International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 11 | November - 2023 SJIF Rating: 8.176 ISSN: 2582-3930

E-Mentoring System

Mr. Ashutosh Kale[1], Atul Thete[2], Pranjal Thorat[3], Aditi Bhavsar[4], Aditi Shinde[5]

[1]Assistant Professor, Department of Computer Engineering, MET's Institute of Engineering, Nashik
[2,3,4,5,]Undergraduate Student, Department of Computer Engineering, MET's Institute of Engineering, Nashik

---

Abstract - Tutoring has long been a proven method of increasing mentee motivation and performance. However, traditional training methods can be replaced by using electronic training. This new system works on a client-server model and seamlessly connects mentors and mentees. It simplifies the process of accessing mentee information and provides mentors with easy access to important mentee information. The main purpose of this process is to provide mentors with a deeper understanding of the challenges mentees face, ultimately helping to improve mentee performance. It also has a ranking system that allows mentors to evaluate mentees' academic performance and provide assistance to those in need.

Key Words: Mentor, Mentee Management, Education, Career Development.

1. INTRODUCTION

Education plays an important role in training and professional development, as do jobs that require specialized knowledge. A mentor is someone who has experience in a particular field and is willing to guide and motivate people to acquire those skills. Effective mentors can provide valuable advice, positive feedback, and support to help mentees unlock their potential and achieve their goals. But managing large numbers of mentees and their data can be a difficult task for mentors. Tracking each mentee's progress, keeping lines of communication open, and providing timely feedback can be a daunting task. This is where the mentor control system comes into play.

E-Mentoring system provides a unified platform for mentors to monitor mentees according to their guidance. This tool facilitates interaction between Mentors and Admins, making it easier for mentors to monitor their progress and provide feedback. In addition, the system allows mentees to provide information, which is then displayed on the mentor's dashboard, making it easy to track their progress. E-Mentor is designed to improve the teaching process and its goals include communication between mentors and mentees, opening the eyes of mentors, monitoring mentee progress and ultimately helping mentees realize their potential.

2. LITERATURE SURVEY

Sudhir Jadhav has developed "Online Mentoring System", in Int. J. of Engineering Trends and Technology. E-lesson programs are a service offered at schools. These programs can be offered as an on-campus service to a specific group of mentees or integrated into a program of study in a specific class. For example, one university's biology department may be advised by a biology department at a neighboring university. In this school setting, the program is primarily supervised by mentors and staff, as well as occasional absent mentors [1].

Keerthana, Nivetha, Jeyadharshini UG Student from Department of Information Technology, Agni College of Technology have developed a "Mentor and Mentee System". This coaching and training program is designed to maintain good relationships between mentors, parents and mentees. Mentoring and mentoring provide mentees with hands-on training, professional development, and help improve mentee learning. Mutual trust and regular contact and communication are important elements between mentors and mentees [2].

F. Cavallaro and K. Tan emphasized the value of mentoring for learning, professional development efforts, and organizational development in their 2006 article "Computer-Mediated Peer-to-Peer Mentoring" published in the AACE Journal. E-mentoring is popular due to its ability to provide global access to mentors, reduce mentoring costs, and remove time and geographic constraints for mentors and audiences. Importantly, trust is an important factor in the success of e-mentoring relationships, and this article presents a research methodology to better understand the creation and sustainability of trust in online education [3].

E-Lynn Akin and Janet Hilbun examined the transition from face-to-face education to e-learning for university students in their article titled "E-mentoring in three voices" published in the Online Journal of Distance Learning Management Tutoring in 2007. England Their research, which spanned two years and included interviews with e-mentors, revealed the differences and advantages of e-learning and discussed its implications for mentors and inspectors. Educational options and training [4].

Javeriya Farheen, a student at the Department of Information Science and Engineering at Dayananda Sagar College of Engineering in Bangalore, India, has developed an e-learning training course that includes Android and desktop applications. The main purpose of this training is to strengthen the relationship between instructors and trainees [5].

3. PROPOSED SYSTEM

The envisioned E-Mentoring System consists of a web-based platform featuring three distinct user roles: Admin, Mentor, and Mentee. This technology is specifically crafted to streamline communication between mentors and their matched students, facilitating progress monitoring and efficient data management for mentors.

The system will include the following components:

*(1) **Mentees:***

Data collection will be facilitated through embedded forms. Mentees will be able to access their personal information, attendance records and academic records. Both mentors and admins can access this information. Mentees can view their records to monitor their progress and make any necessary improvements.

*(2) **Mentors:***

Mentors will have access to information submitted by mentees. They can schedule work and time, working according to the individual and the needs of the selected mentees. Mentors will also use test results to manage mentee attendance and evaluate mentee performance.

*(3) **Admin:***

Admin will have access to all information. They can manage and track information and send communications to mentees and mentors. The admin's role also includes data analysis to identify trends and patterns that will improve the overall mentee experience.

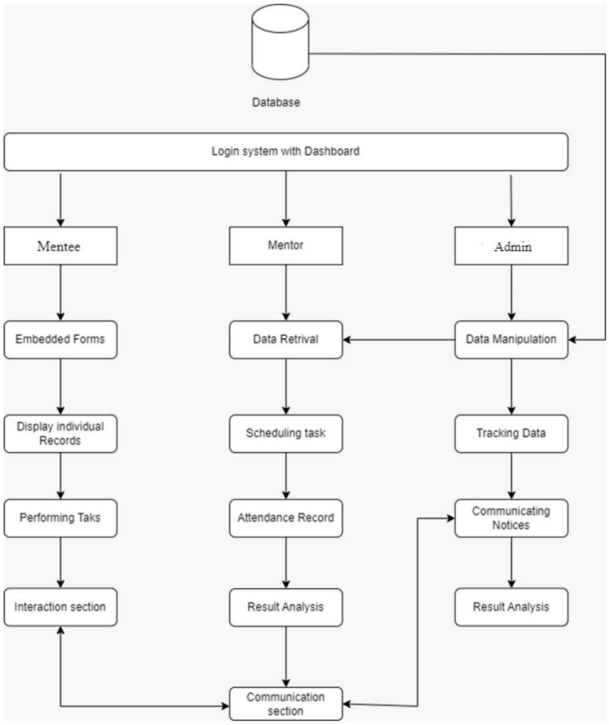

Fig.1 System Breakdown Structure

4. METHODOLOGY

1) Problem Identification:

The first step is to identify emerging problems and determine the most appropriate platform to solve them. We focus mentors monitoring mentee progress and providing guidance, facilitating communication between mentors and mentees.

2) Data Collection:

Our approach begins with data collection. We collect information about the instructor, including their skills and availability for training. Similarly, information about mentees, including their interests and characteristics of mentors, is collected and this is done through the online registration process.

3) Database Structure:

After this, we create a database and manage this information correctly. This database contains information on mentors, admins, mentorship requests, and mentor-mentee pairing. Its main function is to maintain data integrity and minimize duplication.

4) Backend Development:

At this stage, we start developing the backend of the system. We use PHP as a programming language and framework to create simple processes and functions of the system. This involves implementing a process to move data from database to database and manipulate that data. We have also developed an algorithm to match mentors and mentees based on their skills and interests.

5) User-Interface Design:

After the database design, we design the user interface for the E-Mentoring system. This interface includes login and registration functions, suitable for mentors and admins. It also provides dashboards for mentors and admins. The Mentor Dashboard allows mentors to view and manage their mentorship requests and mentee pairings, while the Admin Dashboard allows admins to monitor mentor and mentee information, as well as mentorship requests and pairings.

6) Front-end Development:

After the back-end development is completed, we continue to develop the front-end of the E-Mentoring system. The user interface is built using HTML, CSS and JavaScript. We've integrated login and registration functions, as well as mentor and admin dashboards.

7) Testing and Deployment:

The final phase involves thorough testing of the system to confirm its functionality and compliance with the specified criteria. This includes conducting different tests like functional, usability, and performance testing. Upon completion of testing, the E-Mentoring system is deployed onto a web server for user access.

5. RESULTS AND DISCUSSIONS

The implemented system designed to facilitate interactions among mentee, mentors, and admin has undergone practical implementation and rigorous testing to evaluate its efficacy in enhancing the efficiency of data collection, management, and analysis processes. The following achievements have been noted:

User registration and login:

The system facilitates user registration and login procedures, employing robust authentication measures to ensure that only authorized individuals can access the platform. Through this secure authentication mechanism, the system effectively restricts data access and modification to intended users, thereby mitigating the risk of unauthorized data breaches.

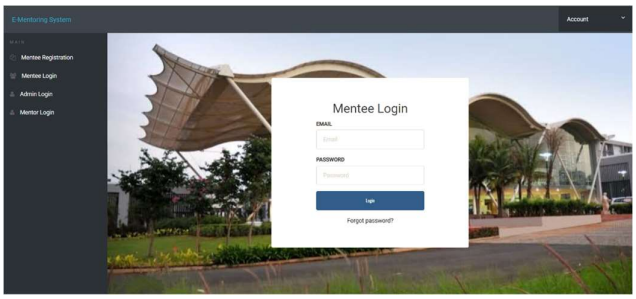

Fig. 2 User Login

Mentors can respond to mentee's queries by:

Mentees have the capability to submit inquiries via the system, while mentors can access and address them via their dashboard. This functionality has proven beneficial in fostering constructive communication between mentees and mentors, ensuring prompt resolution of mentee issues.

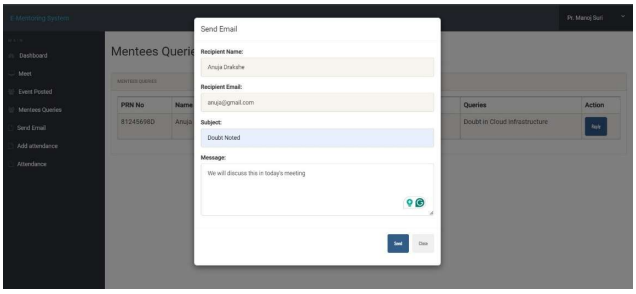

Fig. 3 Query Management

After logging in, the mentor can manage the mentees from their dashboard:

The mentor dashboard serves as a centralized platform for mentors to oversee various mentee information, including attendance records, task schedules, and academic achievements. This consolidation helps reduce administrative expenses.

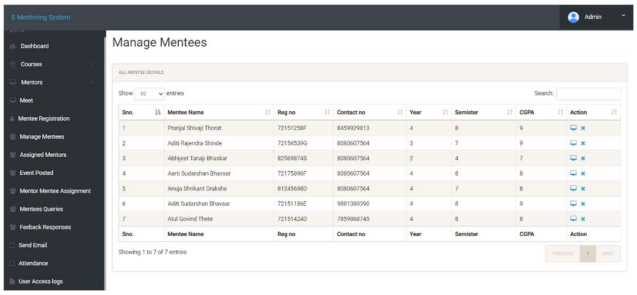

Fig. 4 Mentee Management

Mentor can send an email to mentees:

The platform facilitates direct email communication between mentors and mentees through their dashboard, fostering effective interaction and improving the overall mentee journey.

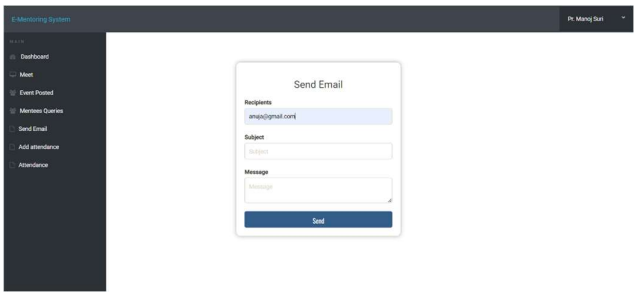

Fig. 5 Email Sending

Mentees can upload their achievements:

This functionality enables mentors to monitor and document the academic and personal achievements of their mentees, offering a holistic perspective on their development and advancement throughout their mentorship journey.

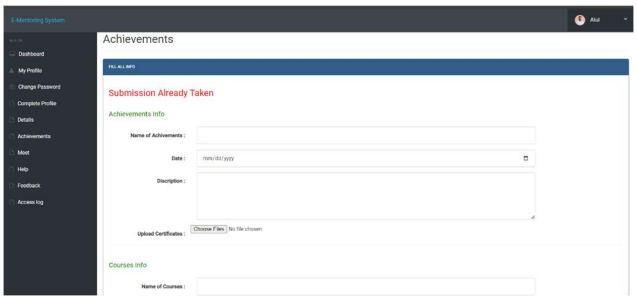

Fig. 6 Mentee Achievements

Assignment of mentors:

This functionality enables administrators to designate mentors for individual mentees, offering them guidance and support throughout the project's timeline. It guarantees This functionality enables administrators to designate mentors for individual mentees, offering them guidance and support throughout the project's timeline.

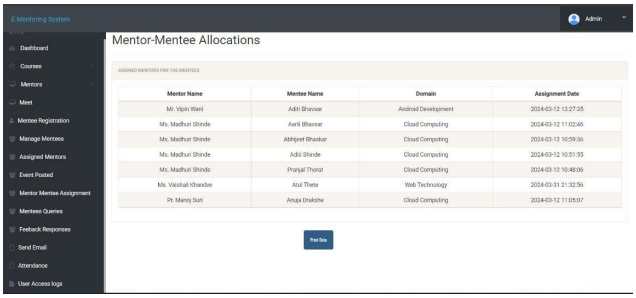

Fig. 7 Mentor Assignment

Attendance Tracking of Mentees:

This functionality enables mentors to monitor their mentees' attendance, offering insightful data regarding their involvement and advancement within the program. Additionally, it aids mentors in promptly recognizing any emerging concerns and implementing proactive strategies to resolve them.

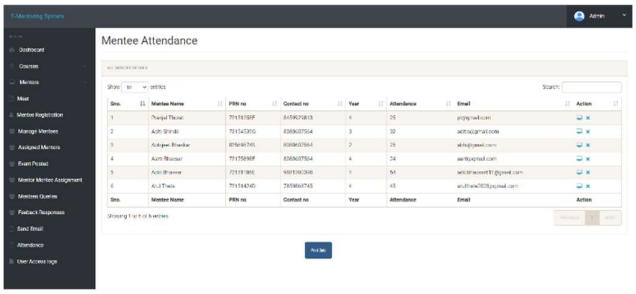

Fig. 8 Mentee Attendance Tracking

Data Storage on MySQL:

MySQL stands as a widely embraced open-source database management system renowned for its capability in handling substantial data volumes. Its key strength lies in bolstering data security through features like encryption, password shielding, and access regulation. Furthermore, MySQL facilitates efficient data organization via mechanisms such as table creation, indexing, and establishing relationships between data entities. These functionalities streamline data management and retrieval processes, thereby minimizing time and effort invested in locating specific information. Moreover, leveraging a MySQL server ensures seamless data accessibility for authorized users, irrespective of their location, granted they possess internet access and pertinent login credentials. This accessibility fosters convenient data manipulation and retrieval, thereby fostering enhanced communication and collaboration among mentors, admin, and other stakeholders.

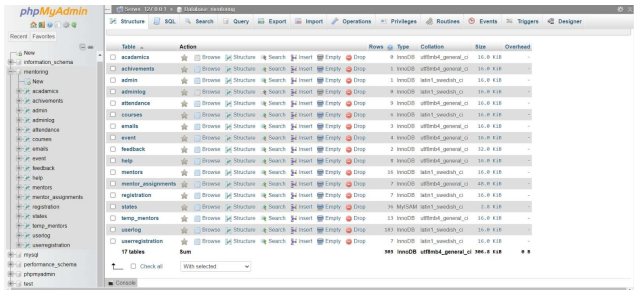

Fig. 9 Data Storage on MySQL

6. CONCLUSION

This study shows how electronic education can be improved. E-Mentoring system simplifies the teaching process for mentees by managing demand effectively. Mentors can easily log into the central dashboard to view mentee information, communicate, and send emails when needed. It has been well-received during development and successful implementation, marking a significant step toward enhancing the mentoring experience. Therefore, it is committed to the promotion of social education in education.

REFERENCES

[1] Sudhir Jadhav, Shivani Thakare, “Online Mentoring System” in *International Journal of Engineering Trends and Technology*) - Volume 67 Issue 1 - January 2019.

[2] Keerthana, Nivetha “Mentor and Mentee System” in *International Journal of Innovative Research in Technology*, vol 7 Issue 10, March 2007.

[3] F. Cavallaro and K. Tan, “Computer-Mediated Peer-to-Peer Mentoring”, in *AACE Journal*, vol. 14, no. 2, pp. 129-138, Chesapeake, VA*: Association for the Advancement of Computing in Education (AACE),* 2006.

[4] Lynn Akin and Janet Hilbun, “E-mentoring in three voices”, *Online Journal of Distance Learning Journal of Teaching and Learning in Higher Education*, Volume 20, 2009.

[5] J. Farheen, "E-Mentoring system is an Android and Desktop based application for undergraduate initiatives," in Department of Information Science and Engineering, Dayananda Sagar College of Engineering, Bangalore, India.

[6] Indu Anoop, Pradnya Godambe, “Implementation of E-Mentoring System”, in *International Journal of Research in Engineering, Science and Management* Volume-2, Issue-4, April-2019.

[7] Sandra L. Williams and Justin Kim, "Online teaching and mentoring," in *International Journal of Evidence Based Coaching and Mentoring* Vol. 9, No. 2, August 2011.

[8] R U V N Satish, M. Vivekananda, "Implementation of Mentoring System Using J2EE Architecture: E-Mentoring" in *International Journal of Electrical Electronics & Computer Science Engineering* Volume 3, Issue 5 October, 2016.