

DIGITAL LIBRARY MANAGEMENT SYSTEM

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Abstract: A system for managing digital libraries provides access to and oversees the resources within the digital library. The implementation of this Library Management System aims to enhance library efficiency and conserve valuable administrative time. The goals of this system include building and overseeing library collections, facilitating swift access to required materials, streamlining the search process for library resources, establishing digital library infrastructure, conducting information library instruction programs, expanding library outreach to students from various departments and individuals of all ages, and conducting a systematic review of reference services to adapt to changes in facilities and technology, ultimately improving the quality of service provided.

Keywords: Digital Library, Management system, Outreach

1. INTRODUCTION

The software designed for overseeing transactions in a library is a management Software. The paper, titled “Digital Library Management System,” is crafted in Python, with a primary emphasis on fundamental

library operations. These operations include adding new members, incorporating new books and updating their details, searching for books, locating members, and managing the processes of issuing and returning books. Developed specifically for Windows operating systems, the “Digital Library Management System” serves as an application to assist users in maintaining and organizing their library activities. The software ensures user-friendly interactions, featuring a familiar, well- conceived, and easy-to-navigate interface, coupled with robust search functionality.

The Digital Library Management System software comprises four primary modules:

1. Administrator Login Module: Allows access with administrative privileges.
2. Database Insertion Module: Facilitates the addition of Student, Book, and User information to the database.
3. Database Extraction Module: Enables the removal of User entries and the return of books from the database.

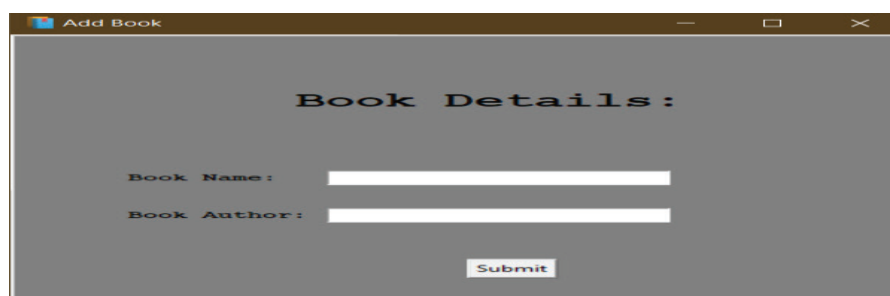
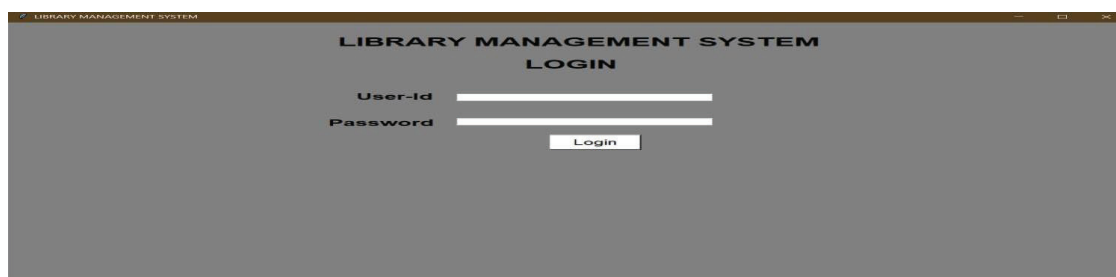
SEARCH FACILITY SYSTEM: SUPPORTS THE SEARCH FOR BOOKS AND MEMBERS.

Additionally, the system incorporates advanced features such as Jones Object Detection, SVM Classifications with HOG Features, and Deep Learning Object Detection. Detecting objects within video streams in video surveillance applications is a predominant task in contemporary scenarios. Various approaches, such as Json Object Detection, SVM Classifications with HOG Features, and Deep Learning Object Detection, contribute to this task. Object detection techniques are employed to recognize specific objects in video sequences and group pixels related to these objects. The identification of objects within

Video sequences hold significant importance in various applications, particularly in the realm of video surveillance. The process of object detection in a video stream involves stages such as pre-processing, segmentation, foreground and background extraction, as well as feature extraction. Unlike machines, humans effortlessly discern and identify objects in images. The human visual system exhibits swiftness and accuracy, capable of executing intricate tasks such as recognizing multiple objects with minimal conscious effort. Leveraging abundant data, enhanced GPUs, and refined algorithms, computers can now be trained to detect and classify multiple objects within an image with remarkable precision.

2. DESIGN AND IMPLEMENTATION

The “Digital Library Management System” Project is written in ‘Python’ programming language and ‘Mysql Database’ as backend. Python is very smooth to research the syntax emphasises readability and it can reduce time-ingesting in development. This Library Management System Project in Python uses ‘Tkinter’ for Graphical User Interface (GUI). At the start, I Installed Python 3.9.7 (64 bit) from the link. Then I installed Sublime Text 3 from the link and Git Bash 2.34.1 from the link. I used sublime text as a Code Editor because from here I can set my text as a python code from ‘View>Syntax>Python’. It helps me by adding colors to different sections of my code so that I do not make unintentional mistakes during my work. I used Git Bash as a Terminal so that I can add these codes to my GitHub repository later. But Due to some new security features and some other changes from the previous version, I was not able to add my codes to my GitHub account. After installing all the necessary software, I created a new folder named Project. After writing a code in the Sublime Text, I have saved it in this folder. And to run the code I had to first start the Git Bash, then I had to navigate to the directory where I had saved my python file using the ‘cd’ command, which stands for ‘Change Directory’. As my python file was in the ‘Project’ folder, which was in ‘E: Drive’, the command I used was “cd /e/paper”. After that, I could run my python code using “python filename.py”.



The image shows two overlapping windows from a library management system. The top window, titled 'Add Student', has a grey background and contains three text input fields labeled 'Name:', 'Phone Number:', and 'Address:'. Below these fields is a 'Submit' button. The bottom window, titled 'Add User', also has a grey background and features the title 'User Details' in a large, bold, monospace font. Below the title are three text input fields labeled 'Username:', 'Name:', and 'Password:'. A 'Submit' button is positioned at the bottom of this window.

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The 'Remove User' window has a grey background and a title bar. It contains a text input field labeled 'Enter User Id:'. Below the input field is a 'Remove' button.

The 'Library Adminisntration' window (note the typo in the title bar) has a grey background and a title bar. It displays the title 'Book Issuing' in a large, bold, monospace font. Below the title are two text input fields labeled 'Book ID:' and 'Student ID:'. A button labeled 'ISSUE' is located at the bottom of the window.

The 'Return' window has a grey background and a title bar. It contains a text input field labeled 'Enter Book ID'. Below the input field is a 'Return' button.

The image displays two screenshots of a web application interface. The top screenshot is titled "Search Library" and features a search form with a "Search By" dropdown menu, an "Enter" button, and a "Find" button. Below the form is a table with columns: Book ID, Book Name, Book Author, and Availability. The bottom screenshot is titled "Search Student" and features a similar search form with a "Search By" dropdown menu, an "Enter" button, and a "Find" button. Below the form is a table with columns: Student ID, Student Name, Phone Number, and Address.

3. RESULT AND ANALYSIS

We faced numerous problems during this paper due to our lack of knowledge. At first, when we tried to run the first module, Login_Page.py, we got a 'mysql-connector' error. This issue was resolved through the installation of MySQL and the MySQL-Connector package. I installed them from my inbuilt Terminal (Command Prompt) using "pip install mysql" and "pip install mysql-connector- python" commands. Later when we created all the modules we did not face any issue that we could not solve by going through the internet. But there is the final module, which is Main_Page.py, which is still giving us a problem, and we could not find the solution anywhere on the internet. We also could not find any issue with the code. Whenever we run the code, it takes some time to load the Main Page, and then it gives an error from the last try-except error box. Due to this problem, and some other MySQL connectivity problems we couldn't complete this paper. Although we have completed all of the basic modules, as shown in the screenshots, this paper is still incomplete.

4. CONCLUSION

The "Digital Library Management System" process was made computerized to reduce human errors and to increase efficiency. The main focus of this paper is to digitize the Library Management System. With

this software, the maintenance of the records are made easy, as all the records are stored in the database, from where the data can be retrieved anytime. When dealing with a considerable number of records, users can simply enter their search criteria into the designated box, and the results are promptly displayed. Editing is streamlined as well; users need only input the necessary information into the respective field and press the update button to effect changes. Each book and student are assigned a unique ID number, ensuring accurate and error-free access. The primary objective of the current paper is to retrieve accurate information about specific students and the books present in the library.

5. FUTURE SCOPE

The envisioned system furnishes relevant information concerning students and the System Administrator. The System Administrator, serving as the backend user, is established to manage the system. To access the facility, the System Administrator must log in by inputting the correct username and password. The System Administrator is empowered to perform various actions, including adding, editing, deleting, and viewing categories, authors, books, books issued, and members. Additionally, the System Administrator can search for issued books using an ID. Furthermore, the System Administrator has the option to either close the software or log out temporarily, disconnecting from the system, and can re-enter by providing the username and password. Students can get Book Recommendations depending on the books he/she has read previously.

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