

LIBRARY MANAGEMENT SYSTEM

PROJECT REPORT

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November-2022**

INTRODUCTION TO THE PROJECT

Library Management system is an application that enables users to create and store book records. The application provides the facilities of: issuing, returning books, editing, adding, deleting, viewing book records.

Every library needs a system that keeps track of its books and borrowers while monitoring their availability. This application is simple to understand and can be used by anyone even if they are not familiar with it. It is user friendly and just asks the user to follow step by step operations by giving them few options. It is fast and capable to keep up with a fully functioning library of any kind; like a school, university, national or special library.

The potent coding tools of PYTHON were used to create this software package. The app has excellent usability. The package includes various modules as discussed further. User input will be taken into account for future package development or improvement.

BACKGROUND AND OBJECTIVES OF THE PROJECT:

Project assigned: LIBRARY MANAGEMENT SYSTEM

Members: Aman Kumar, Avijeet Singh Bhati

Background: The project was done using the programming languages Python, MySQL, Tkinter (built-in python library)

Objective: To develop a programme that serves as an admins-only interface for a working library. The borrower will find it easier to receive books as a result, and it will also be more handy and appealing.

Concrete Goals: Connecting database to the GUI programming to obtain a project like a library management system.

Project outcomes: One can manage and modify book data like Book ID, name, availability, price, edition, issuance date, and return date in our Library Management System project. We can add new books to the database and update old records. If the database is larger, we can search for a record to acquire more information. We can also delete a record of unnecessary books. Finally, we can get a complete overview of the database by clicking the "Show Books" button. Simply put, we can easily control all of a book's essential details. The first and most crucial methodology is that we have a login system that allows administrators to access the database with secured information about books and borrowing records by using their MySQL login credentials.

Most significantly, it is assumed that administrators and students have been registered already.

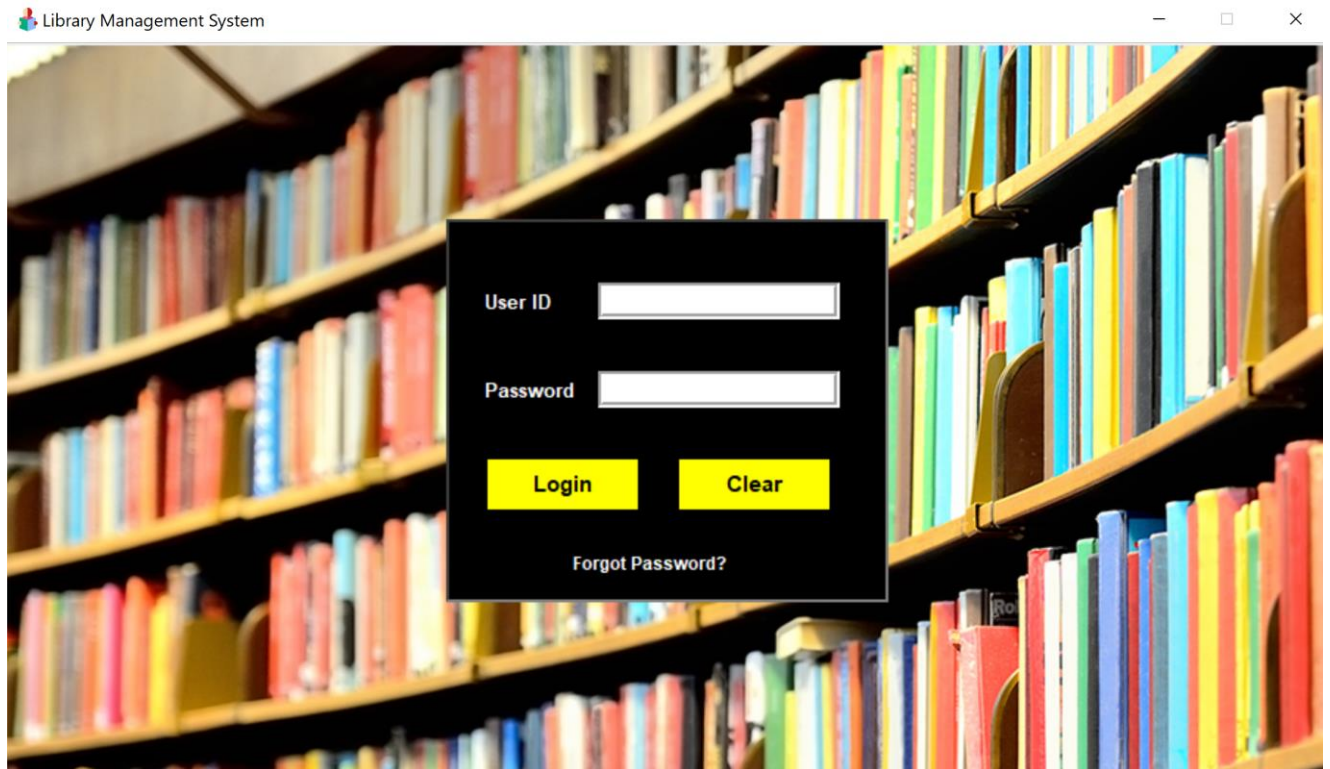
DESCRIPTION OF PROJECT:

- Library Management System, we should take details of the books and store it into a particular database to have access over them.
- We need a user interface application or GUI for operating the commands and functions that connecting to the database to manipulate and manage data.
- We need a login system to secure the data or to get accessed by only limited members or admins.
- Methods that are necessary for managing and modifying data should be included.

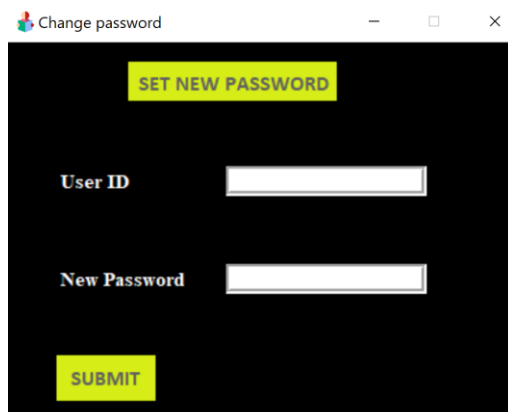
- **Methods like:**
 - Adding a new book's data
 - Updating existing records
 - Searching existing records
 - Deleting a book's details in case it is unwanted
 - Fetching records from the database
 - Showing the records on the console according to the function used
 - Login system to connect database and to secure data
 - Added time and date of a record
 - Authenticate users at their login.
 - Provide the list of books the users can borrow.
 - Mechanism to reset the password in case user forgets it.
 - Providing interface to add or delete books to staffs.

IMPLEMENTATION OF SCHEDULED WORK OF PROJECT

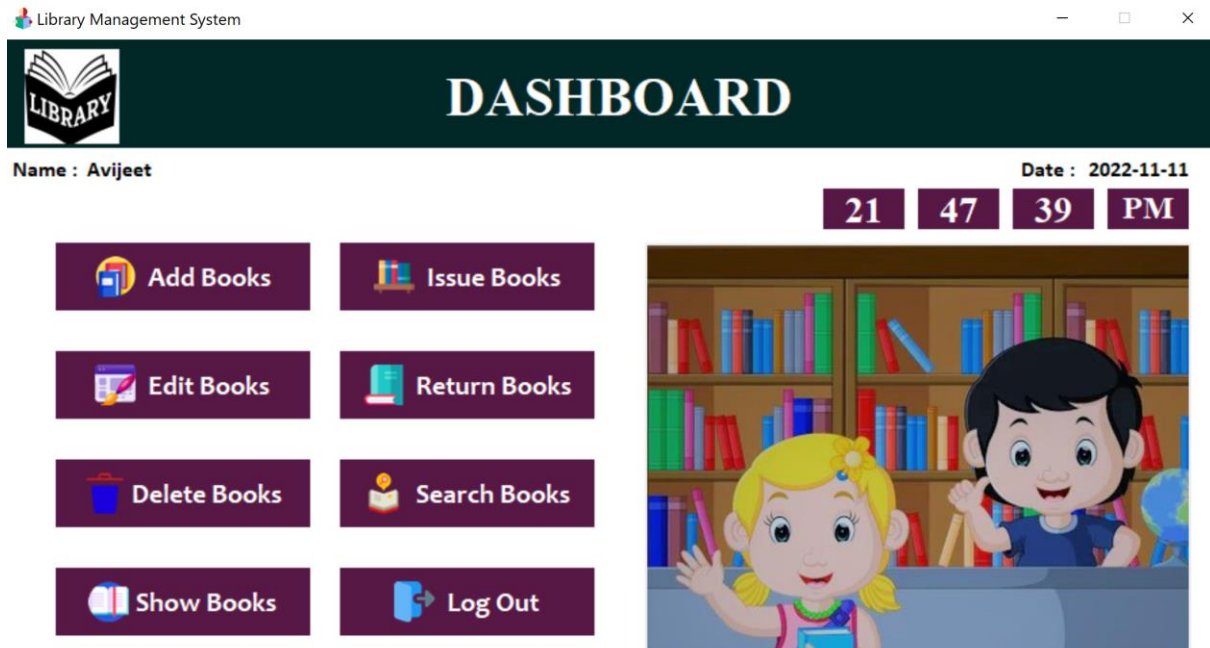
Output and UI of the project:



- When we click on the login button, if the credentials are valid, we will proceed to view the homepage of our application. Else a pop-up box will show “Your ID or Password is invalid!”.
- Clear button will delete all the details entered by the user in user id and password boxes till that time.
- Forgot Password button will prompt a user to enter their username and create a new password.



DASHBOARD:



1. ADD BOOKS

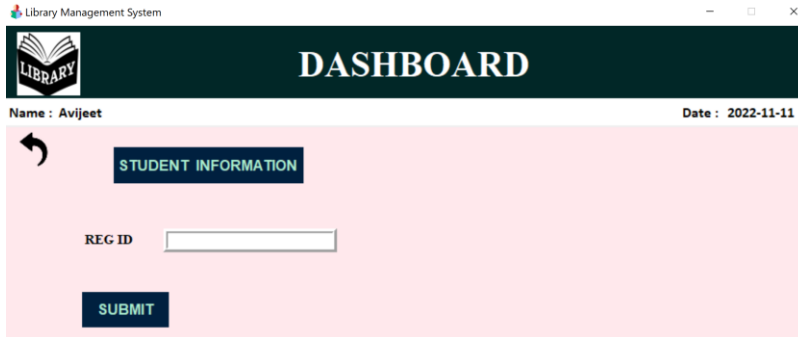
A screenshot of the "ADD BOOKS" form within the "Library Management System" dashboard. The form is set against a light pink background and includes a back arrow icon in the top left. It contains five input fields for "ID", "Title", "Author", "Edition", and "Price", each with a label to its left. A pink "SUBMIT" button is located at the bottom of the form. The header of the dashboard shows the user's name "Avijeet" and the date "2022-11-11".

- When we click on Add Books this window will open.
- Here no field can be kept null. ID will be used as the primary key.
- ID and Price accept Integer data values, the rest Char.

- If instructions are not followed, a pop-up stating “Enter valid details” will come.

2. ISSUE BOOKS

- After we click on Issue Books this window will open.



Library Management System

DASHBOARD

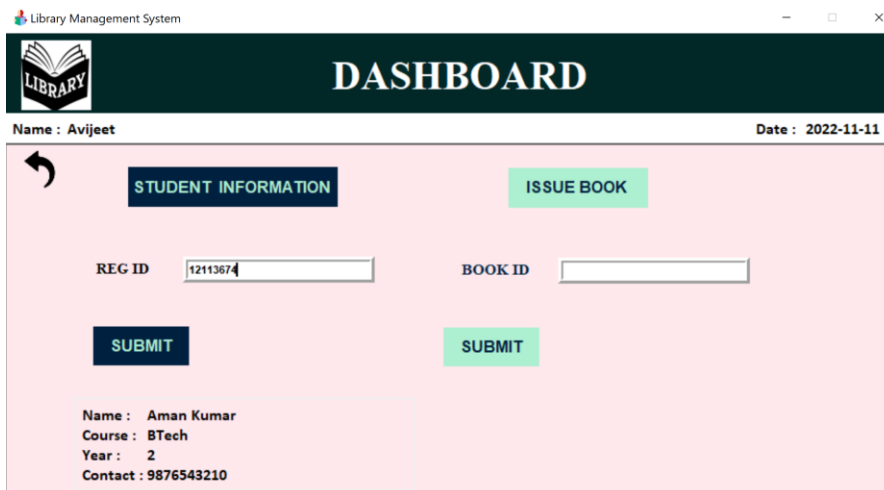
Name : Avijeet Date : 2022-11-11

STUDENT INFORMATION

REG ID

SUBMIT

- After entering a valid Reg Id,



Library Management System

DASHBOARD

Name : Avijeet Date : 2022-11-11

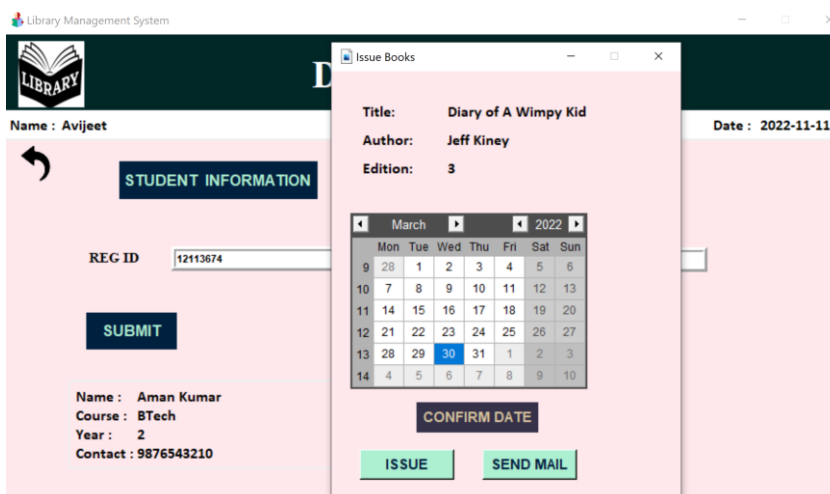
STUDENT INFORMATION **ISSUE BOOK**

REG ID BOOK ID

SUBMIT **SUBMIT**

Name : Aman Kumar
Course : BTech
Year : 2
Contact : 9876543210

- After entering a valid book id, a new pop-up will appear asking us to select the date when the borrower wishes to return the book



Library Management System

DASHBOARD

Name : Avijeet Date : 2022-11-11

STUDENT INFORMATION

REG ID

SUBMIT

Name : Aman Kumar
Course : BTech
Year : 2
Contact : 9876543210

Issue Books

Title: Diary of A Wimpy Kid
Author: Jeff Kiney
Edition: 3

March 2022

Mon	Tue	Wed	Thu	Fri	Sat	Sun
9	28	1	2	3	4	5
10	7	8	9	10	11	12
11	14	15	16	17	18	19
12	21	22	23	24	25	26
13	28	29	30	31	1	2
14	4	5	6	7	8	9

CONFIRM DATE

ISSUE **SEND MAIL**

- After selecting the return date, the book has been issued.

Library Management System

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Name : Avijeet Date : 2022-11-11

STUDENT INFORMATION

Library Management System

YOUR BOOK HAS BEEN ISSUED

OK

BOOK ID 101

ISSUE BOOK

SUBMIT

ADD MORE BOOKS YES NO

Name : Aman Kumar
Course : BTech
Year : 2
Contact : 9876543210

3. EDIT BOOKS

- After clicking the edit books button,

Library Management System

DASHBOARD

Name : Avijeet Date : 2022-11-11

EDIT BOOK

Book ID: 1234

Title: abcd

Author: abcds

Edition: 1

Price: 2

SUBMIT

EDIT BOOK DETAILS

1234

- After Clicking Submit button, (only if fields are filled according to correct data types)

Library Management System

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Name : Avijeet Date : 2022-11-11

EDIT BOOK DETAILS

1234

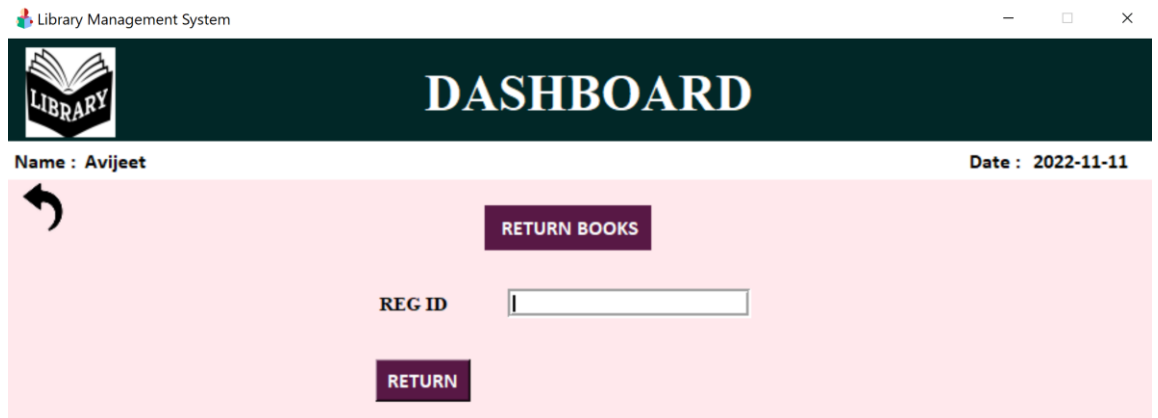
Changes Saved

Data has been updated successfully!

OK

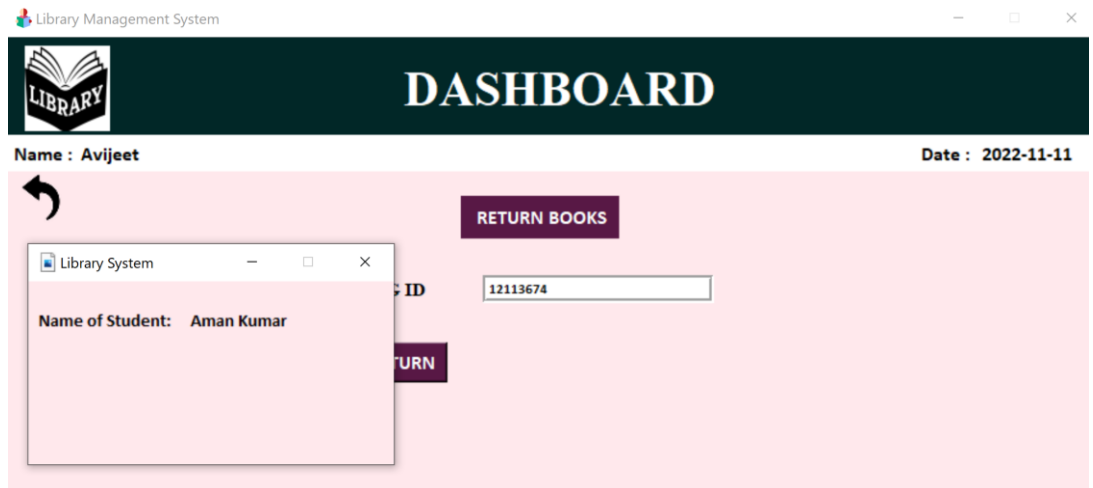
4. RETURN BOOKS

- After clicking Return Books;



The screenshot shows the 'Library Management System' window with a dark green header containing a 'LIBRARY' logo and the word 'DASHBOARD'. Below the header, the user's name 'Avijeet' and the date '2022-11-11' are displayed. The main content area has a light pink background and features a 'RETURN BOOKS' button at the top. Below this button is a 'REG ID' label followed by an empty text input field. At the bottom of the form is a 'RETURN' button. A back arrow icon is located in the top left corner of the main content area.

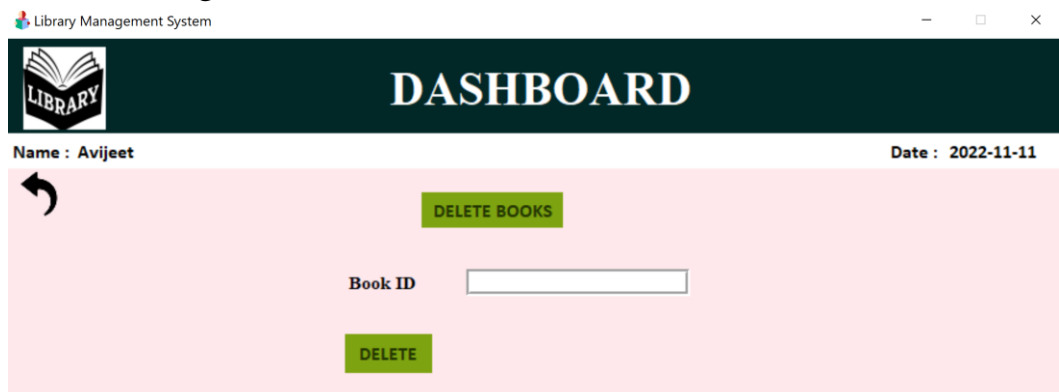
- After entering valid reg id, the book will be returned and the following screen will be shown



This screenshot shows the same 'RETURN BOOKS' form as before, but with the 'REG ID' field now containing the value '12113674'. A pop-up window titled 'Library System' is overlaid on the form, displaying the message 'Name of Student: Aman Kumar'. The 'RETURN BOOKS' and 'RETURN' buttons are still visible in the background.

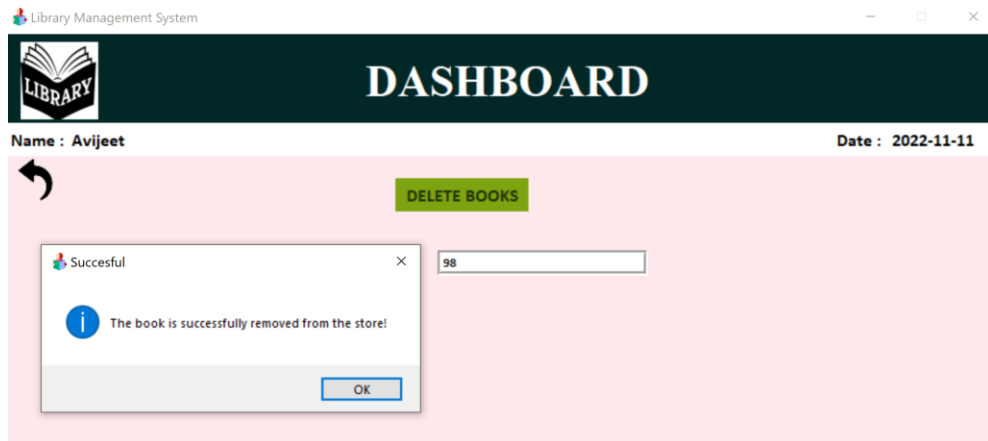
5. DELETE BOOKS

- After clicking on return books



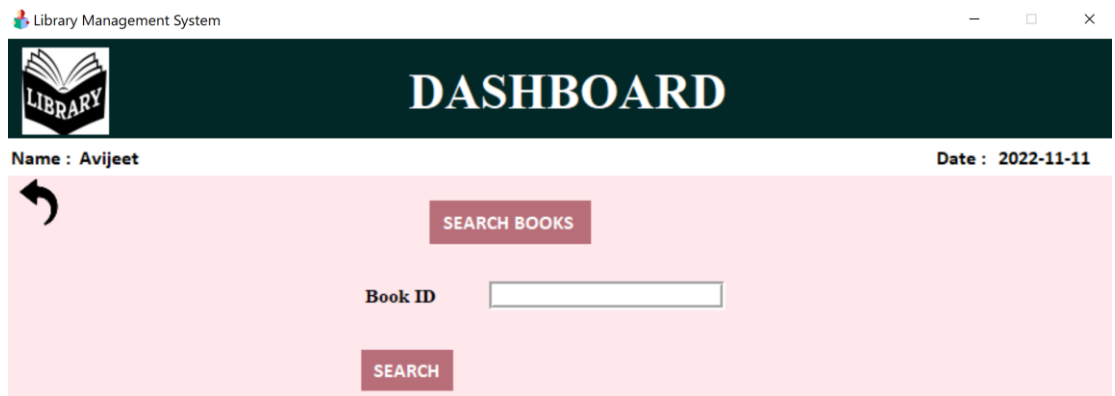
The screenshot shows the 'Library Management System' window with the same header and user information. The main content area now features a 'DELETE BOOKS' button at the top. Below this button is a 'Book ID' label followed by an empty text input field. At the bottom of the form is a 'DELETE' button. A back arrow icon is located in the top left corner of the main content area.

- After entering valid book id, the book's records shall be deleted and the following pop-up shown.

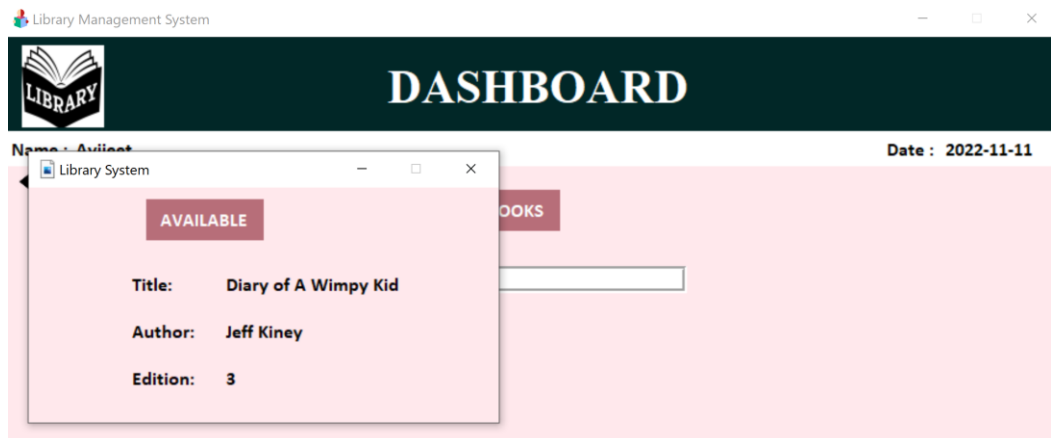


6. SEARCH BOOKS

- After clicking on search books




- After entering valid book id



7. SHOW BOOKS

- After clicking on show books, all the book in the database will be shown

Library Management System



DASHBOARD

Name : Avijeet Date : 2022-11-11

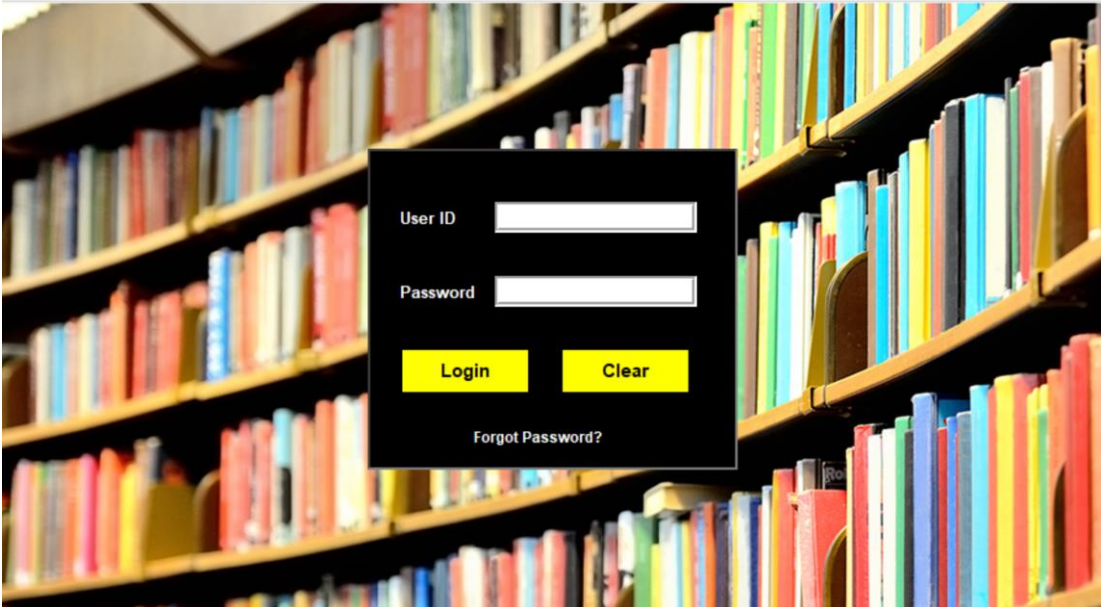
BOOKS INFORMATION

Book ID	Title	Author	Edition	Price
101	Diary of A Wimpy Kid	Jeff Kiney	3	400
1234	abcd	abc	1	2

8. LOG OUT

- After clicking on the log out button we will return to the login page

Library Management System



User ID

Password

Login Clear

[Forgot Password?](#)

TABLES USED

BOOKS:

	BookID	Title	Author	Edition	Price	Issue	ID
1	101	Diary of A Wimpy Kid	Jeff Kiney	3	400		
2	201	Harry Potter and the Sorcerer's Stone	JK Rowling	2	600	NULL	NULL
3	1234	abcd	abc	1	2		

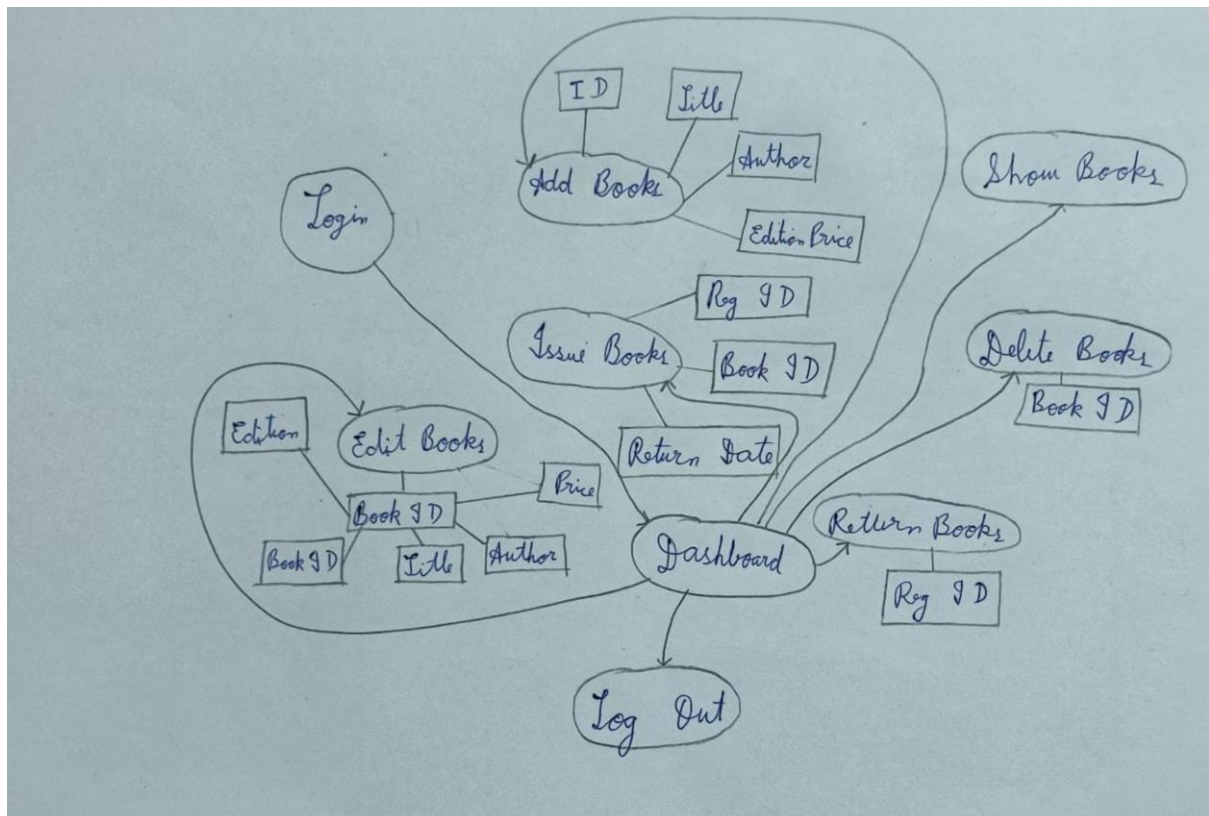
ADMINS:

	UserID	Password
1	admin	admin
2	test	test1
3	Avijeet	1234
4	Aman	aman@kumar

STUDENTS:

	REG	Name	Course	Year	RollNo	Email	ContactNo	FromDate	ToDate	SubmitDate	Charge	NoBook
1	1	abc	bcd	2000	123	abc@xyz.in	1234567890	2022-11-11	2022-03-31	2022-11-11	NULL	0
2	12111692	Avijeet Singh Bhati	BTech	2	30	avijeet@gmail.com	9874561230	NULL	NULL	NULL	NULL	0
3	12113674	Aman Kumar	BTech	2	11	amankumar@gmail.com	9876543210	2022-11-11	2022-03-31	2022-11-11	NULL	0

DATA FLOW DIAGRAM/ FLOWCHART



CONCLUSION

- We feel that we were successfully able to create a software on Library management system and think that we meet your expectations.
- We tried to keep the software as easy to use as possible as not everybody is technologically very skilful and thus widened our users.
- We believe that this software is good enough to be used at any commercial or public library while keeping the door to updates open.
- This project helped us understand the concepts of Python and how to use GUI with it.
- We learned how to use databases in our applications too.
- We learned the power of Object Oriented Programming and how easy it is once one has the firm grasp on its basic concepts.

REFERENCES

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- <https://www.reddit.com/>
- <https://www.quora.com/>
- <https://www.edureka.co/>
- <https://www.tutorialspoint.com/>
- And various projects uploaded online