Project Title

Library Management System Using Python

Introduction

This project presents a desktop application built with Python and Tkinter for graphical user interaction. It is designed to assist in managing key tasks within a small library, such as cataloging books, enrolling users, lending and returning books, and calculating overdue fines. The system automates these manual procedures, making the librarian's job easier and more efficient through a user-friendly interface.

Methodology

- Developed using Python's built-in Tkinter library to design a straightforward graphical user interface featuring input fields and operation buttons.
- Utilizes Python dictionaries to hold library data (books and users) temporarily during execution, with each entry assigned a unique identifier.
- Core functionalities include:
    - Adding books with unique IDs, along with their titles and authors.
    - Registering new users with distinct user IDs and names.
    - Lending books to users with a due date set for 14 days, tracked using Python's datetime.
    - Processing book returns and calculating fines based on delayed days (10 ruppee per day).
    - Displaying comprehensive lists of books and registered users, complete with borrowing status and due dates.
- Incorporates basic validation checks and error messages to ensure smooth user input and system responsiveness.

Applications

- Ideal for managing small-scale libraries in educational institutions such as schools or colleges, where fundamental book lending procedures are needed.
- Empowers library staff to keep track of books and borrowers digitally, reducing reliance on paper-based records.
- The project serves as a foundation that can be expanded with database systems, reporting tools, and more sophisticated interfaces like web or mobile applications.
- Provides hands-on experience in GUI programming, data handling, and event-driven application development for learners and beginners.

GitHub Link: https://github.com/KaavyaRao09/Library-Management-System