"/>
First Name:	<input type="text"/>	Book Edition:	<input type="text"/>
Last Name:	<input type="text"/>	Book Subject:	<input type="text"/>
Address:	<input type="text"/>	Author Name:	<input type="text"/>
Mail ID:	<input type="text"/>	Bookshelf No:	<input type="text"/>
Mobile Number:	<input type="text"/>	Issue Date:	<input type="text"/>
Balance:	<input type="text"/>	Due Date:	<input type="text"/>

Issue Book		Clear		Add Member		Add Book		Return Book		Exit	
Serial No	Reference No	Member Type	Member Id	First Name	Last Name	Address	Mail Id	Mobile No	Book		
10	1000120220514	Student	10001	Abhishek	Midya	49/4 Garfa	mid.abhi2000@gmail.com	7980609462	19		
9	1000220220514	Student	10002	Ahn	Subhra Halder	78 Garfa	ahinsubhrhalder@gmail.com	6294580369	4C		
8	1000520220514	Student	10005	Avijit	Halder	Kakdwip	avijithalder15834@gmail.com	7384127333	9C		
7	1000420220514	Teacher	10004	Aparna	Kisku Hansda	Jadavpur	oparnakh19@gmail.com	9474879487	13I		
6	1000320220514	Student	10003	Atish	Sarkar	191 Banerjee Para Road	atish8972407182@gmail.com	8972407182	4C		
5	1001820220514	Student	10018	Tuhin	Das	Kolkata	dastuhin1996@gmail.com	9863147589	21I		
4	1001520220514	Student	10015	Roshan	Sharma	Kolkata	roshansharma2001@gmail.com	9956841237	8C		

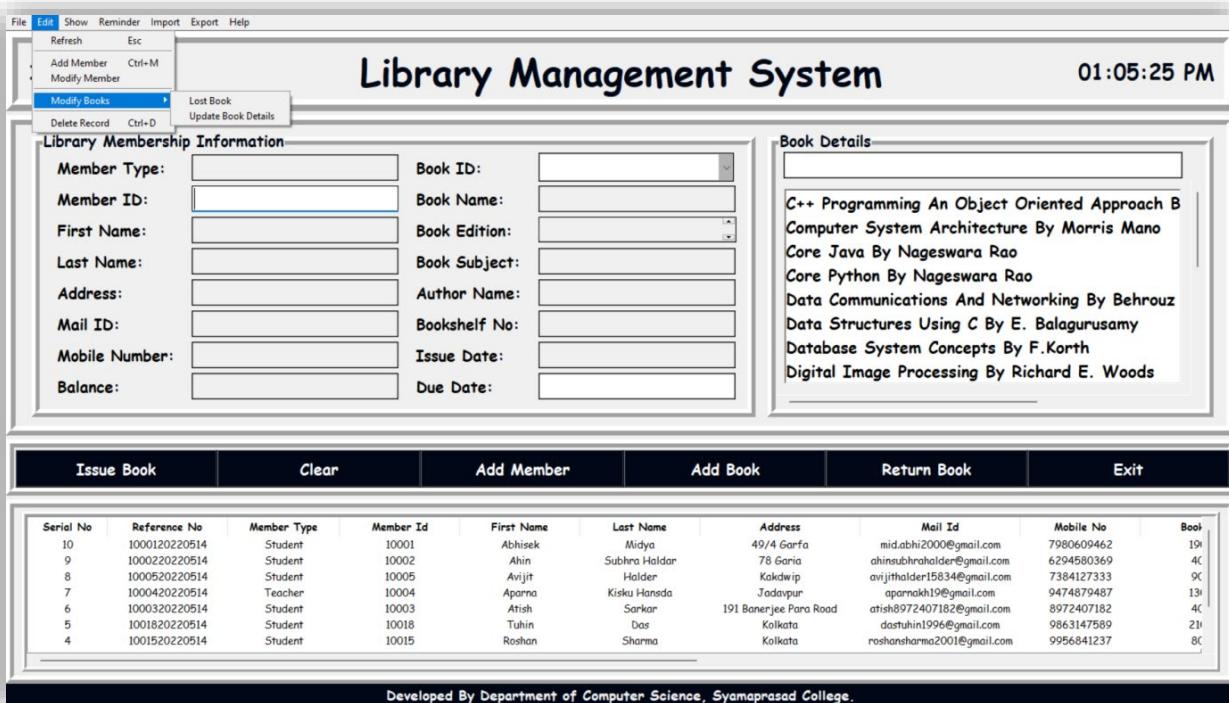
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2.1 Menu-Bar :-

2.1.1 File



2.1.2 Edit



2.1.3 Show

File Edit Show Reminder Import Export Help

14 Particular Day Record
Particular Members Record
Not Returned Book
Show Lost Books
All Members Record
All Books Record

Library Management System

01:05:37 PM

Member Information		Book Details	
Member Type:		Book ID:	
Member ID:		Book Name:	
First Name:		Book Edition:	
Last Name:		Book Subject:	
Address:		Author Name:	
Mail ID:		Bookshelf No:	
Mobile Number:		Issue Date:	
Balance:		Due Date:	

Issue Book **Clear** **Add Member** **Add Book** **Return Book** **Exit**

Serial No	Reference No	Member Type	Member Id	First Name	Last Name	Address	Mail Id	Mobile No	Book
10	1000120220514	Student	10001	Abhishek	Midya	49/4 Garfa	mid.abhi2000@gmail.com	7980609462	19t
9	1000220220514	Student	10002	Ahini	Subhra Haldar	78 Garia	ahinsubrahmihalder@gmail.com	6294580369	4C
8	1000520220514	Student	10005	Avijit	Haldar	Kakdwip	avijithaldar15834@gmail.com	7384127333	9C
7	1000420220514	Teacher	10004	Aparna	Kisku Hansda	Jadavpur	aparnokh19@gmail.com	9474879487	13t
6	1000320220514	Student	10003	Arif	Sarkar	191 Bonerjee Para Road	arish8972407182@gmail.com	8972407182	4C
5	1001820220514	Student	10018	Tuhin	Das	Kolkata	dastuhin1996@gmail.com	9863147589	21t
4	1001520220514	Student	10015	Roshan	Sharma	Kolkata	roshansharma2001@gmail.com	9956841237	8C

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2.1.4 Reminder

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Send Reminder

14 May 2022 Library Management System 01:05:54 PM

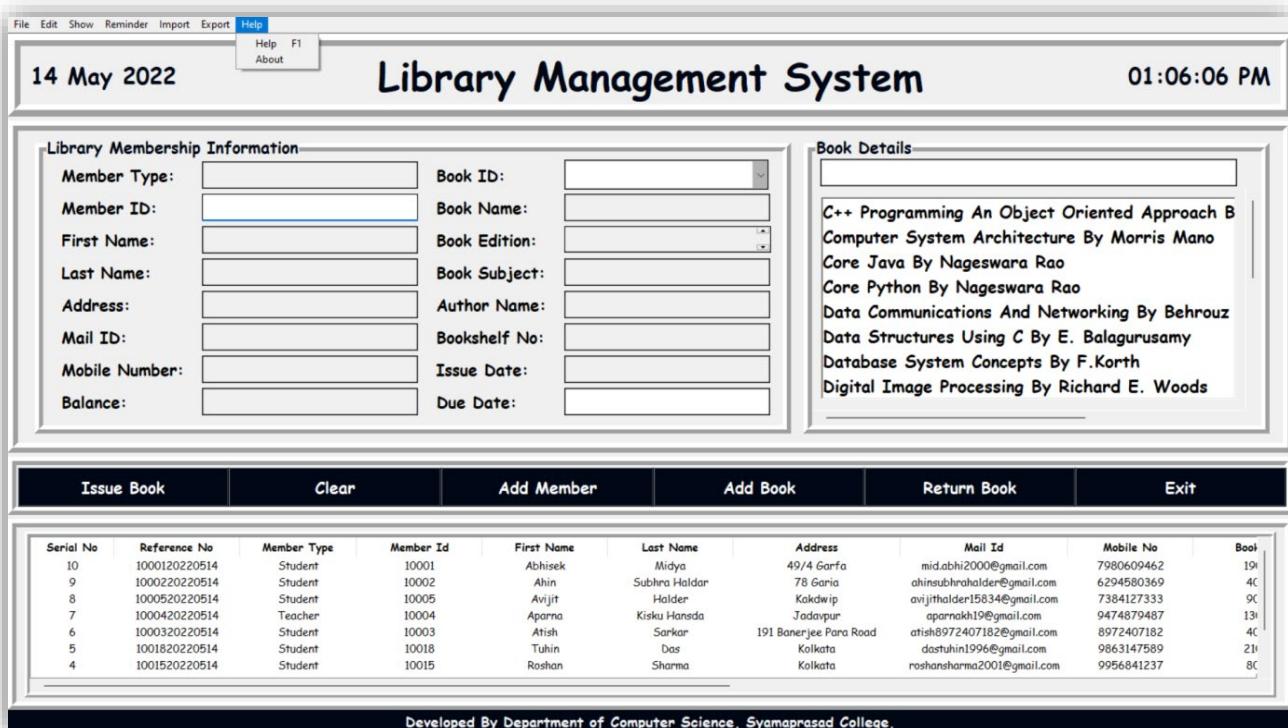
Library Membership Information		Book Details	
Member Type:		Book ID:	
Member ID:		Book Name:	
First Name:		Book Edition:	
Last Name:		Book Subject:	
Address:		Author Name:	
Mail ID:		Bookshelf No:	
Mobile Number:		Issue Date:	
Balance:		Due Date:	

Issue Book **Clear** **Add Member** **Add Book** **Return Book** **Exit**

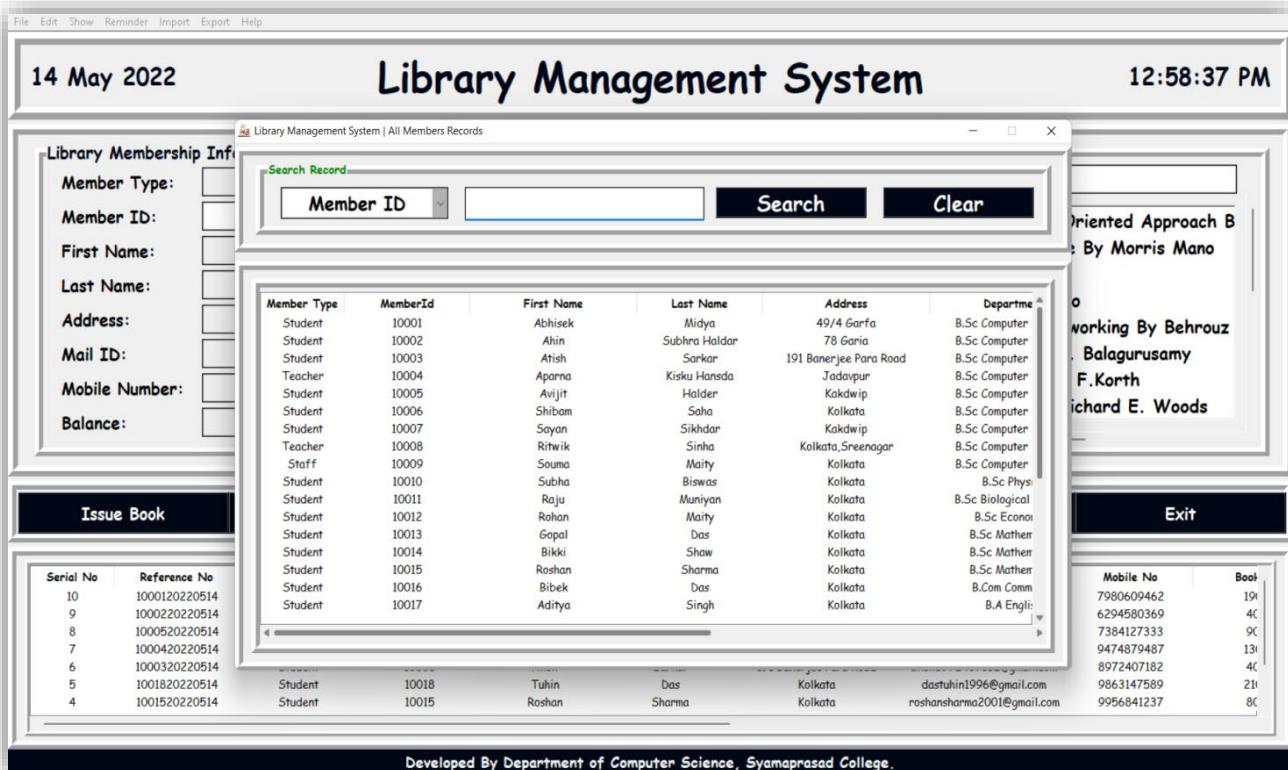
Serial No	Reference No	Member Type	Member Id	First Name	Last Name	Address	Mail Id	Mobile No	Book
10	1000120220514	Student	10001	Abhishek	Midya	49/4 Garfa	mid.abhi2000@gmail.com	7980609462	19t
9	1000220220514	Student	10002	Ahini	Subhra Haldar	78 Garia	ahinsubrahmihalder@gmail.com	6294580369	4C
8	1000520220514	Student	10005	Avijit	Haldar	Kakdwip	avijithaldar15834@gmail.com	7384127333	9C
7	1000420220514	Teacher	10004	Aparna	Kisku Hansda	Jadavpur	aparnokh19@gmail.com	9474879487	13t
6	1000320220514	Student	10003	Arif	Sarkar	191 Bonerjee Para Road	arish8972407182@gmail.com	8972407182	4C
5	1001820220514	Student	10018	Tuhin	Das	Kolkata	dastuhin1996@gmail.com	9863147589	21t
4	1001520220514	Student	10015	Roshan	Sharma	Kolkata	roshansharma2001@gmail.com	9956841237	8C

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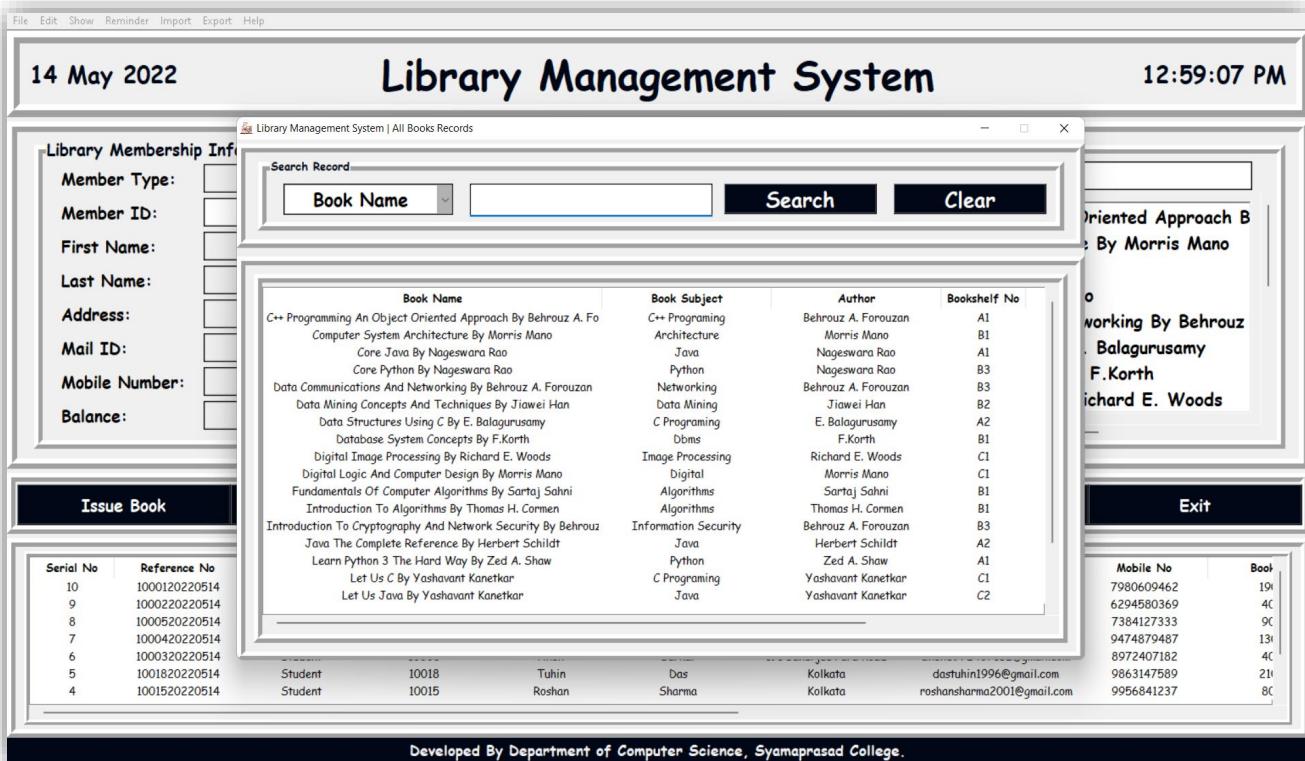
2.1.5 Help



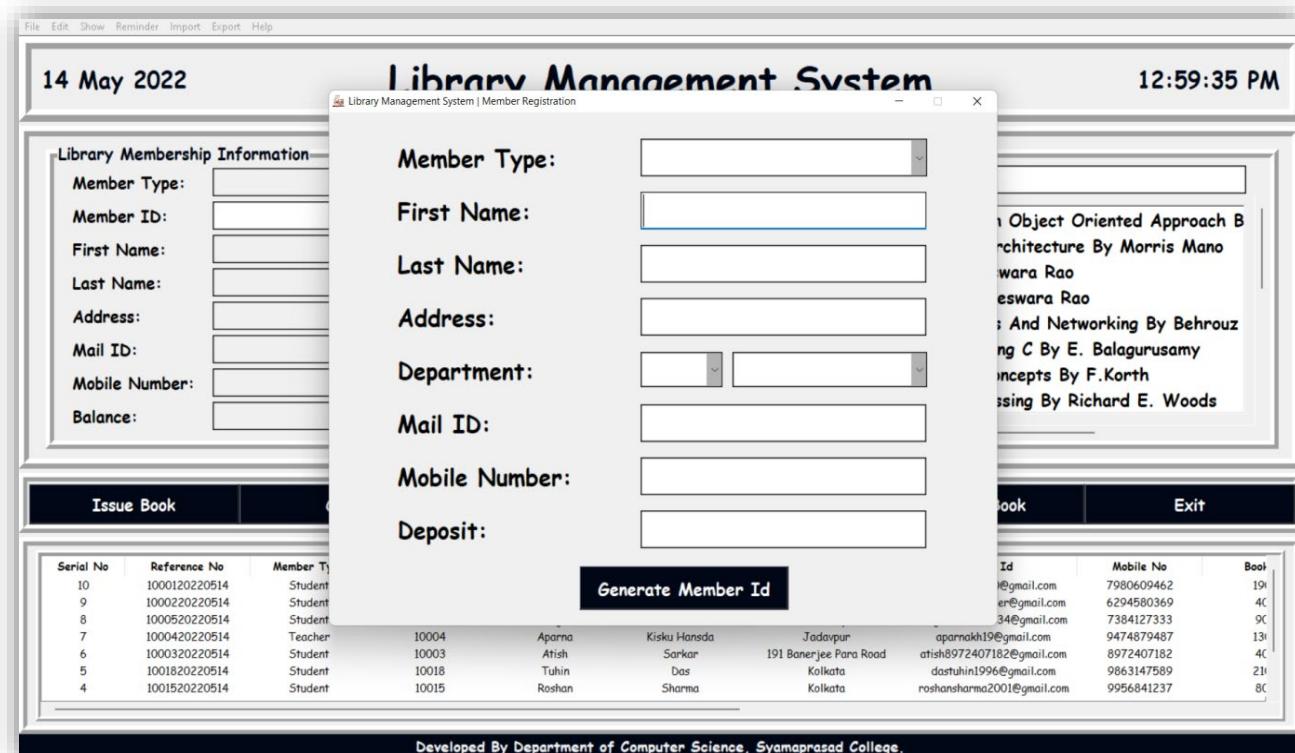
2.2 All Members Records



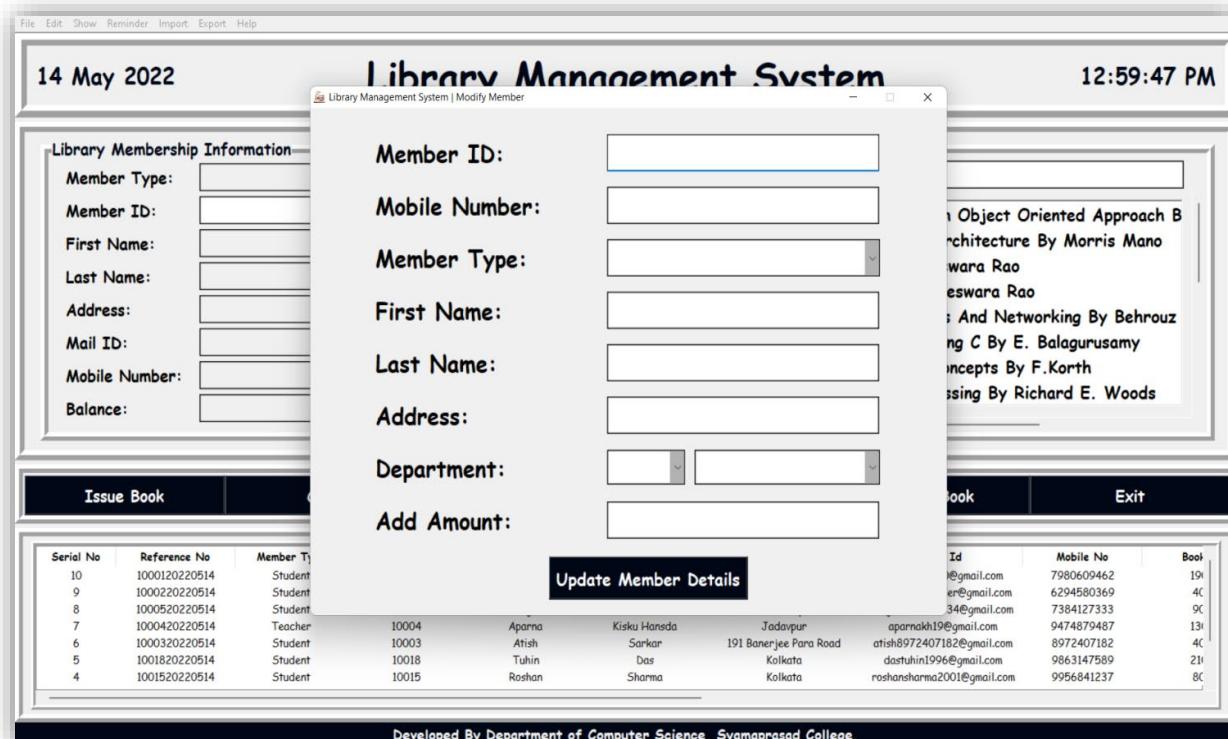
2.3 All Books Records



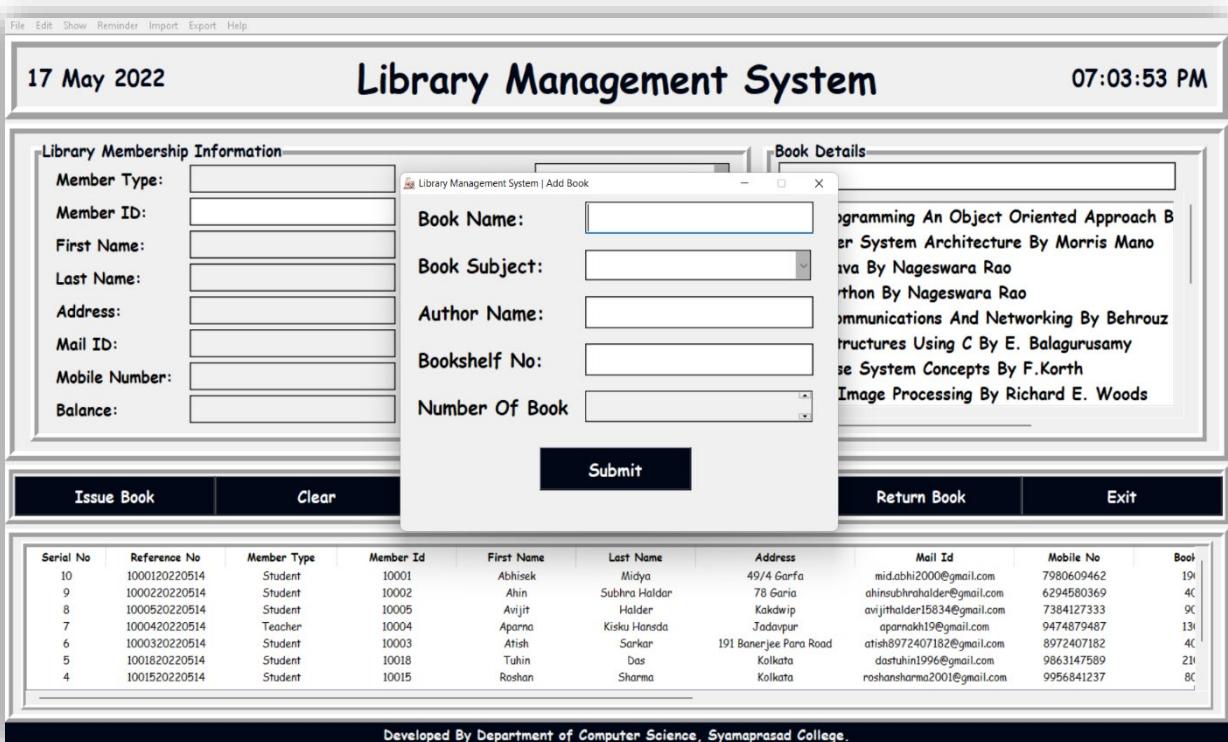
2.4 Member Registration



2.5 Modify Member



2.6 Add Book



2.7 Modify Book

File Edit Show Reminder Import Export Help

14 May 2022 Library Management System 01:00:20 PM

Library Membership Information		Book Details	
Member Type:	Book ID:	Book Name:	C++ Programming An Object Oriented Approach B
Member ID:	Book Name:	Computer System Architecture By Morris Mano	Computer System Architecture By Morris Mano
First Name:	Book Edition:	Code Theory By Nageswara Rao	Code Theory By Nageswara Rao
Last Name:		on By Nageswara Rao	on By Nageswara Rao
Address:		Communications And Networking By Behrouz	Communications And Networking By Behrouz
Mail ID:		Structures Using C By E. Balagurusamy	Structures Using C By E. Balagurusamy
Mobile Number:		System Concepts By F. Korth	System Concepts By F. Korth
Balance:		Image Processing By Richard E. Woods	Image Processing By Richard E. Woods

Book Name: Number Of Books:

Submit

Issue Book Clear Add Member Add Book Return Book Exit

Serial No	Reference No	Member Type	Member Id	First Name	Last Name	Address	Mail Id	Mobile No	Book
10	1000120220514	Student	10001	Abhishek	Mridya	49/4 Garfa	mid.abhi2000@gmail.com	7980609462	19t
9	1000220220514	Student	10002	Ahin	Subhra Haldar	78 Garia	ahinsubrahmhalder@gmail.com	6294580369	4C
8	1000520220514	Student	10005	Avijit	Haldar	Kakdwip	avijithalder15834@gmail.com	7384127333	9C
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4	1001520220514	Student	10015	Roshan	Sharma	Kolkata	roshansharma2001@gmail.com	9956841237	8C

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2.8 Return Book

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17 May 2022 Library Management System 07:04:04 PM

Library Membership Information		Book Details	
Member Type:	Reference No:	Book Id:	Programming An Object Oriented Approach B
Member ID:			Computer System Architecture By Morris Mano
First Name:			Java By Nageswara Rao
Last Name:			Python By Nageswara Rao
Address:			Communications And Networking By Behrouz
Mail ID:			Structures Using C By E. Balagurusamy
Mobile Number:			System Concepts By F. Korth
Balance:			Image Processing By Richard E. Woods

Book Details

Reference No: Book Id:

Due Date: Return Date:

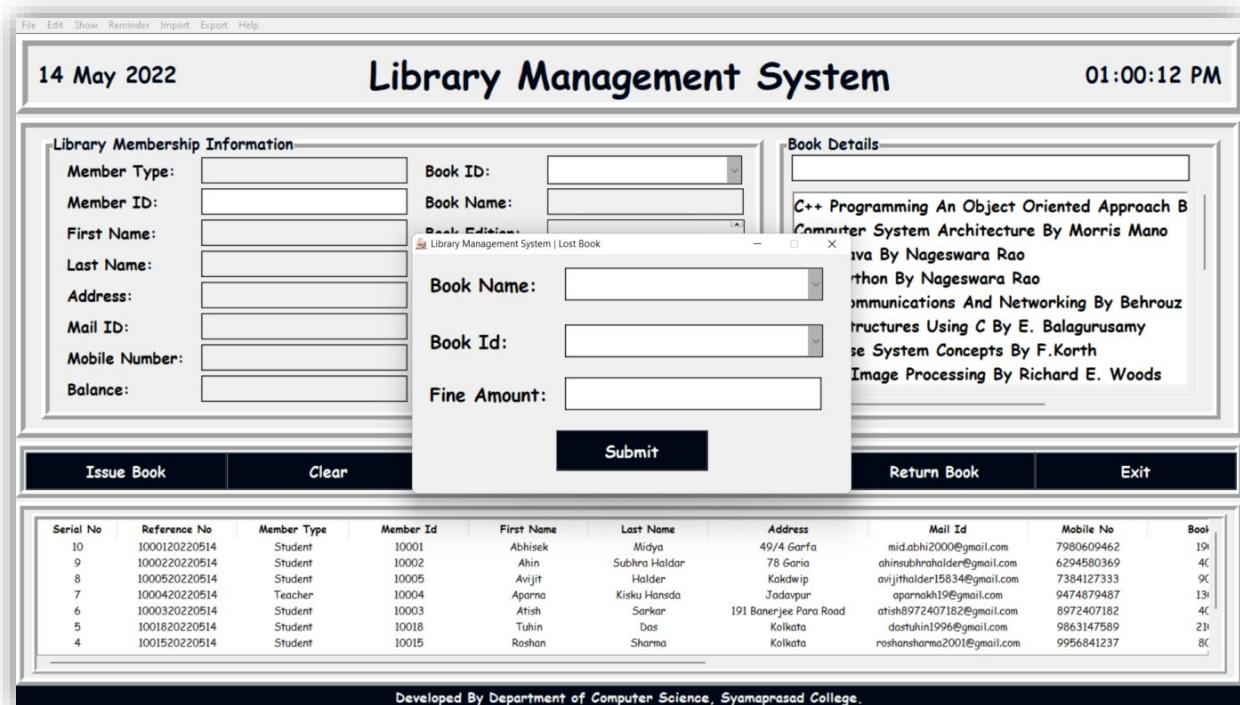
Submit

Issue Book Clear Return Book Exit

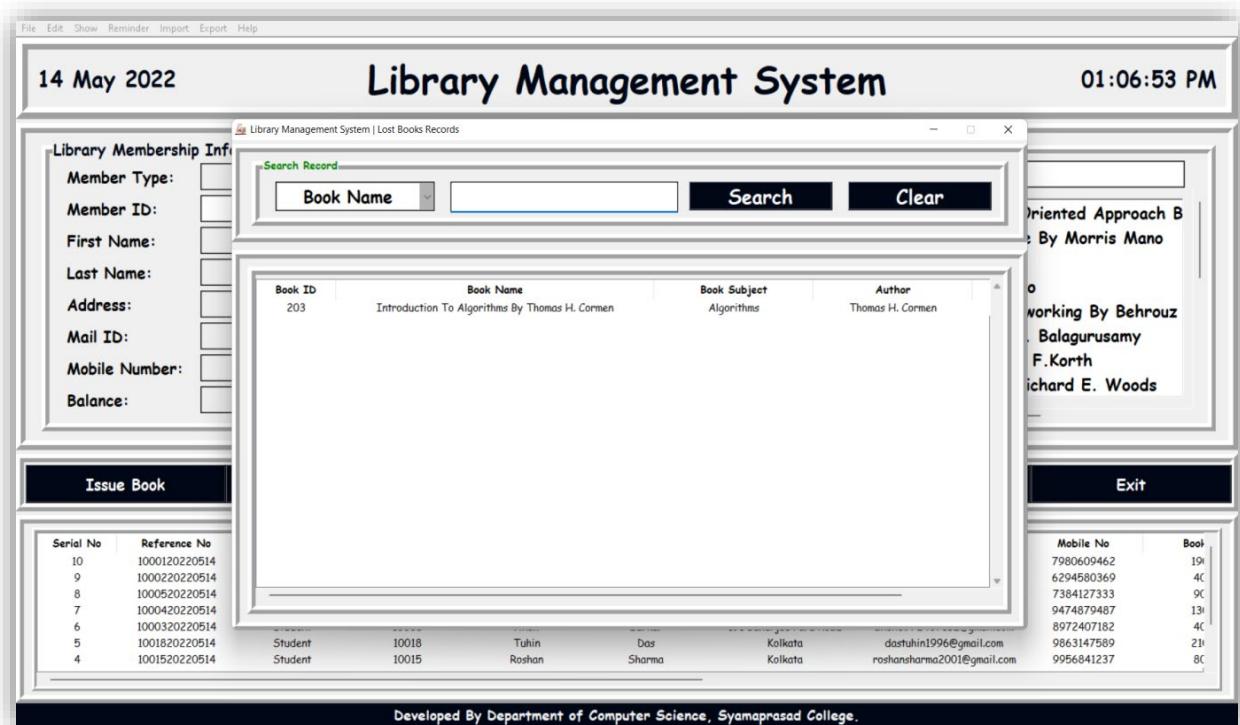
Serial No	Reference No	Member Type	Member Id	First Name	Last Name	Address	Mail Id	Mobile No	Book
10	1000120220514	Student	10001	Abhishek	Mridya	49/4 Garfa	mid.abhi2000@gmail.com	7980609462	19t
9	1000220220514	Student	10002	Ahin	Subhra Haldar	78 Garia	ahinsubrahmhalder@gmail.com	6294580369	4C
8	1000520220514	Student	10005	Avijit	Haldar	Kakdwip	avijithalder15834@gmail.com	7384127333	9C
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6	1000320220514	Student	10003	Atish	Sarkar	191 Banerjee Para Road	atish8972407182@gmail.com	8972407182	4C
5	1001820220514	Student	10018	Tuhin	Das	Kolkata	dastuhin1996@gmail.com	9863147589	21t
4	1001520220514	Student	10015	Roshan	Sharma	Kolkata	roshansharma2001@gmail.com	9956841237	8C

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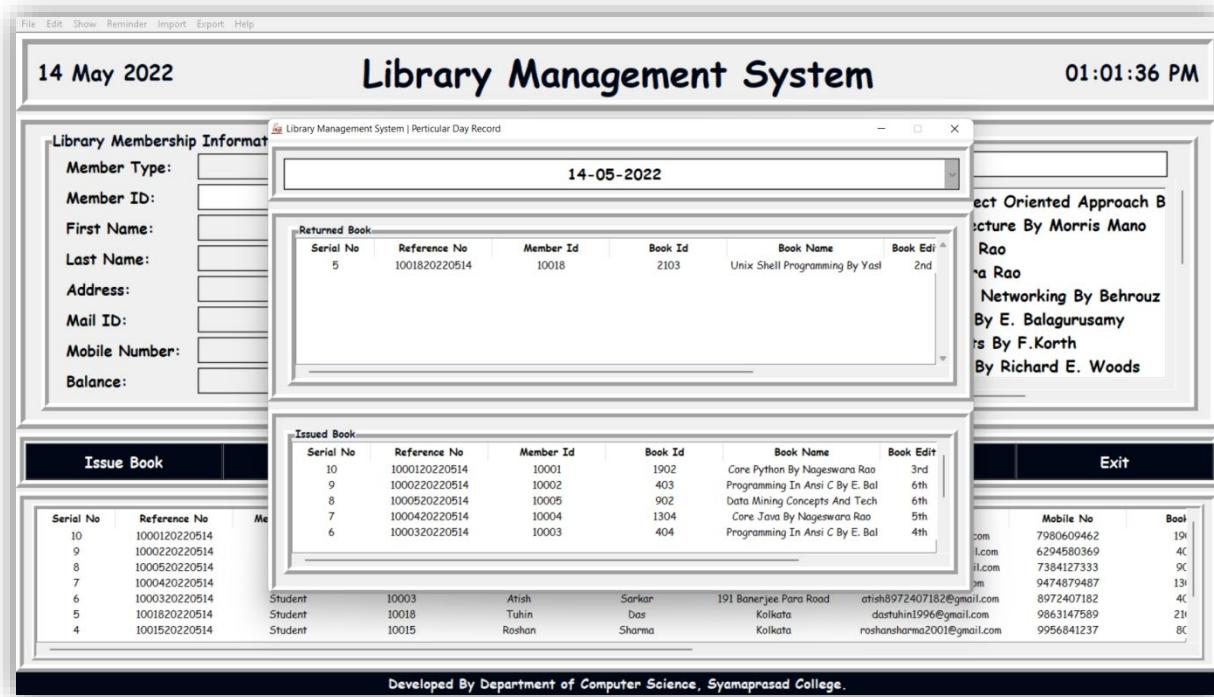
2.9 Lost book



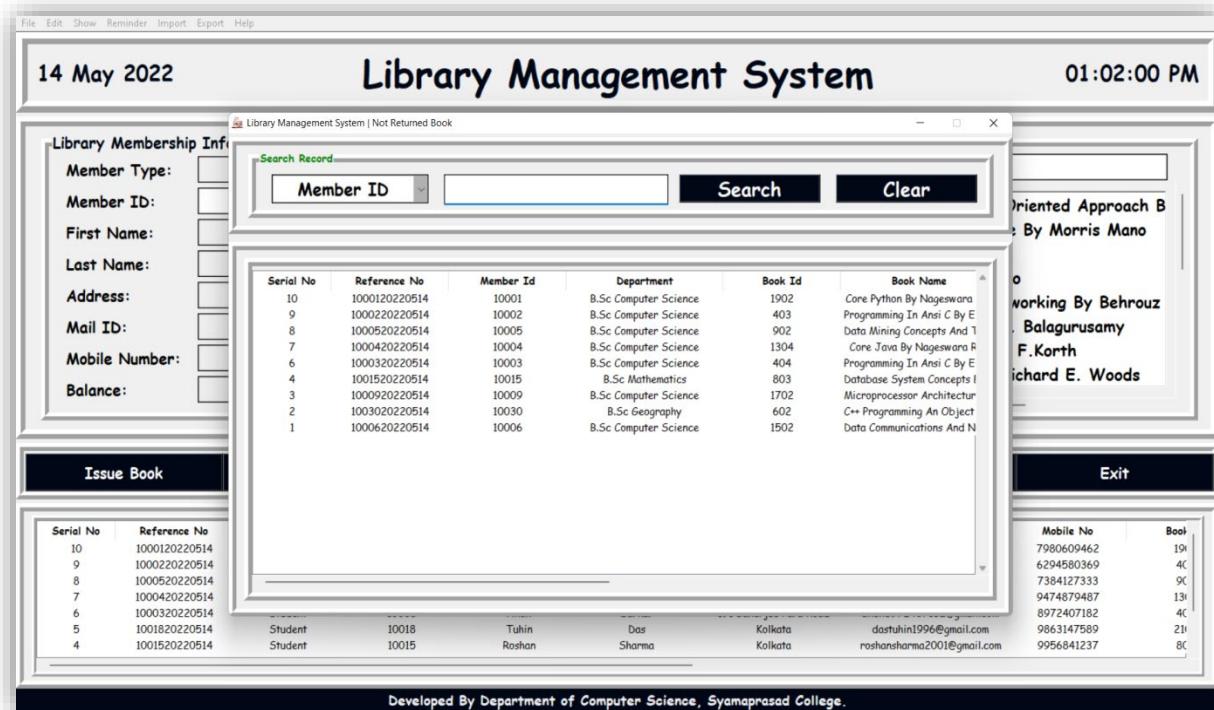
2.10 Lost Books Record



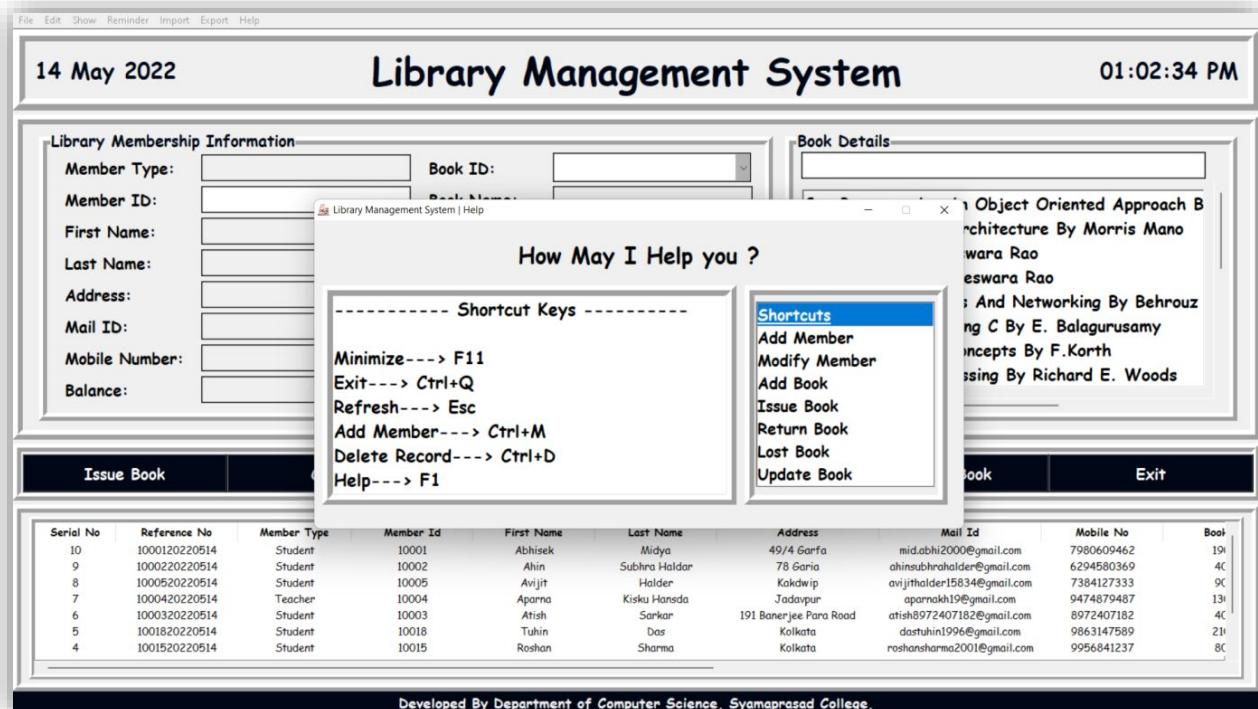
2.11 Particular Day Record



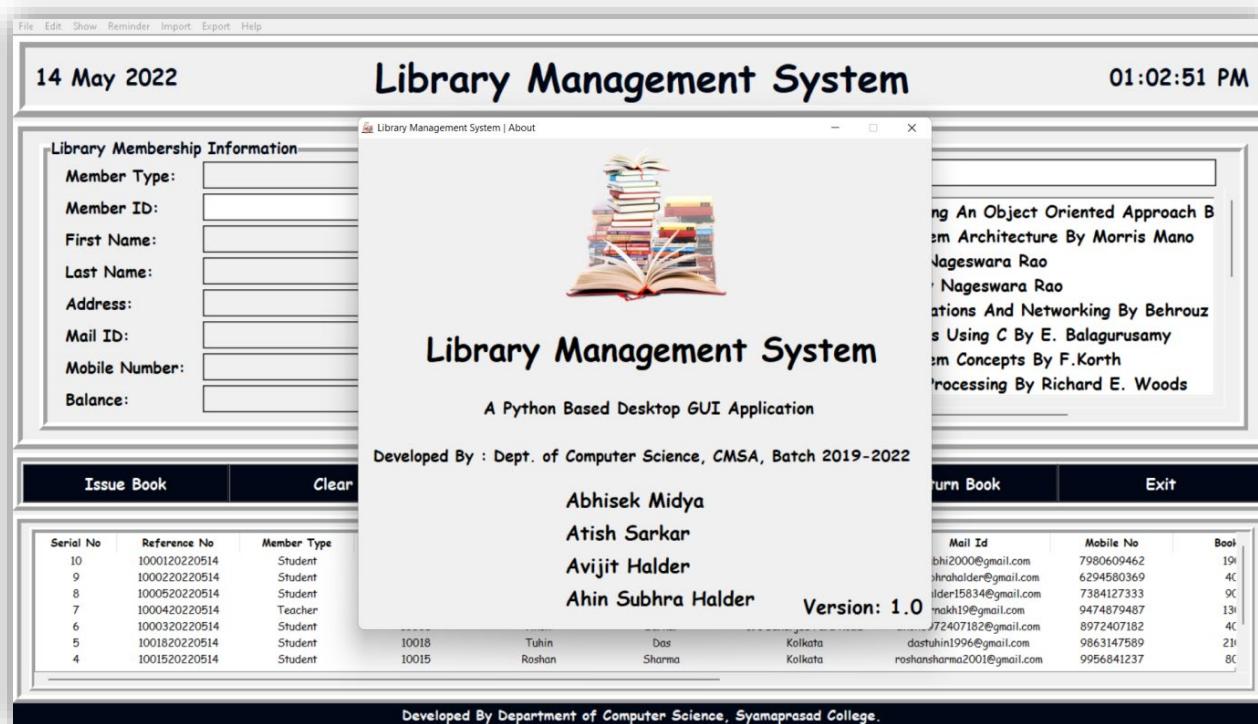
2.12 Not Returned Book



2.13 Help



2.14 About



3. Member/User Panel

File Edit Show Help

14 May 2022 Library Management System 01:03:33 PM

Library Membership Information

Member Type:	Student	Department:	B.Sc Computer Science
Member ID:	10001	Mail ID:	mid.abhi2000@gmail.com
First Name:	Abhisek	Mobile Number:	7980609462
Last Name:	Midya	Balance:	5000
Address:	49/4 Garfa	Book Count:	1

Book Details

Databases	In Object Oriented Approach By B.
Digital Image Processing	Architecture By Morris Mano
Information Security	Nageswara Rao
Java	Java Programming
Microprocessor 8085	Networks
Networking	Operating System
Python	Python Programming
Shell Programming	Database System Concepts By F. Korth
Data Structures Using C	Digital Image Processing By Richard E. Woods
Using C By E. Balagurusamy	Digital Logic And Computer Design By Morris Mano
Database System Concepts By F. Korth	Fundamentals Of Computer Algorithms By Sanjeev Suri
Digital Image Processing By Richard E. Woods	
Digital Logic And Computer Design By Morris Mano	
Fundamentals Of Computer Algorithms By Sanjeev Suri	

Refresh E-Books Change Password Exit

Serial No Reference No Book Id Book Name Book Edition Book Subject Book Author Issue Date Due Date Returned Date

10	1000120220514	1902	Core Python By Nageswara Rao	3rd	Python	Nageswara Rao	2022-05-14	2022-06-15	None
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Developed By Department of Computer Science, Syamaprasad College.

3.1 Change Password

File Edit Show Help

14 May 2022 Library Management System 01:03:42 PM

Library Membership Information

Member Type:	Student	Department:	B.Sc Computer Science
Member ID:	10001	Mail ID:	mid.abhi2000@gmail.com
First Name:	Abhisek	Mobile Number:	7980609462
Last Name:	Midya	Balance:	5000
Address:	49/4 Garfa	Book Count:	1

New Password:

Re-enter Password:

Submit

Book Details

C++ Programming An Object Oriented Approach By B.	In Object Oriented Approach By B.
Computer System Architecture By Morris Mano	Architecture By Morris Mano
Nageswara Rao	Nageswara Rao
Java By Nageswara Rao	Java Programming
Python By Nageswara Rao	Networks
Communications And Networking By Behrouz A.	Operating System
Structures Using C By E. Balagurusamy	Python Programming
Database System Concepts By F. Korth	Database System Concepts By F. Korth
Digital Image Processing By Richard E. Woods	Digital Image Processing By Richard E. Woods
Digital Logic And Computer Design By Morris Mano	Digital Logic And Computer Design By Morris Mano
Fundamentals Of Computer Algorithms By Sanjeev Suri	Fundamentals Of Computer Algorithms By Sanjeev Suri

Refresh E-Books

Serial No Reference No Book Id Book Name Book Edition Book Subject Book Author Issue Date Due Date Returned Date

10	1000120220514	1902	Core Python By Nageswara Rao	3rd	Python	Nageswara Rao	2022-05-14	2022-06-15	None
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Developed By Department of Computer Science, Syamaprasad College.

3.2 E-Book

The screenshot shows a Windows desktop environment with a web browser window open to the 'SPC E-Library' website at spclms.blogspot.com. The browser's address bar and taskbar are visible at the bottom. The website has a light gray header with the title 'SPC E-Library'. On the left, a sidebar menu includes 'Home', 'Category', 'About', 'Contact', and 'Sitemap'. The main content area features a 'Trending' section with a book cover for 'Java The Complete Reference, Herbert Schildt, McGraw-Hill Education'. Below it is a 'Latest posts' section displaying three book covers: 'Fundamentals of Software Engineering' by Rajib Mall, 'Introduction to Computation and Programming Using Python' by John V. Guttag, and 'DATA STRUCTURES WITH JAVA' by John R. Hubbard, Ph.D. A 'Profile' sidebar on the right shows a user icon and the text 'SPC E-Library'. A 'Popular Posts' sidebar lists four recent uploads: 'Java The Complete Reference, Herbert Schildt, McGraw-Hill Education' (June 17, 2022), 'Introduction to Computation and Programming Using Python By John V...' (June 17, 2022), 'Fundamentals of Software Engineering by Rajib Mall' (June 17, 2022), and 'Data Structures With JAVA By Schaums Outlines' (June 17, 2022). The system tray at the bottom shows icons for battery, signal, volume, and network.

This screenshot shows the same website as above, but in dark mode. The overall theme is darker, with black headers and footers. The sidebar menu, main content sections ('Trending' and 'Latest posts'), and the 'Profile' and 'Popular Posts' sidebars all appear in a dark version of the website's design. The taskbar at the bottom remains the same, showing the Windows logo, a search bar, and various pinned application icons.

5.2 Server-Side Development:

1. Back-end Database (LMS)

The screenshot shows the phpMyAdmin interface for the LMS database. The left sidebar lists databases: information_schema, New, Ims, mysql, performance_schema, phpmyadmin, and test. The Ims database is selected, showing its tables: books_details, issue_book, lost_book, member_details, pending, and serial. The main area displays the structure of the books_details table, which has 81 rows and 8 columns: book_name, book_sub, author, shelf_no, no_book, rem_book, id_counter, and a primary key column. Below the table structure is a 'Create table' form with 'Name:' and 'Number of columns: 4' fields.

1.1 books-details

The screenshot shows the phpMyAdmin interface for the books_details table. The left sidebar lists the same databases as the previous screenshot. The books_details table is selected, showing 81 rows of data. The columns are: book_name, book_sub, author, shelf_no, no_book, rem_book, and id_counter. The data includes various books like 'C++ Programming An Object Oriented Approach By Beh...', 'Computer System Architecture By Morris Mano', 'Core Java By Nageswara Rao', etc., with their respective details like shelf location and quantity.

1.2 issue-book

The screenshot shows the phpMyAdmin interface for the 'issue_book' table in the 'Ims' database. The table structure includes columns: ref_no, member_id, book_id, book_name, book_ed, issue_date, due_date, and return_date. The data grid displays 10 rows of book issuance records. The interface includes various navigation and search tools.

ref_no	member_id	book_id	book_name	book_ed	issue_date	due_date	return_date
1000120220514	10001	1902	Core Python By Nageswara Rao	3rd	2022-05-14	2022-06-15	NULL
1000220220514	10002	403	Programming In Ansi C By E. Balagurusamy	6th	2022-05-14	2022-05-30	NULL
1000320220514	10003	404	Programming In Ansi C By E. Balagurusamy	4th	2022-05-14	2022-05-30	NULL
1000420220514	10004	1304	Core Java By Nageswara Rao	5th	2022-05-14	2022-06-15	NULL
1000520220514	10005	902	Data Mining Concepts And Techniques By Jiawei Han	6th	2022-05-14	2022-05-29	NULL
1000620220514	10006	1502	Data Communications And Networking By Behrouz A. Forouzan	3rd	2022-05-14	2022-05-25	NULL
1000920220514	10009	1702	Microprocessor Architecture With The 8085 By Ramesh S. Chaturvedi	5th	2022-05-14	2022-06-01	NULL
1001520220514	10015	803	Database System Concepts By F. Korth	13th	2022-05-14	2022-05-20	NULL
1001820220514	10018	2103	Unix Shell Programming By Yashwant Kanitkar	2nd	2022-05-14	2022-05-29	2022-05-14
1003020220514	10030	602	C++ Programming An Object Oriented Approach By Behrouz A. Forouzan	15th	2022-05-14	2022-06-05	NULL

1.3 lost-book

The screenshot shows the phpMyAdmin interface for the 'lost_book' table in the 'Ims' database. The table structure includes columns: book_id, book_name, and lost_date. The data grid displays 1 row of a lost book record. The interface includes various navigation and search tools.

book_id	book_name	lost_date
203	Introduction To Algorithms By Thomas H. Cormen	2022-05-14

1.4 member details

The screenshot shows the phpMyAdmin interface for the 'ims' database. The left sidebar lists databases and tables, with 'member_details' selected. The main area displays the contents of the 'member_details' table. The table has columns: member_type, member_id, first_name, last_name, address, dept, mail, mobile, amount, and password. The data includes various student and teacher entries with their respective details like name, address, and contact information.

member_type	member_id	first_name	last_name	address	dept	mail	mobile	amount	password
Student	10001	Abhishek	Midya	494 Garfa	B.Sc Computer Science	mid.abhi2000@gmail.com	7980609462	5000	abhi
Student	10002	Abin	Subhra Haldar	78 Garia	B.Sc Computer Science	ahinsubrahralder@gmail.com	6294580369	4000	abin
Student	10003	Atish	Sarkar	191 Banerjee Para Road	B.Sc Computer Science	atish8972407182@gmail.com	8972407182	500	Atsh8972
Teacher	10004	Aparna	Kisku Hansda	Jadavpur	B.Sc Computer Science	aparnakh19@gmail.com	9474979487	5000	zOKqjQX
Student	10005	Avijit	Halder	Kakdwip	B.Sc Computer Science	avijithalder15834@gmail.com	7384127333	5000	VLqOaPV
Student	10006	Shibani	Saha	Kolkata	B.Sc Computer Science	shibansaha001@gmail.com	7384122335	1000	RpnJwP
Student	10007	Sayan	Sikdar	Kakdwip	B.Sc Computer Science	sayansikdar152@gmail.com	9832514500	1100	JHBzXK
Teacher	10008	Ritwik	Sinha	Kolkata, Sreenagar	B.Sc Computer Science	sinhavitwik2000@gmail.com	9333851200	2000	DfIqyJA
Staff	10009	Souma	Maitry	Kolkata	B.Sc Computer Science	soumyadipmaitry111@gmail.com	8001572005	2500	xMULuSy
Student	10010	Subha	Biswas	Kolkata	B.Sc Physics	subhadrepbiswas1580@gmail.com	9365814739	2500	KWoaVPU
Student	10011	Raju	Muniryan	Kolkata	B.Sc Biological Science	munyansunmuyadip12@gmail.com	9675148563	1500	OLCVqgH
Student	10012	Rohan	Maitry	Kolkata	B.Sc Economics	maitryammy1999@gmail.com	9615279235	1700	hhrzcYGB
Student	10013	Gopal	Das	Kolkata	B.Sc Mathematics	gopudas156@gmail.com	7385126992	1900	AoOF-ILB
Student	10014	Bikki	Shaw	Kolkata	B.Sc Mathematics	bikkishaw2001@gmail.com	7384259758	2000	NEITHJbd
Student	10015	Roshan	Sharma	Kolkata	B.Sc Mathematics	roshansharma2001@gmail.com	9956841237	2500	HedWUjsc
Student	10016	Bibek	Das	Kolkata	B.Com Commerce	bibekdas1990@gmail.com	9863147598	2500	LafPAjCp
Student	10017	Aditya	Singh	Kolkata	B.A English	adityasingh2580@gmail.com	9645718278	1000	CvEdpJXU
Student	10018	Tuhin	Das	Kolkata	B.Sc Electronics	dastuhin1996@gmail.com	9883147589	2000	AsolWBvm
Student	10019	Anindya	Panda	Kakdwip	B.Sc Biological Science	anindyapanda2001@gmail.com	9687563687	2500	MOotQYF
Student	10020	Swarup	Das	Kolkata	B.Sc Electronics	swarupdas2005@gmail.com	8956175643	2500	clsSawvv

1.5 pending

The screenshot shows the phpMyAdmin interface for the 'ims' database. The left sidebar lists databases and tables, with 'pending' selected. The main area displays the contents of the 'pending' table. The table has columns: member_id, ref_no, and book_id. The data includes several entries with their respective reference numbers and book identifiers.

member_id	ref_no	book_id
10001	1000120220514	1902
10002	1000220220514	403
10003	1000320220514	404
10004	1000420220514	1304
10005	1000520220514	902
10006	1000620220514	1502
10009	1000920220514	1702
10015	1001520220514	803
10030	1003020220514	602

1.6 serial

localhost / 127.0.0.1 / lms / serial

Showing rows 0 - 9 (10 total, Query took 0.0005 seconds.)

	ref_no	sr_no
<input type="checkbox"/>	1000120220514	10
<input type="checkbox"/>	1000220220514	9
<input type="checkbox"/>	1000320220514	8
<input type="checkbox"/>	1000420220514	7
<input type="checkbox"/>	1000520220514	6
<input type="checkbox"/>	1000620220514	5
<input type="checkbox"/>	1000720220514	4
<input type="checkbox"/>	1000820220514	3
<input type="checkbox"/>	1000920220514	2
<input type="checkbox"/>	1001020220514	1

1.7 Request Form Database

Visitor Interaction Form

Search Advanced Search

Displaying all submissions

Date	Name-First	Name-Last	Email	Subject	Message	Quiz Score	Reference ID	IP
2022-06-18 14:2...	Abhisek	Midya	mid.abhi2000@...	Request	Please add Core...		REF-1655576876	43.251.90.78

Displaying 1 to 1 of 1 items

First | Previous Page 1 of 1 Next | Last

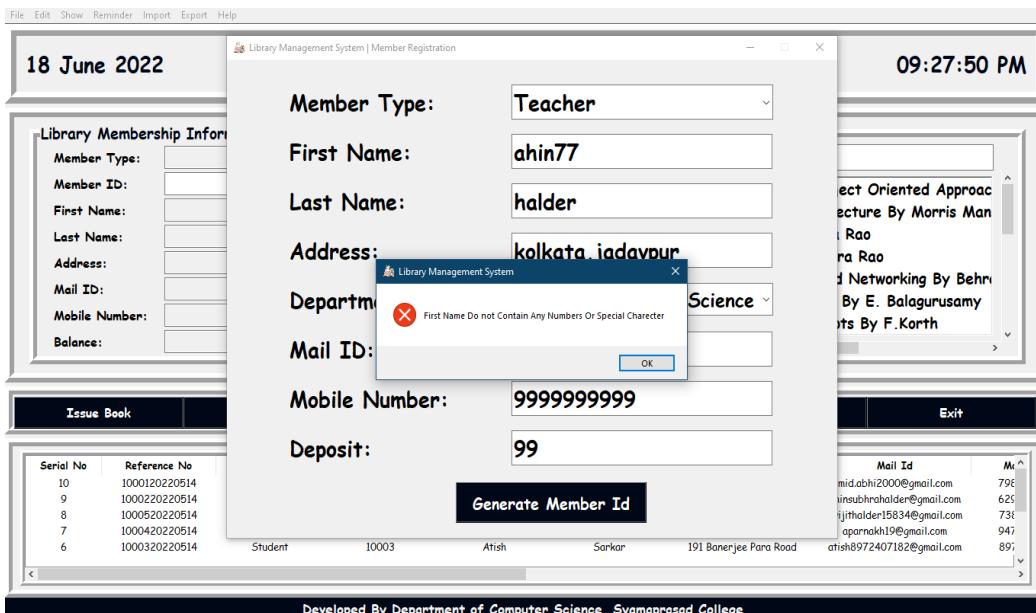
Items per page 10

SUPPORT

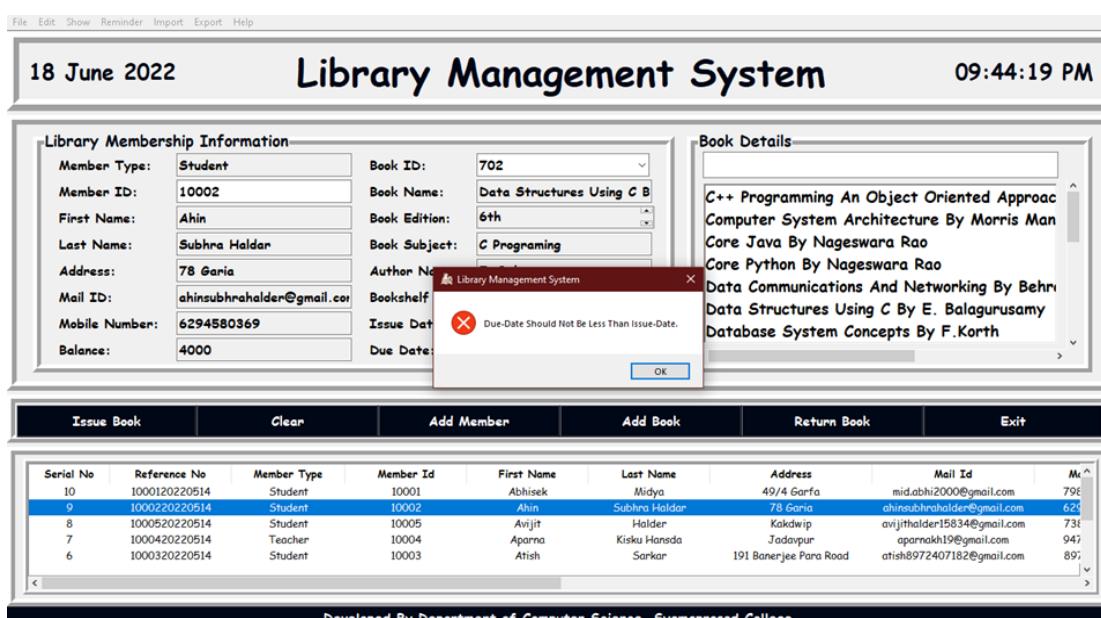
Results and Discussion

6.1 Blackbox Testing:

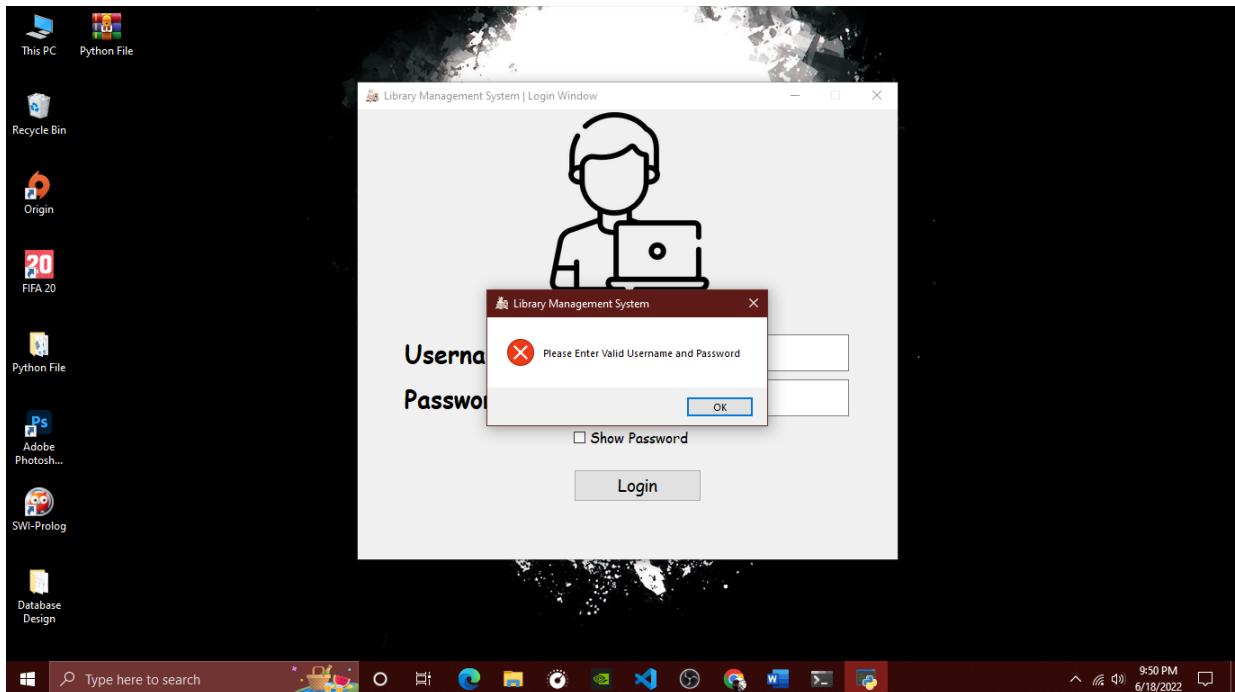
- a) In the below picture it has shown that we are solving the problem that First Name & Last Name field should take only alphabet.



- b) In the below picture it has shown that Book due date can't be less than Issue book date if we enter due date less than issue date than system will give an error message.



c) In the below picture it has shown that if we enter wrong username and password then it will give an error message.



d) In the below picture it has shown that if we add previous recorded book into the database then the system will give an error message.

Serial No	Reference No	Member Type	Member Id	First Name	Last Name	Address	Mail Id	Mobile No	Bookshelf
11	1000120220609	Student	10001	Abhishek	Mridya	49/4 Garfa	mid.abhi200@gmail.com	7980609462	19l
10	1000120220514	Student	10001	Abhishek	Mridya	49/4 Garfa	mid.abhi200@gmail.com	7980609462	19l
9	1000220220514	Student	10002	Ahins	Subhro Halder	78 Gorai	ahinsubrohalder@gmail.com	6294580369	4C
8	1000520220514	Student	10005	Avijit	Halder	Kakdwip	avijithalder1583@gmail.com	7384127333	9C
7	1000420220514	Teacher	10004	Aparna	Kisku Hansda	Jadavpur	aparnokh19@gmail.com	9474879487	13l
6	1000320220514	Student	10003	Atish	Sarkar	191 Banerjee Para Road	atish8972407182@gmail.com	8972407182	4C
5	1001820220514	Student	10018	Tuhin	Das	Kolkata	das.tuhin1996@gmail.com	9863147589	21l

6.2 Discussion:

When we design the project there was errors like naming error, wrong date entry, authentication error. We found these errors at the time of testing the software and solved these errors afterwards.

Using this system, we can eliminate the paperwork in library. We developed a well-organized library borrowing system. It has minimized the task and the effort being performed by both the librarian and borrowers. It will help the borrowers to easily borrow a book and librarian can manage the records easily.

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 it also reduces the human efforts.

Conclusion

The package was designed in such a way that future modifications can be done easily. The following conclusions can be deduced from the development of the project.

- a) Library Management System of the entire system improves the efficiency.
- b) It provides a friendly graphical user interface which proves to be better when compared to the existing system.
- c) It gives appropriate access to the authorized users depending on their permissions.
- d) It effectively overcomes the delay in communications.
- e) Updating of information becomes so easier.
- f) System security, data security and reliability are the striking features.
- g) The System has adequate scope for modification in future if it is necessary.

References

➤ **PYTHON TUTORIAL --**

<https://www.pythontutorial.net/tkinter/>

➤ **TKINTER COURSE --**

https://www.youtube.com/watch?v=Z-aj8jfk_E4

<https://www.youtube.com/watch?v=YXPyB4XeYLA>

<https://www.youtube.com/watch?v=GODYXAnBDvc>

➤ **TUTORIAL POINT --**

https://www.tutorialspoint.com/python3/python_gui_programming.html

➤ **GEEKS FOR GEEKS --**

<https://www.geeksforgeeks.org/python-tkinter-tutorial/>