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Library Management System Documentation

1. Introduction:

The Library Management System is a software application designed to manage the operations of a library effectively. It provides functionalities for both users and administrators to handle tasks such as borrowing books, returning books, adding and deleting members, adding and deleting books, and modifying member and book details.

2. Features:

User Operations:

Borrowing Books: Users can borrow books by providing book details like name, code, and number of copies required.

Returning Books: Users can return books by providing book details like name, code, and number of copies to be returned.

Displaying Available Books: Users can view the available books in the library.

Administrator Operations:

Adding Members: Administrators can add members to the library system by providing details such as name, SAP ID, and password.

Displaying Members: Administrators can view the details of all library members.

Deleting Members: Administrators can delete members from the library system by providing their name and SAP ID.

Modifying Member Details: Administrators can modify member details such as name and password.

Adding Books: Administrators can add books to the library system by providing details such as code, name, author, genre, and availability.

Modifying Book Details: Administrators can modify book details such as name, author, genre, and availability.

Deleting Books: Administrators can delete books from the library system by providing their code.

3. Implementation:

Programming Language: Python

Libraries Used: Pandas

Data Storage: CSV files (student_details.csv, book_details.csv, Borrow_Details.csv)

4. Functionality Overview:

The program uses CSV files to store data related to students, books, and borrowing details.

Users are required to log in using their SAP ID and password.

Users can perform operations like borrowing books, returning books, and viewing available books.

Administrators have additional functionalities like adding members, deleting members, modifying member details, adding books, deleting books, and modifying book details.

All operations are implemented using functions to ensure modularity and maintainability.

5. Future Improvements:

Implementation of graphical user interface (GUI) for better user interaction.

Integration with a database management system for efficient data handling.

Implementation of advanced search and filtering functionalities for books and members.

Addition of email notifications for overdue books and membership renewals.

Implementation of user roles and access control for enhanced security.

6. Conclusion:

The Library Management System provides an efficient way to manage library operations and improve user experience. With functionalities for both users and administrators, it offers a comprehensive solution for managing library resources effectively. Further enhancements and improvements can be made to extend its capabilities and meet the evolving needs of library management.