"PYTHON LAB PROJECT ON LIBRARY MANAGEMENT SYSTEM"

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PROBLEM STATEMENT :

System is to be developed for automating a public library. The system should be standalone in nature. It should be designed with a focus on security and should have a break through user interface to make it easy for the people working on it.

The following basic functionalities are required:

1.Issue Book:

A member should be able to issue books.

Members book limits can be set according to membars positions in system

The software takes the current system date as the date of issue and

Calculate the date of return

2. Return of books:

Any person can return the issued books (if they have the member/id)

The system displays the member's details which want to return book

With the date of issue and return of the book.

The information is saved and the corresponding updating takes place in files

3. Query Processing:

Real time searching

Membar and Admin can be search book by either book title,isbn number or author name

LIBRARY MANAGEMENT SYSTEM

INTRODUCTION

The project named Library Management System is Library Management software for controlling transaction in a library .The project **"Library Management System**" is developed in python,which mainly do some basic operations in a library like adding new member, new book, and updating new information ,searching books and members and facility to issue and return books.

The software Library Management System has four main modules.

- Insertion to File
- Extracting information from file
- Report Generation Module – Issued book list & Available Book list
- Facility System – search for books and members

SYSTEM ANALYSIS:

Existing Systems :

In our existing system all the operations of books are done manually, so taking more for a operation like issue a book or returning a book and also for searching members and books , so it is the disadvantage of our existing library system ,taking more time and human effort

So after these study we decide to convert these manual Library Management system to be computerized

Proposed System :

Proposed system is an automated Library Management System. Though our system can add members , add books, search members ,search books, edit & update information ,issue and return book in quick time.

SYSTEM REQUIRMENTS:

1.purpose:

The purpose of this document is to familiarize reader with system, which is developed by Ganesh suryvanshi. Specification describes all hardware and software requirements for product, behavior of it and its components. Software Requirements Specification (SRS) allows to verify the customer that all his requirements are observed and implemented correctly by developer.

2.Scope:

Library Management System will allow to perform all necessary precedures for admin(librarian) and patrons(students and faulties).According to the requirments the system to be developed consist of two databases(here instead of database file handling):

- ✓ Book's database
- ✓ Patron's database(students & faculties)

Library Management System will also provide all necessary services for files such as creating , deleting, updating and searching information. Members(students and faculties) will be acess to the system when they registered in the system

3. The Users of the System:

Potential Users of the College LMS are librarians and patrons.

Librarian

User name	Admin
User role	To maintain College LMS (add, delete, renew items and update databases)

Patrons

User name	Student or Faculty(Enrollment Number or Employee id)
User role	To use the College LMS in practice (see user details, request book, search book)

4.Functional Requirements

R.1 Add student

Description: - Add student details function add details of the students to make them library members.

Pre-Condition:-Admin must be a part of the system.

Input:-

- Name
- Year
- Branch
- Admission id

Output:-

- Message ” Student record added successfully
- Display the Student Enrollment Number

R2. Display Student Record

Description: - Display student record from student.dat fil**e**

Pre-Condition:- Admin must be a part of system.

Input:- Student enrollment number provided by system

Output:-

- Name
- Enrollment Number
- Branch
- Book Details (if issued) with date issue and return

R3. Display All Student Records

Description: - Display all student record from student.dat fil**e**

Pre-Condition:- Admin must be a part of system.

Input:- Nothing

Output:-

- Name
- Enrollment Number
- Branch
- Number of Book Issued

R4. Remove Student Record

Description:- Remove student record from student.dat file

Pre-Condition:- Admin must be a part of system.

Input:-

- Enrollment Number

Output:-

- Message will be displayed “Student record successfully removed”.
- Display Appropriate Message If “Student not registered”.

R5. Add Faculty

Description: - Add Faculty details function add details of the students to make them library members.

Pre-Condition:-Admin must be a part of the system.

Input:-

- Name
- Employee id

Output:-

- Message ” Faculty record added successfully”

R6. Display Faculty Record

Description: - Display student record from faculty.dat fil**e**

Pre-Condition:- Admin must be a part of system.

Input:- Employee Id

Output:-

- Name
- Employee Id
- Book Details (if issued) with number of copies.

R7. Display All Faculty Records

Description: - Display all student record from faculty.dat fil**e**

Pre-Condition:- Admin must be a part of system.

Input:- Nothing

Output:-

- Name
- Enrollment Number
- Number of Book Issued

R8. Remove Faculty Record

Description:- Remove student record from student.dat file

Pre-Condition:- Admin must be a part of system.

Input:-

- Enrollment Number

Output:-

- Message will be displayed “Faculty record successfully removed”.
- Display Appropriate Message If “Employee not registered”.

R9. Add Book

Description: - This function adds book record to book.dat file

Pre-Condition:-Admin must be a part of the system.

Input:-

- Book Title
- Book ISBN number
- Book Author
- Number of copies

Output:-

Message “Book record successfully added”

R10. Display Book Record

Description : This function displays book record in book.dat file

Input : Book’s ISBN number

Output :

- Book Title
- Book ISBN number

- Book Author
- Number of copies in library
- Available copies
- Book issued to student and Faculty with return date

R11. Display All Books Records

Description : This function displays books record in book.dat file

Input : Nothing

Output :

- Book Title
- Book ISBN number
- Book Author
- Number of copies in library
- Available copies

R12. Remove Book Record

Description : This function removes a book from book.dat file

Input:

- Book ISBN number

Output:

- Message "Book Record Successfully removed".
- Display Appropriate Message If "Book not registered".

R13. Issue Book

Description: - This function help in issuing book to a student or faculty and update the book in student or faculty record and remove copies from book record

Pre-Condition:-

- Student or faculty must be a part of the system.

- Book must be in book.dat file

Input:-

- Faculty Id or Student Id
- Book ISBN
- Days for book issue if admin are issuing book to student or faculty else system generate themself

Output:-

Message “Book Successfully Issued”

R14. Return Book

Description:- This function is called when user want to return the book. It removes issued record from users record and update this book in book record.

Pre Condition:-

- Student must be the part of the system
- Admin must be the part of the system
- Book must be issued to the user want to return

Input:-

- Enrollment number or Faculty Id
- Book ISBN number

Output:-

- Check if book over the return date then system must calculate fine
- If there is fine then display “Book returned “ is user pay fine
- Else display message ”Not Returned “

R15. Renew Book

Description:- This function is called to increase the return date of book issued to the user. Update the return date in user record and in book record as well.

Pre-condition:-

- Student must be the part of the system
- Admin must be the part of the system
- Book must be issue to the user

Input:-

- Enrollment number or Faculty Id
- Book ISBN number
- Number of Days to increase(If Admin Mode)
- Else default days will be add which is set to the system

Output:

- "Book Reissued successful " message will be display.

R16. Search Book

Description:- This function is called to search the book issued . It gives all the books related to there ISBN number , author name or title as the user search.

Pre-condition:-

- Student must be the part of the system
- Faculty must be the part of the system

Input:-

- Book Title or
- Book ISBN number or

- Book's Author name

Output:

- Related books will be listed along with there ISBN number and availability in library

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R17. Update User Details:

Description:- This function is called to update the user details. and system update user details in there corresponding records.

Pre-condition:-

- Admin must be the part of the system
- User must be part of the system which details have to update
- User doesn't having any book issued

Input:-

- Enrollment number or Faculty Id
- User NEW details

Output:-

- "Update successfully" message will be display

R18. Update Book:

Description:- This function is called to update the Book details. and system update Book details in there corresponding book record file.

Pre-condition:-

- Admin must be the part of the system
- Book must be in library
- Book not issued to the any User of library

Input:-

- Book's ISBN number
- Take all essential New Details of book

Output:-

- "Update successfully" message will be display

R19. Change Password:

Description:- This function is called to Change the Book password of any user of the system. and system will be stored user's new password in there related files.

Pre-condition:-

- User must be the part of the system

Input:-

- Current password
- New password

Output:-

- Display the message **"** New password has been set"

SYSTEM DESIGN:

Use case diagram for Library Management System :

DATA FILES AND DEPENDENCIES

1. **Book.py –** A python file/module containing book class its attributes.
2. **Book.dat –** A DAT file containing book record details in binary format.
3. **Faculty.py –** A python file/module containing faculty class its attributes.
4. **Faculty.dat –** A DAT file containing faculty record details in binary format.
5. **Student,py–** A python file/module containing student class and its attributes
6. **Student.dat –** A DAT file containing faculty record details in binary format.
7. **Adpass.txt –** A text file/module containing admin current password
8. **Fuctions.py-** A python script which contains all functions of the system…
9. **Modes.py-** A python script which havings all modes of system which contains there corresponding menus

CONCLUSION:

- The project "LIBRARY MANAGEMENT SYSTEM" is for computerizing the working in a library.
- The system takes care of all the requirement of a library and it is capable to provide easy and effective storage of information related to books & users