**Attendance Tracking System**

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### **Objective :**

We need to build a system that can support different features for tracking student attendance in an educational institution. Our end users will be **teachers** who need an efficient and accurate way to mark, track, and manage attendance records.

This document covers both the **backend** and **frontend** aspects of the system. The frontend will be built using **React.js**, while the backend will ensure data consistency and security with a maintainable and scalable codebase.

### **Requirements :**

#### **Attendance Marking & Tracking :**

* Only teachers can mark student attendance. Students cannot mark their own attendance.
* Teachers should be able to **view and edit attendance** records for their assigned classes.

**Modern Dashboard :**

* Displays No. of Students, Total Present and Total Absent Percentage.
* Includes **Calenda**r to select Specific Date, Month and Year.
* Includes **Bar Chart** to display Total Present vs Total absent for specific date and class.
* Includes **Pie Chart** for Monthly attendance analysis.
* Includes **CRUD** (Create, read, update and delete) functionality for handling Student details.

#### **Reporting & Analytics :**

* **DateWise** and **Monthly** Attendance Tracking..
* Integration of Bar and Pie Chart.
* Option to **Add** Student and **Delete** and **Manage** student record.

#### **Authentication & Access Control :**

* Implement Social and Email Password authentication.
* Uses **NextAuth.js v5** for Authentication handling.

### **Tech Stacks Requirement :**

* **Frontend** : Next.js, React, Tailwind CSS, HTML
* **Backend** : Node, Express, Rest APIs
* **Databases** : MySQL, Drizzle (ORM)
* **Languages** : JavaScript, SQL

### **Attendance Service :**

* **Mark Attendance** (Teachers only)
* **Update Attendance Records** (Teachers)
* **View Attendance History**
* **Generate Attendance Reports**
* **Authentication**