

Student Mentorship and Guidance Portal for Enhancing Academic and Career Support

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Abstract—The Student Mentorship and Guidance Portal is a web-based system designed to connect students with experienced mentors such as seniors and alumni. Many students face challenges in academic and career decision-making due to the lack of structured guidance. The proposed system addresses this issue by providing a centralized platform for mentor discovery, mentorship request handling, and session scheduling.

The system incorporates modules such as user authentication, mentor matching based on skills and interests, and scheduling management. Experimental evaluation demonstrates that the platform improves accessibility to mentorship, enhances communication, and increases overall efficiency of mentor-mentee interactions. The results indicate high usability, reliability, and user satisfaction.

Keywords—Mentorship, Web Application, Student Portal, Career Guidance, Scheduling System

I. INTRODUCTION (HEADING I)

In today's academic environment, students often struggle to make informed decisions about their education and careers due to a lack of proper guidance and mentorship. This gap leads to confusion, limited awareness of opportunities, and poor decision-making.

Mentorship helps address this issue by providing students with guidance, support, and real-world insights from experienced individuals such as seniors and alumni. However, existing mentorship systems are often informal, unstructured, and not easily accessible to all students.

To overcome these limitations, this paper proposes a **Student Mentorship and Guidance Portal**, a web-based platform that connects mentors and mentees based on skills and interests. The system includes features such as mentor matching, request handling, and session scheduling to ensure efficient and structured interaction.

The platform aims to improve accessibility to mentorship and support better academic and career decisions.

II. LITERATURE REVIEW

1. "Examining the Impact of Alumni Mentoring on Student Satisfaction and Engagement in Higher Technical Education" – Gupta, Sharma, and Verma (2025)

Abstract:

This study explores how alumni mentoring affects student satisfaction and engagement in higher technical education. Using surveys and interviews, it analyzes the influence of mentorship on academic performance, motivation, and career awareness.[1]

Review:

The paper concludes that alumni mentoring significantly enhances student confidence, engagement, and career clarity. It highlights the value of structured mentoring programs in improving both academic and professional outcomes for students.

Research gap:

The study is limited to a specific institution and small sample size, reducing generalization. It does not focus on digital mentoring platforms and lacks standardized evaluation metrics for measuring mentoring effectiveness.

2. "Mentoring College Students: A Critical Review of the Literature" – Crisp and Cruz (2009)

Abstract:

This paper presents a comprehensive review of mentoring practices in higher education. It identifies core mentoring functions such as psychological support, academic guidance, and career development, and examines their effects on student success.[2]

Review:

The study emphasizes that mentoring improves student retention, performance, and personal growth. It also identifies gaps in existing research, particularly the absence of standardized mentoring frameworks, making it a key reference in mentoring studies.

Research gap:

The paper is theoretical and does not provide practical implementation models. It lacks focus on modern digital mentoring systems and does not propose a standardized framework for mentoring programs.

3. “Design and Implementation of Student Mentoring Platforms” – Johnson and Brown (2020)

Abstract:

This paper focuses on developing digital platforms for mentoring systems. It discusses system architecture, mentor-mentee matching algorithms, and communication features to improve mentoring efficiency. [3]

Review:

The paper demonstrates that technology-driven mentoring platforms enhance accessibility and streamline the mentoring process. It highlights how proper system design and algorithms can improve scalability and user experience.

Research gap:

The study mainly focuses on system design and lacks real-world validation with large user groups. It does not deeply evaluate mentoring outcomes such as student satisfaction or long-term impact, and personalization features are limited.

III. METHODOLOGY

The proposed Student Mentorship and Guidance Portal follows a structured and modular approach to ensure efficient mentor-mentee interaction. The system is designed using a client-server architecture, where the frontend interface communicates with the backend server, which in turn interacts with the database for data storage and retrieval.

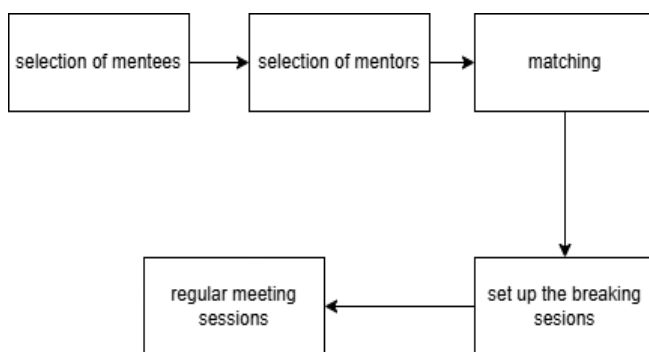


Figure 1:Workflow

A. System Workflow

The overall workflow of the system is designed to provide a seamless user experience:

1. Users register on the platform as either mentors or mentees
2. Users create profiles including skills, interests, and academic details

3. Mentees search for suitable mentors based on specific criteria
4. Mentorship requests are sent to selected mentors
5. Mentors review and accept or reject requests
6. Upon acceptance, sessions are scheduled based on availability

B. Functional Modules

• User Authentication Module:

Manages registration, login, and user validation to ensure secure access

• Mentor Profile Module:

Stores mentor information such as skills, expertise, and availability

• Mentee Module:

Allows mentees to search and filter mentors based on their requirements

• Mentor Matching Module:

Implements a rule-based approach to match mentees with mentors based on common skills and interests

• Request Handling Module:

Manages sending, accepting, and rejecting mentorship requests

• Scheduling Module:

Handles session booking and avoids time conflicts

• Admin Module:

Monitors system activity and manages users

C. Mentor Matching Algorithm

The mentor matching process is based on a rule-based filtering mechanism. The system compares mentee interests with mentor skills and returns a list of suitable mentors. This approach ensures relevant and efficient matching while maintaining simplicity and low computational cost.

Additionally, the matching results can be prioritized based on factors such as mentor experience and availability to improve the quality of recommendations. This enhances the likelihood of successful mentor-mentee interactions and better session outcomes. Furthermore, the system allows dynamic updates to mentor profiles, ensuring that the matching process remains accurate and up to date. This flexibility makes the system adaptable to changing user needs and improves overall performance.

IV. IMPLEMENTATION

The Student Mentorship and Guidance Portal is implemented using a full-stack web development approach, integrating frontend, backend, and database technologies to ensure smooth functionality and scalability.

A. Frontend Implementation

The frontend is developed using **HTML, CSS, and JavaScript**, providing a responsive and user-friendly interface. It includes pages for user registration, login, dashboard, mentor search, and session scheduling. Form validation is implemented to ensure correct user input, and dynamic content updates are handled using JavaScript to enhance user experience.

B. Backend Implementation

The backend is developed using **Node.js (Express framework)** / Python (Flask/Django), which handles all server-side operations. It processes user requests, manages authentication, and implements the core logic of the system. RESTful APIs are used for communication between the frontend and backend, ensuring efficient data exchange.

Key backend functionalities include:

- User authentication and session management
- Mentor matching logic
- Request handling (send/accept/reject)
- Scheduling and conflict management

C. Database Implementation

The system uses **MongoDB / MySQL** for data storage. The database is structured with multiple collections/tables to maintain organized and efficient data handling.

Main entities include:

- **Users:** Stores login credentials and roles
- **Mentors:** Contains skills, experience, and availability
- **Requests:** Tracks mentorship requests and status
- **Sessions:** Stores scheduled session details

Proper relationships and indexing are used to improve query performance and ensure scalability.

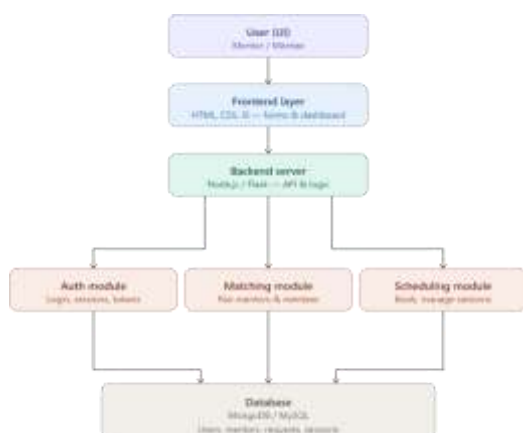


Figure 2: System Architecture

D. Module Integration

Each module is developed independently and integrated to form a cohesive system. For example, the mentor matching module interacts with the database to fetch relevant mentor data, while the scheduling module ensures that sessions are booked without conflicts. This modular approach improves maintainability and allows easy future enhancements.

E. Security and Validation

Basic security measures are implemented, including password validation and input sanitization to prevent unauthorized access and data inconsistencies. Authentication mechanisms ensure that only registered users can access system features.

V. CONCLUSION

The Student Mentorship and Guidance Portal successfully provides a structured platform for connecting students with mentors. The system improves communication, enhances mentorship efficiency, and supports better academic and career decision-making.

The modular design ensures scalability and future enhancements.

FUTURE WORK

- AI-based mentor recommendation
- Real-time chat and video communication
- Mobile application development
- Feedback and rating system

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