Library Management System

# Overview

This project implements a simple Library Management System as a .NET MAUI desktop application. It allows staff to manage library members, catalog books, and record borrowing and return transactions. The interface is designed for clarity and ease of use, following a modern card-based layout.

# Key Features

* Tabbed navigation for switching between Members, Books, and Transactions.
* Sidebar panels for searching, filtering, and adding new records.
* Main content area displaying item lists and detail forms.
* Input validation for email addresses, phone numbers, and date ordering.
* Robust error handling with user-friendly alerts.
* Persistent storage using SQLite for all data.

# Architecture

The application follows the MVVM (Model-View-ViewModel) pattern:

* Models define the data structures (Member, Book, Transaction).
* Views (XAML pages) handle layout and user interaction.
* Services implement interfaces (IMemberService, IBookService, ITransactionService) to manage data operations through AppDbContext.
* ValidationHelper provides reusable input checks.

# Project Structure

* Views – XAML pages and their code-behind.
* Models – Domain classes representing entities.
* Services – Data access services implementing business logic.
* DataAccess – SQLite context and initialization.
* Utils – Utility classes (validation, helpers).

# Getting Started

1. Open the solution (`LibraryManagementSystem.sln`) in Visual Studio 2022 or later with the .NET MAUI workload.
2. Restore NuGet packages when prompted.
3. Select the Windows target and build the solution.
4. Run the application and explore each tab.

# Usage Guide

* Members Tab: Add new members, search by name, and view or edit member details.
* Books Tab: Catalog books, filter by genre, and update availability.
* Transactions Tab: Issue or return books, and review borrowing history.