README.md

MINI LIBRARY MANAGEMENT SYSTEM



The **Mini Library Management System** is a simple Python-based project designed to manage books and members in a small library. It demonstrates CRUD operations (Create, Read, Update, Delete) and borrowing/returning functionalities using Python data structures — dictionaries, lists, and tuples.

Features

- Add, search, update, and delete books
- Add, update, and delete members
- Borrow and return books
- List all available books and active members
- Validations for duplicates and borrowing limits

Data Structures Used

- **Dictionary (dict)**: Used to store books with their ISBN as unique keys for fast lookup and updates.
- **List (list)**: Used to store multiple members and their borrowed books.
- **Tuple (tuple)**: Used to define fixed genres of books since they don't change often.

Project Files

- operations.py → Contains all the library management functions (core logic)
- demo.py → Demonstrates how each function works step-by-step
- README.md → Project overview and setup instructions

How It Works

1. Add a Book

add_book(isbn, title, author, genre, total_copies)

Stores a new book in the library collection.

2. Add a Member

add_member(member_id, name, email)

Registers a new library member.

3. Search for a Book

search_books(keyword)

Returns matching books based on title or author.

4. Borrow & Return

borrow_book(member_id, isbn)
return_book(member_id, isbn)

Allows members to borrow or return books with validation.

5. Update or Delete

update_book(isbn, title=None, author=None, genre=None, total_copies=None)
delete_book(isbn)

Modify book details or remove a book entirely.

► How to Run

- 1. Ensure Python 3 is installed.
- 2. Place all files (operations.py, demo.py, README.md) in the same folder.
- 3. Run the demo file:

python demo.py

Example Output

LIBRARY SYSTEM DEMO

Book added successfully

Member added successfully

Book found: Python Basics

Book borrowed successfully

Book returned successfully

Book deleted successfully

DEMO COMPLETE



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