

NECN Student Mentoring System

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Abstract: This paper presents a web-based student mentoring platform designed to streamline scheduling, track academic progress, and enhance communication between students and mentors. By automating essential processes and providing real-time alerts, the system improves efficiency and ensures a well-structured mentoring approach.

Traditional mentoring systems often suffer from inefficiencies, including scheduling issues, inadequate documentation, and lack of structured feedback. The NECN Student Mentoring System, built using the MERN stack (MongoDB, Express.js, React, and Node.js), addresses these issues by automating session scheduling, notifications, feedback collection, and academic tracking. The system integrates features such as a Parent Module, Student Marks Management, and Attendance Tracking to provide a holistic mentoring experience. Experimental outcomes demonstrate increased student participation and improved mentor-mentee interactions.

Keywords: Mentoring; Student Guidance; Performance Tracking; Scheduling; Feedback; Engagement; Attendance.

I. INTRODUCTION

Mentoring plays a crucial role in student development, providing academic and career guidance. However, conventional mentoring methods rely on manual tracking, making them inefficient and difficult to scale. Challenges such as scheduling conflicts, insufficient documentation, and delayed feedback can hinder effective mentoring.

To address these challenges, the NECN Student Mentoring System has been developed as a web-based platform to facilitate automated mentoring processes, track student progress, and improve mentor-mentee communication. Utilizing the MERN stack, the system enhances accessibility, improves efficiency, and provides a structured mentoring approach. Key features include automated scheduling, real-time notifications, and role-based access to ensure collaboration among mentors, students, and parents.

II. FUNCTIONAL OVERVIEW

At application launch, after authentication, the Student Mentoring System loads the user dashboard according to the user role (Admin, Mentor, Student, or Parent). The system may load for a few seconds to synchronize academic records, schedules, and performance analytics based on network connectivity and data volume.

A notice system provides users with updates on mentoring meetings, academic performance, and significant announcements. A mentor-student assignment module assigns students with appropriate mentors using pre-set standards such as area of expertise, availability, and student needs. The mentoring session management system provides mentors with an interface to set sessions, allow students to participate, and automatically track attendance. The system includes an interactive tracker of student progress where mentors can enter academic performance information, and students/parents can track real-time progress. Parents can view a special dashboard where they can track attendance, performance reports, and mentor feedback. There is a resource-sharing module where mentors can upload study materials, assignments, and notes accessible to students at any point in time. Students can also have automated reminders for their future mentoring sessions and assignments. The feedback mechanism enables students to comment and rate mentoring sessions to assist in enhancing the mentorship process. The system also features data analytics tools that provide insights into student progress and the effectiveness of mentoring. The system is cloud-based, providing smooth access across devices. A role-based security model secures sensitive information, permitting only authorized users to view certain features.

Things You Need:

To deploy the Student Mentoring System, the following components are needed:

- Database Management System (DBMS) to store student records, mentorship information, and academic reports.
- Web-based & Mobile-friendly Interface for convenient access.
- Role-based authentication system for secure access.
- Scheduling and reminder module to organize mentoring sessions.
- Performance analytics tools to monitor academic progress.
- Cloud or on-premise hosting for data storage and scalability.
- API integration with LMS (Learning Management Systems) for seamless data flow.

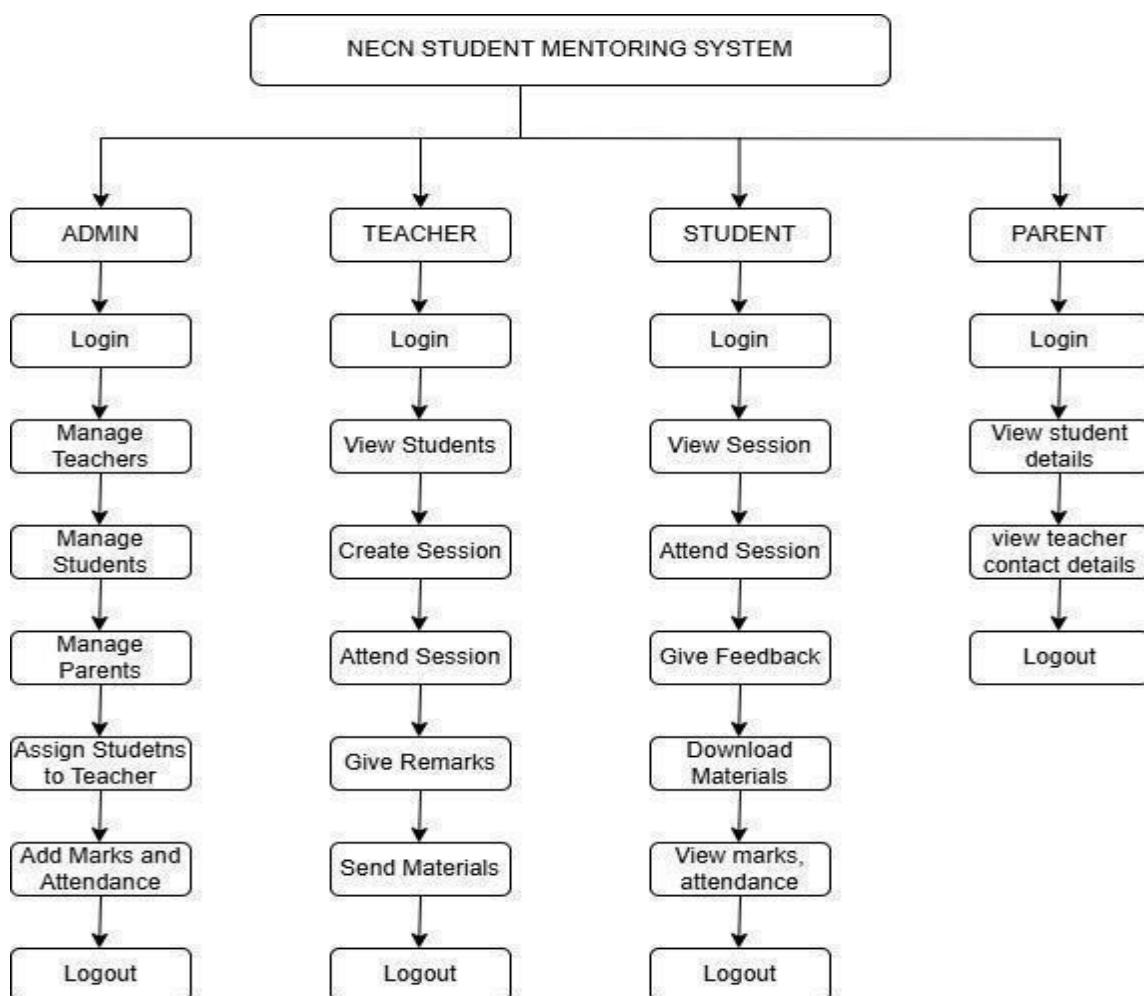
- Feedback and reporting tools for continuous improvement.

III. DESIGN

The system enhances student mentoring by automating session scheduling and sending timely notifications. It also implements a structured performance tracking system, enabling mentors to assess academic progress, attendance, and counseling history.

Key Benefits:

- **Automated Scheduling & Notifications:** Streamlines mentoring session planning and ensures timely reminders.
- **Enhanced Performance Tracking:** Systematic monitoring of student academic progress, attendance, and feedback.
- **Improved Communication:** A centralized platform ensures effective mentor-mentee interaction.
- **Parental Involvement:** Provides parents with access to attendance records and mentoring reports.
- **Secure & Scalable:** Built using the MERN stack, ensuring adaptability and security.



The system consists of four key modules:

1. **Admin Module:** Manages student and parent records, assigns mentors, and maintains attendance and academic data.
2. **Teacher Module:** Enables mentors to view student details, schedule mentoring sessions, provide feedback, and share study materials.
3. **Student Module:** Allows students to access scheduled sessions, submit feedback, and track academic performance.
4. **Parent Module:** Ensures transparency by providing parents with access to student performance and attendance records.

By integrating these features, the NECN Student Mentoring System optimizes mentor-mentee interactions, minimizing manual efforts and fostering a structured mentoring approach.

IV. WORKING

The login page of the NECN Student Mentoring System is the entrance to different user dashboards defined by their roles. The system ensures role-based authentication that permits only legitimate users to log in. It first requires the user to select a role from four options: Admin, Teacher, Student, or Parent. Moreover, it necessitates the entered email and password to verify them if the correct role is chosen. The system will allow access to the appropriate dashboard after verifying strictly provided credentials against the database. This organized login process enhances security while also offering access tailored to need and ease of use because it ensures every user interacts only with aspects pertinent to their role.



Fig 1: Login Screen

Administrators are able to maintain student and parent records successfully within the NECN Student Mentoring System via the Admin Dashboard. There is the feature to upload student records in bulk for the enrollment of multiple records simultaneously, as well as using the Add New feature to

enlist a new student through filling up information like name, email address, phone, teacher assigned to the student, roll number, and branch before saving the entries. In order that parents and instructors effectively communicate with each other, parent information also needs to be linked to the correct child.

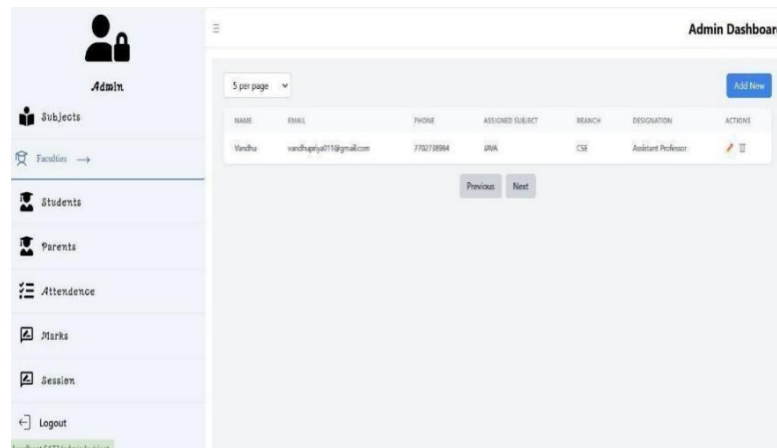


Fig 2: Admin add faculty

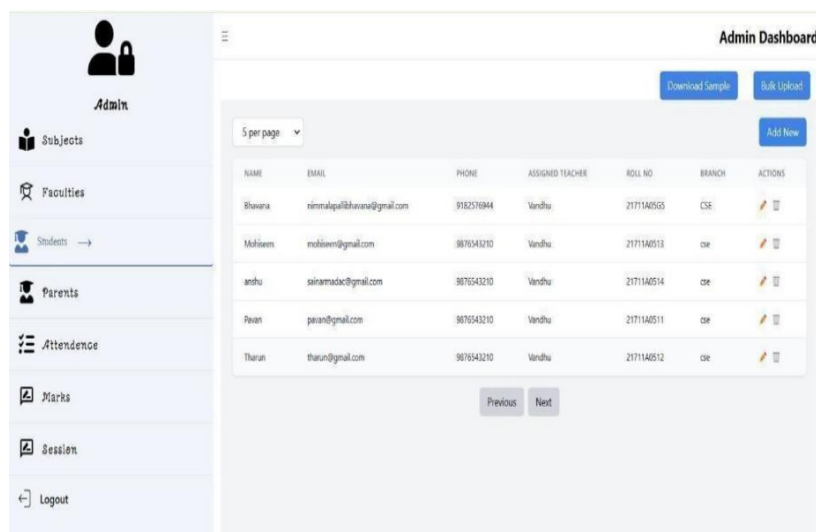


Fig 3: Admin after adding students

The system offers an effortless means for teachers and admins to track students' performance academically by enabling them to add and show marks effectively.

Adding Marks:

Admins can input student marks for various subjects, semesters, and tests via the Admin Dashboard. Mass uploading of marks is supported using a sample template, making it simple to enter data. Admins can also enter new records manually, modify current marks, and remove erroneous entries. Every record contains information like student name, roll number, branch, semester, subject, midterm marks, and assignment marks.

Displaying Marks:

Teachers can see and review students' marks using the Teacher Dashboard, which gives them a comprehensive insight into the performance of individual students. The marks are displayed in an organized tabular manner together with a graph, giving the teacher an overview of student development. Teachers have access to students' individual records, monitor academic performance trends, and offer requisite guidance based on the information on display.

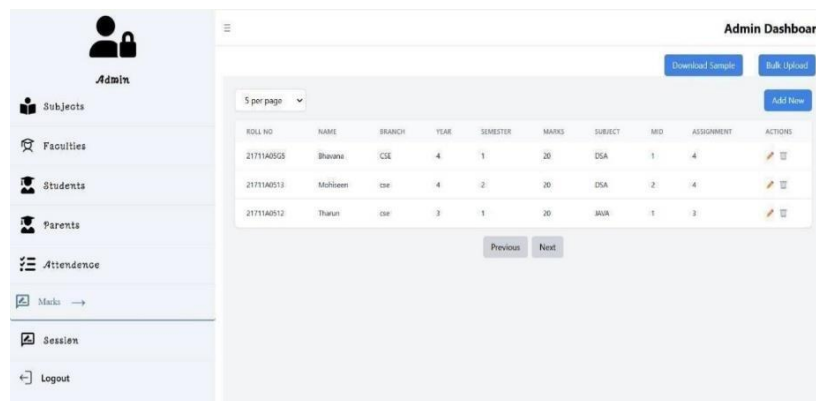


Fig 4: Admin adding marks

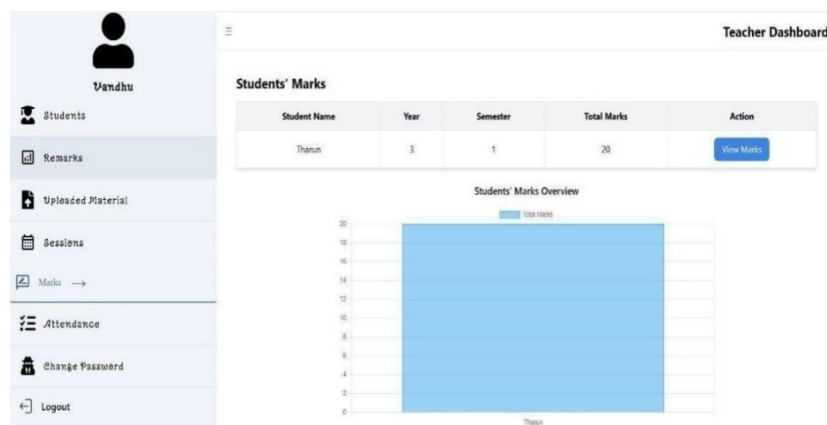
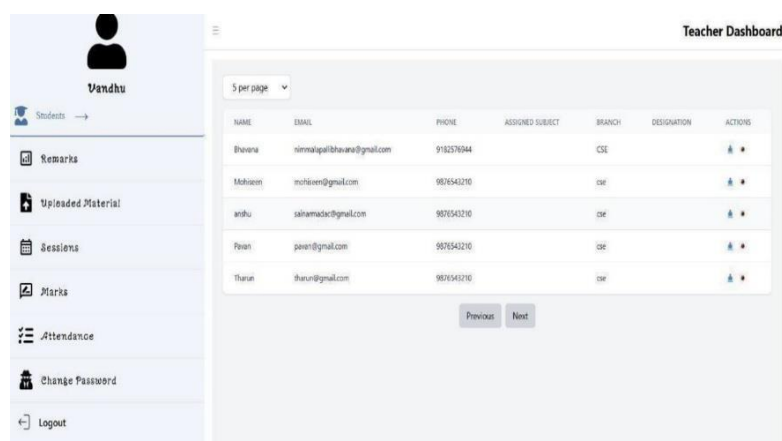


Fig 5: After adding marks

In the NECN Student Mentoring System, the student assignment feature allows administrators to assign students to particular teachers to ensure a systematic mentoring process. Administrators can choose a teacher and assign a group of students to them according to pre-defined criteria like department, subjects, or specialization using the Admin Dashboard. After assignment, teachers are able to see a specific list of their assigned students in the Teacher Dashboard, from where they can see student information, book mentoring sessions, offer feedback, and monitor progress. This formal assignment provides for more effective guidance of students, simplified communication, and individualized mentoring assistance.

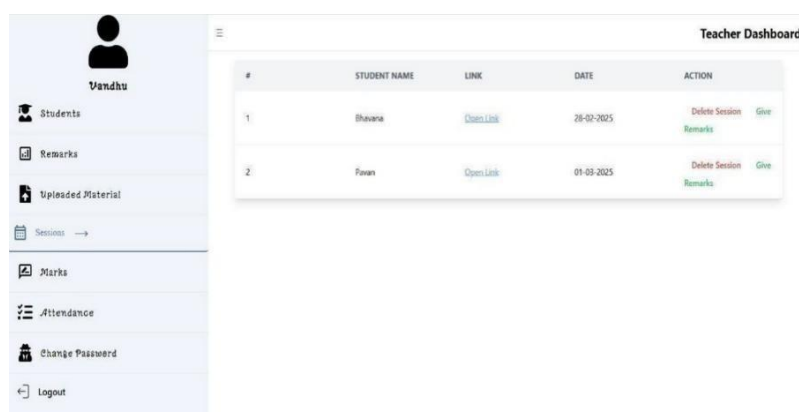


The screenshot shows a 'Teacher Dashboard' for a user named 'Vandhu'. On the left is a sidebar with navigation options: Students, Remarks, Uploaded Material, Sessions, Marks, Attendance, Change Password, and Logout. The main area displays a table of allocated students with columns for NAME, EMAIL, PHONE, ASSIGNED SUBJECT, BRANCH, DESIGNATION, and ACTIONS. The table lists five students: Bhavana, Mohasin, vandhu, Pavan, and Tharun, all assigned to 'CSE' in the 'CSE' branch. Each row has an 'Open Link' and a 'Delete' icon in the actions column. Below the table are 'Previous' and 'Next' navigation buttons.

NAME	EMAIL	PHONE	ASSIGNED SUBJECT	BRANCH	DESIGNATION	ACTIONS
Bhavana	nirmalpalbhavana@gmail.com	9182576044	CSE	CSE		Open Link
Mohasin	mohasin@gmail.com	9876543210	CSE	CSE		Open Link
vandhu	saknamade@gmail.com	9876543210	CSE	CSE		Open Link
Pavan	pavan@gmail.com	9876543210	CSE	CSE		Open Link
Tharun	tharun@gmail.com	9876543210	CSE	CSE		Open Link

Fig 6: Allocated Students

The Sessions functionality within the NECN Student Mentoring System offers teachers a well-structured list of planning mentoring sessions. Teachers can access links to sessions, view students assigned to them, and monitor session dates through this functionality. Teachers can delete sessions if necessary or leave comments once a session has been conducted. The Open Link button enables them to join the session immediately, making the mentoring process smooth and structured. This module assists in handling student interactions in an effective manner and keeping a record of previous and future sessions



The screenshot shows the 'Sessions' section of the 'Teacher Dashboard' for 'Vandhu'. The sidebar is the same as in Fig 6. The main area displays a table of session details with columns for #, STUDENT NAME, LINK, DATE, and ACTION. Two sessions are listed: one for Bhavana on 28-02-2025 and one for Pavan on 01-03-2025. Each session has an 'Open Link' and two action buttons: 'Delete Session' and 'Give Remarks'.

#	STUDENT NAME	LINK	DATE	ACTION
1	Bhavana	Open Link	28-02-2025	Delete Session Give Remarks
2	Pavan	Open Link	01-03-2025	Delete Session Give Remarks

Fig 7: Session Details

The View Remarks section in the NECN Student Mentoring System enables teachers to manage and review feedback following every mentoring session. This helps in recording the important observations, such as strengths, challenges, and areas of improvement, and student date and time of the session. Teachers can monitor student progress through several sessions to ensure customized guidance. Students also get to access their feedback from the View Feedback option, ensuring an open and organized mentoring process.

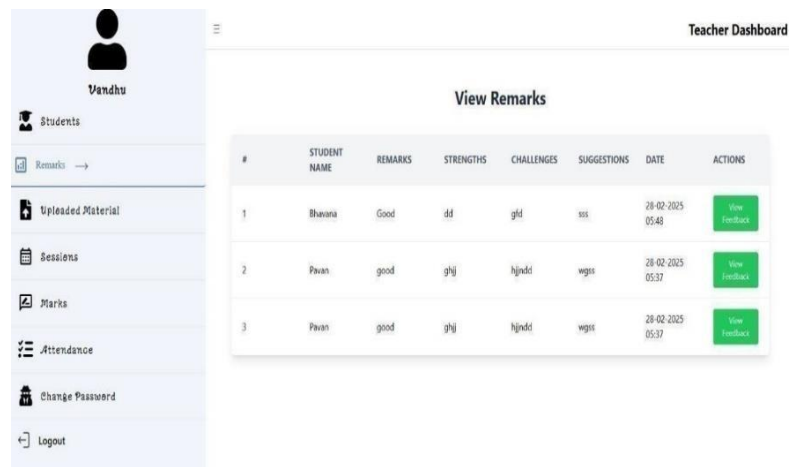


Fig 8:Remarks

V. CONCLUSION

The NECN Student Mentoring System effectively addresses the inefficiencies of traditional mentoring by automating session scheduling, tracking student progress, and enhancing mentor-student communication. The integration of features such as automated reminders, structured performance tracking, and parental involvement fosters a holistic mentoring approach. This contributes to enhanced academic support, accountability, and proactive intervention, ultimately benefiting student growth and success.

With a user-friendly interface, secure authentication, and role-based access, the system ensures seamless navigation and data privacy. Furthermore, integrated analytics provide valuable insights into student performance trends, allowing mentors to tailor guidance accordingly. By leveraging technology, the NECN Student Mentoring System establishes a scalable and adaptable framework suitable for diverse educational institutions, promoting long-term student success.

VI. REFERENCES

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