

StudentManager Design Document

Objective : Build a complete system for managing student data and launch it as a SaaS product.

Target Audience : The target audience are individual tutors, coaching academies(any).

Functional Requirements

Authentication : Authentication is required for logging in admin, students and tutors.

Grade and fee card export : A functionality for admin to export grade and fee card of a student in pdf or svg format

User Interaction : A functionality for users, tutors and admins to interact with the system.

Mass Emailing : A functionality for sending bulk emails in a single click.

Non-Functional Requirements

Availability : As the system will be used world wide, the system needs to be online 24*7*365.

Performance : The entire system needs to be performant enough to handle a load of 1000 users at a single time.

Security : The system will collect user data and involve monetary affairs so security becomes the top priority.

Frameworks/ Tech Stack

- Frontend
 - Nextjs
 - Tailwind CSS
 - Tailwind utilities
- Backend
 - ExpressJS
 - Nodejs
 - Mongoose
 - Mongodb(database)

Deployment

- **Frontend**
 - Frontend is deployed using free deployment service provided by vercel with no extra configurations
- **Backend**
 - Backend will be deployed on AWS and will use apache web server for handling the incoming traffic. The deployment will use https for security.

System Design

Database Schema

Present in the dd.png file.

Authentication

User authentication using jwt.

Testing

Implement unit testing for critical functionalities.

Scalability

Implement the system so that it scales as the no. of users increases