Major project Synopsis

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MyCCET

Purpose:

MyCCET is an internal management tool designed to digitize and streamline offline student records, focusing on essential tasks such as maintaining marks, certificates, and other academic data. Exclusively for staff use, it enables efficient academic administration without direct student access. The platform is tailored for Teachers, HODs, and management staff to enhance academic workflows.

Features:

1. **Manage Students:**
   This feature allows the administration to efficiently manage all student data. It includes storing and updating personal details, academic records, attendance, marks, and other relevant information. The system ensures accurate tracking of student progress and provides easy access to important records for staff, facilitating smooth academic and administrative processes.
2. **Create and Manage Academic Entities**:
   - **Subjects**: HODs create subjects and assign teachers for better academic coordination.
   - **Semesters and Branches**: Admins configure academic schedules and branches, ensuring alignment with the institution's calendar.
3. **Generate Provisional Certificates**: Automates the creation of provisional certificates for students awaiting formal transcripts, minimizing manual errors and improving efficiency.
4. **Marks Management**: Teachers can input marks directly into the portal, ensuring real-time updates of student performance and enhancing transparency.
5. **Student Reports**: Generates detailed academic progress reports in PDF or CSV formats to track performance and support administrative decisions.

Future Scope:

- **Student Information Automation**: Automation reduces manual data entry by extracting student info from allotment letters.
- **Student Portal:**This feature allows students to track their academic progress, view faculty details, timetables, leave applications, and fee payment links, with more features planned for a streamlined self-service experience.
- **Fee Management (Future Feature)**: A planned feature to enable students to pay fees through the platform, with HODs and tutors tracking payment statuses.

Roles:

User roles and access levels are crucial for smooth operation and secure data management. Each role has specific responsibilities:

- **Students**: Basic information is stored for administrative use; students have limited access to their data.
- **Teachers**: Responsible for entering internal and external marks for their subjects, with no access to other students' data.
- **Tutors in Charge**: Manage student records at the semester level, ensuring data accuracy for academic progress.
- **HODs**: Oversee department-specific student data, create subjects, assign teachers, and monitor academic performance.
- **Management**: Administrative staff who need access to student data across departments for oversight.
- **Admins**: Responsible for system management, configuration, updates, and user support.

These role-based access levels ensure secure and efficient handling of sensitive data.

Database:

The MyCCET system uses a relational database structured into three main sections for flexibility and efficiency:

- **Core Tables**: Admin, Teacher, Student, Branch, and Semester tables for essential data storage.
- **Academic Data Tables**: Subject, Subject Assignments, Marks, and Student academic tracking.**Auxiliary Tables**: Provisional Certificates and Quota/Caste tables for managing additional student data.

Tech Stack:

- **Frontend: React with TypeScript & Next.js**:
    - **React**: A JavaScript library for building dynamic, component-based UIs.
    - **TypeScript**: A superset of JavaScript adding static typing for improved code reliability.
    - **Next.js**: A React framework with features like SSR, SSG, and SEO optimization.
- **Backend: Node.js**: A JavaScript runtime for scalable, event-driven server-side applications.
- **Database: PostgreSQL**: A powerful relational database that supports advanced querying and ensures data integrity.

This tech stack provides a high-performance, scalable application with efficient development and maintenance.

Workflow Highlights:

- **Admins**: Configure semesters, branches, and maintain the platform.
- **HODs**: Manage department-specific student data and assign teachers to subjects.
- **Teachers**: Input and manage student marks.
- **Tutors**: Oversee students' academic progress for specific semesters.
- **Management Staff**: Review and access comprehensive academic data.

Potential Impact:

By automating processes like provisional certificates and marks management, MyCCET offers:

- **Enhanced Efficiency**: Reduces administrative overhead by automating time-consuming tasks.
- **Minimized Errors**: Automation significantly reduces human error, ensuring accurate data.
- **Centralized Academic Management**: Streamlines academic data management, providing an intuitive interface for staff to monitor student performance.
- **Streamlined Staff Workflows**: By automating routine tasks, staff can focus on strategic responsibilities, improving overall productivity.

These benefits ensure a smoother, more efficient academic management system that positively impacts both administrative staff and students.

GitHub Repository:
Frontend:-https://github.com/aayushchugh/myccet-client
Backend:- https://github.com/aayushchugh/myccet-server