

Library Management System

Built with MVC – ASP.NET CORE

Objective:

To develop a library management system that tracks book checkouts, returns, and calculates penalties for overdue books.

Project Description:

The Library Management System is a comprehensive solution for managing the books, users, and transactions within a library. It will enable librarians to handle tasks such as book checkouts, returns, and penalty calculations for overdue items. The system will also include a search function to help librarians find books by various filters like title, author, or genre. Additionally, it provides member management, allowing members to view their borrowing history and track their due dates and penalties. The application will be developed using ASP.NET Core with MVC architecture and Entity Framework for database management. The frontend will be built with HTML, CSS, and JavaScript, ensuring an intuitive and responsive user experience. SQL Server will serve as the database for managing library data.

Technologies Used:

- ASP.NET Core for backend development and API handling
- MVC (Model-View-Controller) for application architecture
- Entity Framework for database management and ORM (Object-Relational Mapping)
- User Authentication for managing librarian and member access
- SQL Server for storing books, users, and transaction data
- HTML, CSS, JavaScript for frontend development

Collaborators:

1. **Team Lead:** Maxim Mamdouh Salib – Oversees the project, manages the timeline, and ensures communication across layers.
2. **Frontend Developer:** Enjy Boushra Tawfik – Develops and refines the user interface.
3. **Backend Developer:** Mohamed Mohsen Mohamed – Implements API endpoints and core logic.
4. **Database Developer:** Khaled Elashry Ahmed – Designs the database schema and manages data migrations.
5. **Business Logic Developer:** Shehab El-Din Ashraf Hussein – Manages the service layer and core business logic.