

School Management App

Challenge: Develop a web-based school management application using the MERN stack (MongoDB, Express.js, React.js, Node.js) + tailwind css to manage classes, teachers, and students in a school and provide analytics.

We require a high standard of professionalism in both code quality and user experience (UX). It's crucial that developers prioritize the user experience (UX-first approach) when designing and developing a web-based school management application.

Proposed Solution: Design and develop a user-friendly school management application with the following functionalities:

- Data Management:
 - Three core models:
 - i. Class: Store details like class name, year, teacher, student fees, and student list.
 - ii. Teacher: Teacher information including name, gender, D.O.B., contact details, salary, assigned class etc.
 - iii. Student: Student information including name, gender, D.O.B., contact details, fees paid, and class etc.
- Features:
 - Add CRUD operations for all the above models.
 - Develop reusable React components for forms and tables.
 - Forms should dynamically render input fields based on the selected model (Class, Teacher, Student).
 - Add a limit to the number of students in each class.
 - Create various analytics pages:
 - i. Clicking on a class in class management page should open a class analytics page, this page should show all details of the class like name, year, teachers, students list etc. Also add a graph showing the number of male and female students in that class.
 - ii. Create an analytics page showing the expenses spent on teachers salaries and income generated from paid students fees.
 - In this analytics page add a toggle to switch between monthly/yearly views.
 - Add options to select the month and year for monthly view, year for yearly view.
- Bonus:
 - Create pagination for tables and handle pagination logic in the backend.

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- Add filtering and sorting logic for all models.
- Add form validation.