High level overview on the Technology Stack used and features of DESOC Dues Management System (DDMS)

1. Introduction

The **DESOC Dues Management System (DDMS)** is a web-based platform developed to streamline the management of student dues and souvenirs for the Design Society.
The system is designed to be **secure, scalable, and user-friendly**, ensuring that administrators and members can easily handle dues, payments, reports, and souvenir distributions.

2. Technology Stack

Backend

- **Framework**: Laravel 12

    o Provides robust MVC architecture.

    o Built-in authentication, middleware, and routing.

    o Eloquent ORM for seamless database interaction.

- **Language**: **PHP 8.2+**

    o Strong support for modern OOP features.

    o Secure and widely adopted in web development.

- **Database**: **MySQL**

    o Stores students, dues, payments, souvenirs, users, and report records.

    o Optimized with migrations, relationships, and seeders.

- **Libraries & Packages**:

    o **Barryvdh/DomPDF** → Used for reports to PDF generation.

Frontend (User Interface – UI)

- **Blade Templates (Laravel)**

    o Dynamic rendering of backend data.

    o Clear separation of layout and content with sections.

    o Responsive, modern design system.

Authentication & Security

- **Laravel Auth** → Handles login, lock/unlock, and logout.

- **CSRF Protection** → Laravel's built-in CSRF tokens for forms.

- **Validation** → Server-side validation of all form inputs.

3. Core Features

- **User Management**

    - CRUD operations for students and admin users.

    - Profile management (avatar, bio, password updates).

    - Role assignment (student, admin, superadmin).

- **Dues Setup & Management**

    - Create dues for a specific **academic year and level**.

    - Attach amounts payable.

    - Manage status of dues (active/inactive).

- **Dues Payments**

    - Record payments with:

        o Student, academic year, level.

        o Date paid and amount paid.

        o Souvenirs collected (dynamic selection).

- Payment status (pending, confirmed, cancelled).
- Smart features:
  - Filters students by academic year + level.
  - Dynamically loads available souvenirs.
  - PDF export of dues payments.

◆ Souvenir Management

- Create souvenirs for academic years and levels.
- Track availability (status).
- Link souvenirs to payments upon collection.
- Export souvenirs list to PDF.

◆ Reports

- Generate dues reports by academic year and level.
- Export reports to **PDF**.
- Provides insight into total payments, pending payments, and dues balance.

◆ Dashboard

- Hero section with branding and quick actions.
- Quick links to **Add Student** and **Record Payment**.
- Overview of the system's purpose.

◆ Authentication & Lock Screen

- Login with index number + password.
- Lock screen feature for security when idle.
- Background gradient overlay for professional look.

4. Benefits

- ✅ **Efficiency** → Eliminates manual tracking of dues and souvenirs.

- ✅ **Accuracy** → Reduces errors with automated records and validations.

- ✅ **Security** → Secure login and lock screen with role-based access.

- ✅ **Reports & Transparency** → Easy report generation for accountability.

- ✅ **Scalability** → Can be extended for other societies or organizations.