CloudSync - Low-Level Design One-Pager

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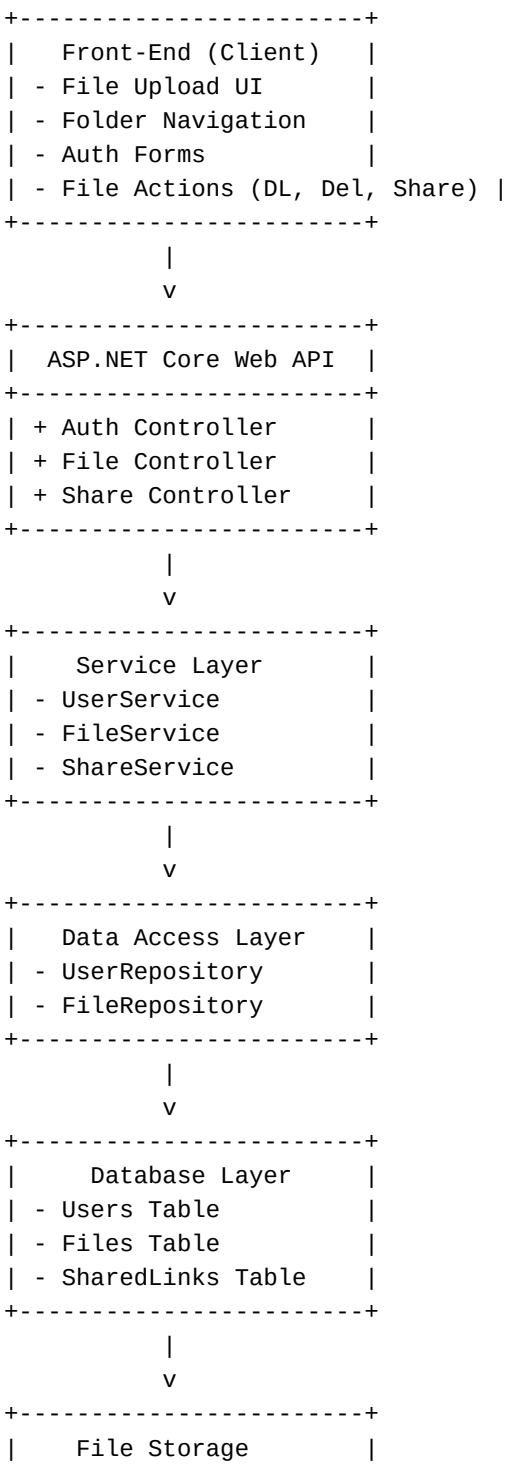
Overview

CloudSync is a secure personal cloud storage system where users can upload, organize, and manage files from any device. Built with a focus on accessibility, modularity, and scalability, the application uses a RESTful Web API built in ASP.NET Core.

Low-Level Design Diagram (Module Breakdown)



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| - Local / Cloud (e.g., AWS S3 in future) |
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Modules & Responsibilities

- Authentication: Register/Login, Session Token Management

- File Management: Upload, Download, Delete, Move, Organize

- Sharing: Generate and validate public/private links

- Storage Manager: Track usage, file size limits

- Optional: Versioning: Track file changes and allow rollback

Design Patterns Used

- MVC (Model-View-Controller): For clean separation of concerns in ASP.NET Core.

- Repository Pattern: Abstracts data access logic from business logic.

- Singleton Pattern (Optional): For managing configuration or service access (e.g., StorageHandler).

- DTO Pattern: Data Transfer Objects for passing structured data between layers securely.

Tech Stack

- Back-End: ASP.NET Core Web API

- Front-End: HTML/CSS/JavaScript (Framework TBD)

- Database: SQL Server or SQLite (Development)

- File Storage: Local disk (upgradable to Cloud e.g., AWS S3)