

Mern Stack Based Student-Faculty Academic and Mentoring Management Portal

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Abstract— This project presents a web-based Faculty–Student Mentoring Management Portal designed to improve communication and academic tracking in educational institutions. Traditional mentoring methods often lack proper organization and centralized data management. To overcome this, the system is developed using the MERN stack, providing a single platform for managing student records, monitoring performance, and sharing feedback. The portal allows faculty, students, and administrators to interact through role-based access, ensuring secure and efficient usage. It simplifies mentoring activities, enables real-time updates, and supports better decision-making. Overall, the system enhances the effectiveness of mentoring and contributes to improved student development.

Index Terms— Faculty–Student Portal, MERN Stack, Academic Management, Mentoring System, Role-Based Access, Web Application, Student Performance Tracking, Data Management

I. INTRODUCTION

In today's academic environment, effective mentoring plays an important role in guiding students toward academic success and personal growth. However, many institutions still depend on manual or poorly connected systems to manage mentoring activities, which often leads to unorganized data, limited communication, and difficulty in tracking student performance. This lack of a centralized system makes it challenging for faculty to monitor progress and provide timely support to students. To overcome these issues, this project introduces a faculty–Student Academic and Mentoring Management Portal developed using the MERN stack. The system offers a centralized and user-friendly platform where faculty can manage student records, monitor academic performance, and provide continuous feedback.

Students can access their academic details and interact with mentors easily. With role-based access and real-time updates, the portal improves communication, ensures data security, and makes the mentoring process more efficient and structured.

II. PROPOSED SYSTEM

The proposed system is a web-based Faculty–Student Mentoring Management Portal developed using the MERN stack. It provides a centralized platform where faculty can manage student records, monitor academic performance, and offer regular feedback. Students can easily access their academic details, attendance, and mentoring information.

The system supports role-based access for students, faculty, and administrators, ensuring secure and organized data handling. It enables real-time updates, improves communication, and makes the mentoring process more efficient and transparent.

III. METHODOLOGY

A. Data Collection and Preprocessing

The system collects data related to students, faculty, and academic activities such as attendance, marks, and mentoring records. This data is stored and managed using MongoDB. During preprocessing, the data is cleaned and organized by removing duplicate entries, correcting inconsistencies, and formatting it into a structured form.

Proper validation is also applied to ensure accuracy and completeness of the data. This step helps in maintaining a reliable database, which is essential for smooth functioning of the system and accurate tracking of student performance.

B. Ingredient Toxicity Analysis

The processed data is used within the portal to manage mentoring activities efficiently. Faculty members can access student information, monitor academic progress, and provide feedback through the system. Students can view their records, track performance, and communicate with mentors. The system uses role-based access to ensure secure data handling for students, faculty, and administrators. Real-time updates and smooth interaction between frontend and backend help in improving communication and making the mentoring process more effective and organized.

C. Recommendation Process

The system processes data using the MERN stack, where user inputs such as student details, academic records, and mentoring updates are handled through the frontend and managed efficiently in the backend using Node.js, Express.js, and MongoDB.

It enables faculty to monitor student performance, update records, and provide feedback, while students can access their academic information and communicate with mentors.

D. Result Visualization

The results are displayed through a simple and user-friendly interface using React. The system shows student details, academic performance, and mentoring feedback in a clear format. Dashboards help users easily understand the information, and real-time updates improve usability and overall experience.

IV. SYSTEM DESIGN

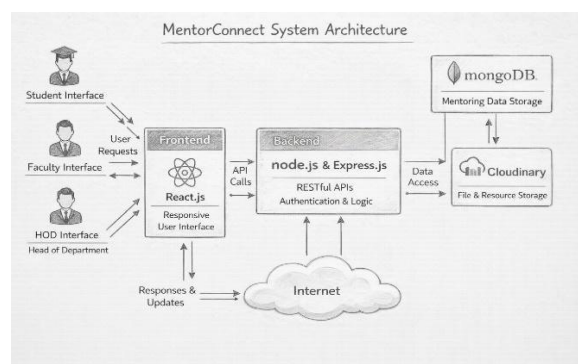


Fig. 1: System Architecture of Mentor Connect

Fig. 1 illustrates the overall system architecture of the faculty–Student Mentoring Management Portal. The

process starts with user interaction, where students, faculty, or administrators log in and provide necessary inputs. The data is then processed through the backend, where it is validated, organized, and stored in the database. Calculates a toxicity score and classifies the product as Safe, Moderate, or Toxic. The results are then displayed to the user in an understandable format. the system manages academic records, attendance, and mentoring details through different modules. Faculty can track student performance and provide feedback, while students can view their progress and interact with mentors. The processed information is displayed through a user-friendly interface. This architecture ensures efficient data management, secure access, and smooth communication within the system.

V. RESULTS

The developed system successfully implements a faculty–Student Mentoring Management Portal that simplifies academic and mentoring activities through a centralized platform. Users can log in based on their roles, where students can view their academic records, attendance, and mentoring details, while faculty can monitor student performance and provide feedback. The system efficiently manages and stores data, ensuring smooth interaction between users and easy access to information. The portal presents data in a clear and organized manner, helping users understand student progress effectively. With real-time updates and user-friendly dashboards, faculty can provide timely guidance, and students can continuously track their improvement. Overall, the system enhances communication, improves data management, and makes the mentoring process more efficient and transparent.

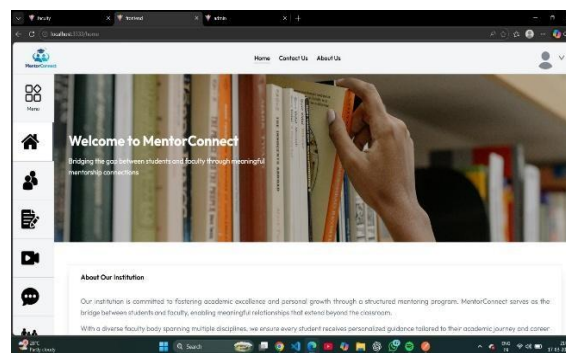


Fig 2: Student Dashboard

Fig. 2 shows the home dashboard of the system after a user logs in. The dashboard provides an overview of important information such as student details, academic performance, attendance, and recent mentoring activities. It acts as the main interface where users can quickly access different features of the portal. The information is displayed in a clear and organized manner, making it easy for users to understand and navigate. The dashboard helps students track their progress and allows faculty to monitor and manage mentoring activities efficiently, improving overall user experience.

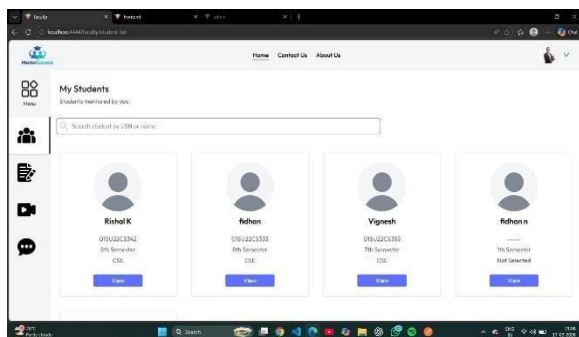


Fig 3: Faculty Dashboard

Fig. 3 shows the faculty dashboard of the system, where faculty members can view and manage student-related information. The dashboard provides details such as student lists, academic performance, attendance, and mentoring records in a structured format. It allows faculty to easily monitor the progress of assigned students. The interface presents data clearly, helping faculty identify students who need guidance and provide timely feedback. It also enables efficient management of mentoring activities, improving communication and overall academic monitoring within the system.

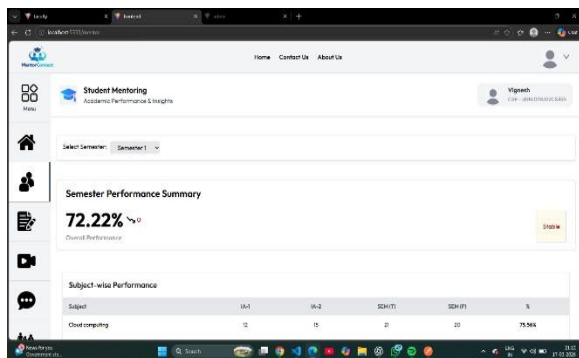


Fig 4: Student Mentoring

Fig. 4 shows the student mentoring section of the system. In this module, faculty can view detailed information about individual students, including their academic performance, attendance, and previous mentoring records. This helps faculty understand each student's progress and identify areas where support is needed. During the mentoring process, faculty can provide feedback, suggestions, and guidance based on the student's performance. The system stores these mentoring details, allowing students to review the feedback and improve accordingly. Faculty and supports better academic development.

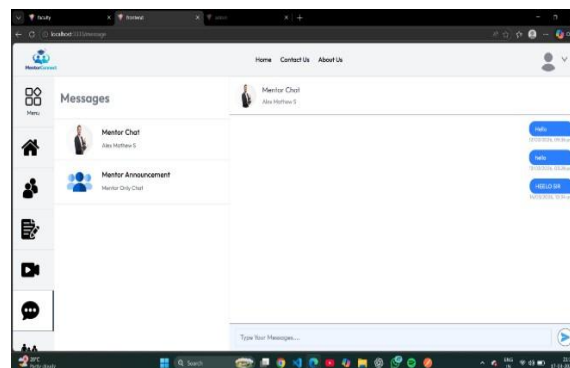


Fig 5: Messaging System

Fig. 5 shows the messaging system of the portal, which enables communication between students and faculty. This feature allows users to send and receive messages in real time, making it easier to discuss academic issues, clarify doubts, and share important updates. The interface is simple and user-friendly, displaying conversations in an organized manner. This messaging system improves interaction, ensures quick communication, and strengthens the mentoring relationship between students and faculty.

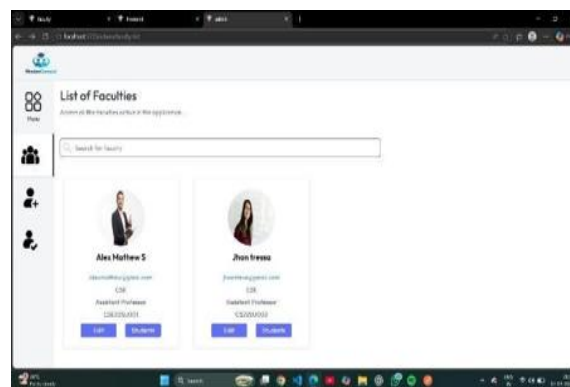


Fig 6: HOD Dashboard

Fig. 6 shows the HOD (Head of Department) dashboard of the system, which provides a complete overview of academic and mentoring activities within the department. Through this dashboard, the HOD can monitor student performance, review faculty mentoring activities, and track overall progress in a centralized manner.

The dashboard displays important information such as student records, faculty details, and various reports in a clear and structured format. It enables the HOD to analyze performance trends, identify areas that need improvement, and ensure that mentoring processes are carried out effectively. This helps in better decision-making, efficient management, and maintaining academic quality across the department.

VI. CONCLUSION

The faculty–Student Mentoring Management Portal demonstrates an effective solution for improving academic monitoring and mentoring activities in educational institutions. The system successfully provides a centralized platform to manage student records, track academic performance, and maintain structured mentoring interactions between faculty and students. It simplifies data handling and ensures better organization compared to traditional methods.

The developed portal is user-friendly, efficient, and supports role-based access for students, faculty, and administrators. It enhances communication, enables real-time updates, and helps faculty provide timely guidance to students. Overall, the system contributes to improved academic performance, better decision-making, and a more transparent and effective mentoring process within the institution.

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