iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 13 **Issue:** IV **Month of publication:** April 2025

DOI: https://doi.org/10.22214/ijraset.2025.68720

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 13 Issue IV Apr 2025- Available at www.ijraset.com

A Web-based Mentor-Mentee Interaction System

Asst. Prof. P. Bala Murgan[1], Syed Haseeb[2], Rakesh Arusuru[3], Shaik Adil Basha[4], Thota Manikantasrinu[5]
Computer Science and Engineering J.N.N Institute of Engineering Kannigaipair, Tiruvallur, Tamil Nadu, India

Abstract: ***Mentorship is vital for early career researchers in training positions, allowing them to navigate the challenges of work and life in college environments. However, the quality of mentorship received by trainees can vary by investigator and by institution. One challenge faced by those hoping to improve trainee mentorship is that the extent to which mentorship is offered to and experienced by trainees is not well characterized. To address this knowledge gap, we surveyed to examine the quality of mentorship received by trainees in college environments, identify positive and negative mentorship characteristics, and highlight best practices to improve trainee mentorship.***
Keywords: graduate training,faculty mentors, early career guarantee, mentoring culture.

I. INTRODUCTION

Mentorship is regarded as guidance provided by a more experienced and knowledgeable person as a guide and sponsor (i.e., the mentor) to a less experienced individual, the mentee.A recent National Academies report defines academic mentorship as “a professional, working alliance in which individuals work together over time to support the personal and professional growth, development, and success of the relational partners through the provision of career and psychosocial support”.
Mentorship can also occur in the setting of academic groups defined as unilateral support from an advisor to mentees.
The mentor-mentee relationship is crucial for personal and professional growth. Mentors provide guidance, share knowledge, and offer support, helping mentees navigate challenges, develop skills, and achieve their goals. This relationship fosters confidence, encourages lifelong learning, and creates a supportive network that benefits both parties.
In contrast, lack of mentorship can isolate early career guadiuance who are facing the challenges of academic, limiting their career development. Several recent studies identified factors influencing the well-being of graduate students, aiming to raise awareness on these issues To address these gaps in knowledge,unlock their potential, and achieve their aspirations. Ultimately, the Mentor-Mentee Connect Project is a transformative effort to cultivate confident, capable, and well-rounded individuals prepared for future success.

Objectives
A mentor-mentee connect program in college aims to foster academic, personal, and professional growth among students by providing structured guidance and support. The program seeks to enhance academic performance by helping mentees navigate coursework, develop effective study habits, and set clear academic goals. It also focuses on personal development, building confidence, resilience, and emotional intelligence. Career guidance is a key objective, enabling mentees to explore career options, develop relevant skills, and make informed decisions.Ultimately, the program aims to improve retention and graduation rates, ensuring student success and institutional growth.

II. LITERATURE SURVEY

Existing Systems of mentor mentee connect
The existing systems of mentor-mentee connect in the education system vary widely, ranging from traditional in-person models to modern web-based platforms. These systems aim to provide students with guidance, support, and resources to enhance their academic, personal, and professional development.

1) Traditional In-Person Mentorship Programs

Traditional mentorship programs rely on face-to-face interactions between mentors and mentees. Educational institutions often facilitate these programs, where faculty members, senior students, or alumni serve as mentors.
Mentorship programs often involve regular one-on-one or group meetings, providing a structured environment with predefined goals and agendas. These sessions are designed to focus on key areas such as academic guidance, career advice, and personal development, ensuring that mentees receive comprehensive support tailored to their needs. Examples of such programs include faculty advising systems in universities, where professors or academic advisors guide students, and peer mentoring programs, where senior students offer support and guidance to their junior counterparts.

©IJRASET: All Rights are Reserved

However, these programs face several challenges. One major issue is limited scalability, as geographical and time constraints can make it difficult to accommodate all participants effectively. Additionally, matching mentors and mentees in a way that aligns their goals, interests, and personalities can be a complex and often challenging process, potentially impacting the overall effectiveness of the mentorship relationship.

2) Hybrid Mentorship Models

Hybrid models combine the best aspects of in-person and web-based mentorship. These systems allow for flexibility while maintaining the personal touch of traditional mentorship.

Mentorship programs often incorporate a mix of virtual and face-to-face interactions to provide flexibility and depth in the mentoring relationship. Online tools are frequently used for scheduling, communication, and resource sharing, making it easier for mentors and mentees to stay connected and organized. At the same time, periodic in-person meetings are encouraged to foster deeper engagement and strengthen the personal connection between participants. For example, some university programs utilize online platforms for initial matching and ongoing communication but emphasize in-person meetings for key milestones or significant discussions.

Despite these advantages, such programs face challenges. One major issue is striking the right balance between the convenience of virtual tools and the authenticity of in-person interactions, as both modes offer unique benefits that are difficult to replicate. Additionally, ensuring consistent engagement across both virtual and face-to-face settings can be challenging, as participants may struggle to maintain the same level of commitment and interaction in both environments.

3) Corporate and Industry-Led Mentorship Programs

Some educational institutions collaborate with corporations and industry leaders to provide mentorship opportunities for students. These programs focus on career readiness and industry-specific skills.

Mentorship programs that involve industry professionals often focus on guiding students through career paths and skill development, bridging the gap between academia and the professional world. These programs frequently include opportunities such as internships, workshops, and networking events, which provide students with hands-on experience and connections in their chosen fields. A key emphasis is placed on the real-world application of academic knowledge, helping students understand how their studies translate into practical skills and career success. Examples of such initiatives include IBM's Mentor Place, which connects students with IBM employees for career guidance, and Microsoft's Mentorship Program, which offers mentorship to students in STEM fields.

However, these programs face certain challenges. One significant issue is aligning corporate goals with educational objectives, as the priorities of businesses and academic institutions may not always overlap seamlessly. Additionally, ensuring long-term engagement from industry mentors can be difficult, as professionals may have competing demands on their time and availability, potentially impacting the consistency and effectiveness of the mentorship experience.

4) Web-Based Mentorship Platforms

With the advent of technology, many educational institutions have adopted web-based mentorship platforms to overcome the limitations of traditional models. These platforms use digital tools to facilitate mentorship

Mentorship platforms often leverage advanced features such as profile-matching algorithms to pair mentors and mentees based on shared interests, goals, and expertise. These platforms typically include integrated communication tools, such as messaging and video calls, to facilitate seamless participant interaction. Additionally, they provide resource libraries and progress tracking dashboards, enabling users to access valuable materials and monitor their development over time. Examples of such platforms include MentorCity, which is used by colleges to connect students with mentors, and Wisr, a web-based tool designed to build mentorship networks within universities.

Despite these technological advancements, challenges remain. Technical issues, such as platform glitches or connectivity problems, can hinder the user experience, and a lack of digital literacy among some users may create barriers to effective participation.

III. PROPOSED METHODOLOGY

The suggested framework in the Mentor Mentee Connect System (E-Mentoring System) project covers creation, implementation and control of an all-in-one digital platform which is aimed at making mentoring more effective with respect to undergraduate students as well as faculty.

It consists of three main modules; namely Admin, Mentor and Mentee, each of which have different roles that facilitate communication and support throughout the whole mentoring program.

Flow Chart of Mentor Mentee Connect



A. Admin Login Module

The Admin Module serves as the central hub for managing and overseeing all aspects of the Mentor-Mentee Connect platform. It provides comprehensive access control, allowing administrators to navigate and manage all other modules within the system seamlessly. This centralized control ensures efficient oversight and streamlined operations. Administrators are responsible for student management, which includes adding, updating, and maintaining accurate records of student details, ensuring the system reflects the most current information. Additionally, the module facilitates staff management, enabling admins to add, update, and manage mentor details, simplifying mentor allocation and tracking. Furthermore, the admin module includes a feedback management feature, allowing administrators to review feedback provided by students about their mentors.

B. Mentor Login Module

The Mentor Module is designed to provide mentors with secure and efficient access to their specific functionalities within the Mentor-Mentee Connect platform. It begins with a robust authentication process, where mentors must provide necessary credentials to log in, ensuring secure access to their accounts. Once logged in, mentors can view student details, including comprehensive profiles and academic records of their assigned mentees, enabling them to better understand and support their progress. The module also includes a query management feature, allowing mentors to promptly view and respond to queries from their mentees, fostering clear and timely communication.

Additionally, mentors can provide remarks and statusupdates to track and document the academic progress of their mentees. By offering personalized feedback and updates, mentors play a crucial role in guiding students and helping them achieve their goals, ensuring a structured and supportive mentoring experience.

C. Mentor Login Module

The Mentee Module is designed to provide students with a secure and user-friendly interface to engage with their mentors and manage their personal information. It begins with a secure authentication process, where mentees log into the system using a valid username and password, ensuring their accounts are protected from unauthorized access or potential security breaches. Once logged in, mentees can access profile management features, allowing them to view and update their personal profiles as needed, ensuring that their information remains accurate and up-to-date. The module also facilitates query posting, enabling mentees to ask questions and seek guidance from their mentors, thereby maintaining an active and open line of communication.

©IJRASET: All Rights are Reserved

Additionally, mentees can submit feedback about their mentoring experiences, providing valuable insights into the effectiveness of their sessions and helping to improve the overall quality of the mentoring process. Together, these features empower mentees to actively participate in their learning journey while fostering a collaborative and supportive relationship with their mentors.
By offering tools to track progress, stay informed, and share feedback, the dashboard ensures that mentees are equipped to take ownership of their academic and personal growth, creating a more engaging and impactful mentoring experience.

Working of Mentor-Mentee Connect System

1) Admin Role

The admin manages the platform, overseeing user accounts, system settings, and resolving disputes. They monitor mentorship activities to ensure smooth operations and review feedback to maintain the quality of mentorship sessions
The admin plays a crucial role in managing the platform, overseeing user accounts, and configuring system settings to ensure smooth operation. They actively monitor mentorship activities, addressing any disputes or issues that arise to maintain a positive and productive environment for both mentors and mentees. Additionally, the admin reviews feedback submitted by participants, using it to assess the quality of mentorship sessions and implement improvements as needed. This comprehensive oversight ensures the platform remains effective, user-friendly, and aligned with the program's goals.

2) Mentor Role

Mentors provide guidance, expertise, and support to mentees, helping them achieve their goals. They review and accept mentorship requests, schedule sessions, and track mentee progress. Mentors also offer constructive feedback and share valuable insights to foster mentee growth.
The mentor serves as a guide, offering valuable support, expertise, and encouragement to mentees throughout their academic journey. They are responsible for tracking mentees' marks and attendance, ensuring a clear understanding of their academic performance. By closely monitoring mentee progress, mentors provide constructive feedback tailored to individual needs, helping students identify areas for improvement and celebrate their achievements.

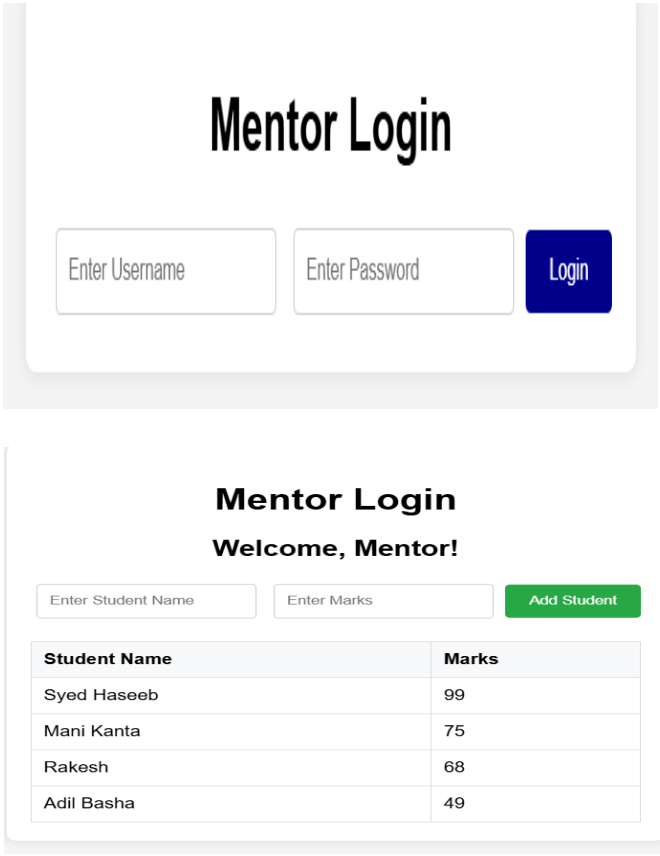


Figure 3:Mentor Dashboard Page

3) Mentee Role

Mentees seek guidance and learning opportunities by connecting with mentors who match their goals. They actively participate in sessions, set achievable goals, and track their progress over time. Mentees also provide feedback to mentors, ensuring a productive and mutually beneficial mentorship experience.

The mentee actively seeks guidance and learning opportunities from their mentor, demonstrating a commitment to personal and academic growth. They initiate mentorship requests and engage enthusiastically in sessions, ensuring productive and meaningful interactions. By setting clear goals, tracking their own progress, and providing feedback to mentors, mentees take ownership of their development.

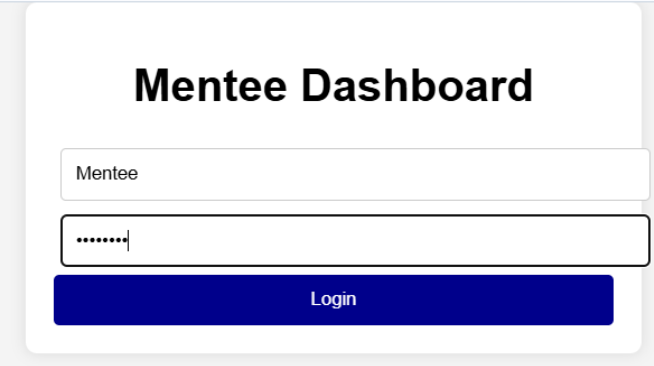


Figure 4:Mentee Login Page

The mentee logs into the dashboard using their credentials. Once logged in, they can view their marks in a structured table format, displaying subjects and corresponding scores. The data is dynamically populated, ensuring real-time updates as mentors input new marks. This allows mentees to track their academic progress and performance effortlessly.

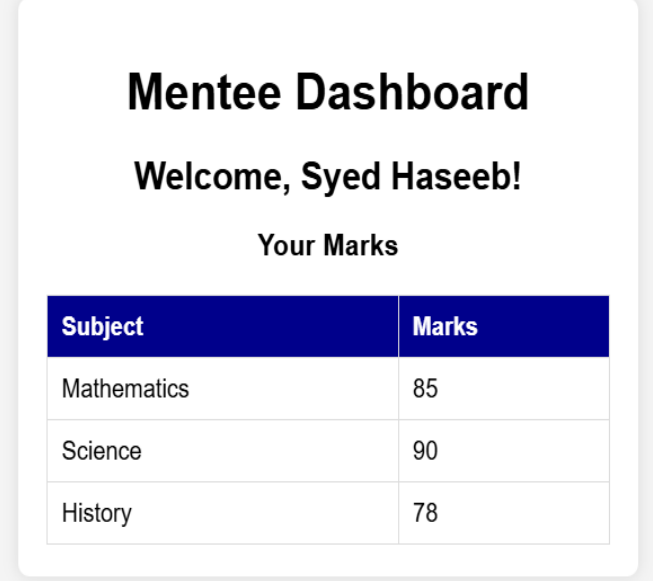


Figure 5: Mentee Dashboard

4) Feedback Section

The mentee can provide feedback for their mentor by rating them on a scale of 1 to 5 and adding comments about their experience. This feedback helps mentors understand their strengths and areas for improvement, ensuring a better mentorship experience. The feedback section is simple and user-friendly, allowing mentees to share their thoughts effortlessly.

Additionally, the feedback is stored securely and can be reviewed by admins to maintain the quality of mentorship. Mentees can also view their past feedback submissions to track their interactions with mentors over time. This feature fosters open communication and continuous improvement in the mentorship process.

a) Rating System:

Mentees can rate their mentors on a scale of 1 to 5, providing a quick and measurable assessment oftheir mentorship experience.

b) Written Feedback:

Mentees can add detailed comments to explain their rating, sharing specific insights about what worked well or areas for improvement.

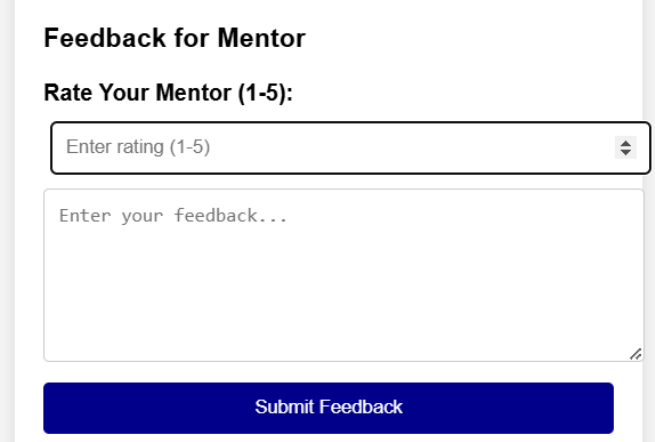


Figure 6: Sensor Mentor Feedback Section

A mentee submits feedback stating that their mentor is highly knowledgeable but sometimes unavailable for scheduled meetings. The system flags this feedback, and the mentor is notified. The mentor then adjusts their schedule to ensure better availability. Meanwhile, the program administrators notice a trend of similar feedback from other mentees and decide to implement a time management workshop for all mentors.

Feedback creates a continuous improvement loop, where mentors adapt their strategies, mentees see the impact of their input, and the program evolves to better meet the needs of all participants.

5) Announcement Section

The Announcement Section is a dedicated space designed to keep users informed about important updates, events, and reminders within the Mentor-Mentee Connect platform. It serves as a centralized hub where administrators can post timely information, such as upcoming mentorship sessions, deadlines, program changes, or motivational messages, ensuring that all participants stay engaged and up-to-date.

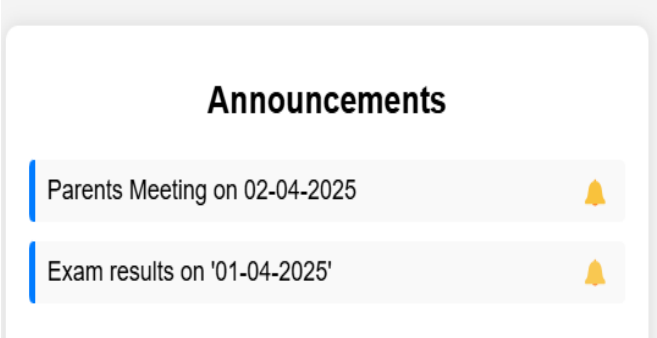


Figure 7:Announcements Section

Each announcement is displayed in a clean, user-friendly format, accompanied by a blinking bell icon to draw attention to new posts. The section is designed to be responsive, ensuring seamless accessibility across devices, from desktops to mobile phones. By providing a clear and organized way to share information, the Announcement Section enhances communication and fosters a collaborative environment for both mentors and mentees.

6) Submit Assignment Section

The "Submit Assignment" feature within the Mentee Module is designed to enable mentees to efficiently deliver completed work, such as certificates, documents, or projects, to their mentors for review and feedback. This functionality streamlines the submission process and ensures that both mentees and mentors can easily track and manage assignment-related interactions.

Assignment Upload/Link: Mentees are provided with an interface to upload assignment files directly to the platform. Alternatively, they can submit a link to an externally hosted file or project, accommodating various submission formats and file sizes.

The system automatically records key submission details, including the assignment title (if applicable), date, and time of submission.Mentees may have the option to add comments or notes to their submission, providing context or specific instructions for the mentor. Upon successful submission, the mentee receives a clear confirmation message

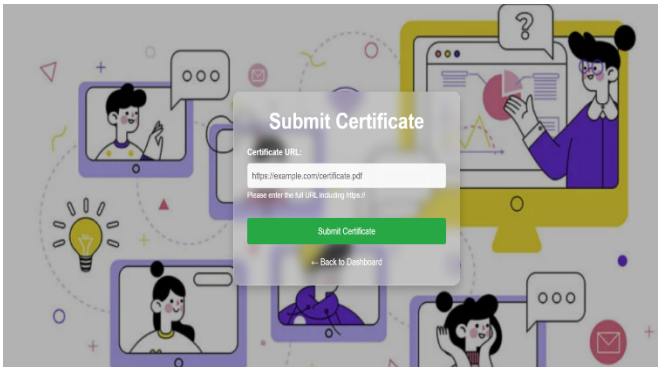


Figure 8: Submit Assignment Section

7) View Assignment Section

The "View Assignment" feature within the Mentor Module provides mentors with the necessary tools to efficiently access, review, and manage assignments submitted by their mentees. This functionality streamlines the assignment review process, facilitates timely feedback, and helps mentors track mentee progress.

Mentors can view a comprehensive list of all assignments submitted by their assigned mentees. This list may include key details such as the assignment title, mentee name, submission date and time, and submission status.Mentors can easily access individual submissions by downloading uploaded files or following provided links. The system ensures secure and organized access to submitted materials.

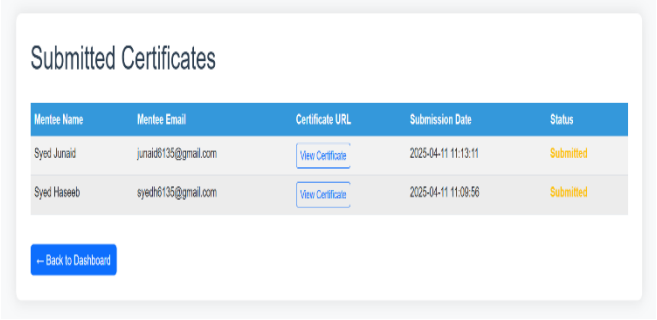


Figure 9: View Assignment Section

8) Application Layer

The application layer of the "Mentor Mentee Connect" system encompasses several critical functionalities designed to enhance user experience and streamline data management. Firstly, it incorporates a robust authentication mechanism that supports role-based login, allowing users to access the platform as mentors, mentees, or parents, ensuring tailored access and security. Additionally, the system features a dashboard with customized views, providing mentors and mentees with personalized interfaces that cater to their specific needs and roles within the platform. Furthermore, the application layer includes an Excel parser utility, which facilitates the seamless conversion of Excel-based data into MySQL records, enabling efficient data integration and management. These components collectively contribute to a user-friendly and efficient system for fostering mentor-mentee relationships.

9) Database Layer

The database layer of the "Mentor Mentee Connect" system is built on MySQL, a reliable and scalable relational database management system. This layer is responsible for storing and managing critical data, including user credentials for secure authentication, marks or progress records for mentees, announcements for communication, and meeting schedules to facilitate organized interactions between mentors and mentees. By leveraging MySQL, the system ensures efficient data storage, retrieval, and management, providing a robust foundation for the platform's operations and enabling seamless access to essential information for all users.

IV. SYSTEM MODULE

1) Mentor Dashboard

The *Mentor Dashboard* in the "Mentor Mentee Connect" system is designed to provide mentors with comprehensive tools to manage and support their mentees effectively. One of its key features is the ability to *upload marks*, wherementors canupload Excel sheets containing subject-wise marks. This data is parsed using PhpSpreadsheet, a powerful PHP library, and securely stored in the marks table for further analysis and tracking. Additionally, the dashboard enables mentors to track progress by visualizing mentee performance trends through graphical representations, such as subject-wise score trends, helping mentors identify areas for improvement and celebrate achievements.

Mentors can also *post announcements*, which are stored in the announcements table, allowing them to broadcast important messages or updates to mentees and parents. Furthermore, the dashboard includes a feature to *schedule meetings*, where mentors can add Google Meet links and timings, which are stored in the parent_meetings table, ensuring organized and seamless communication between mentors, mentees, and parents. Together, these functionalities empower mentors to monitor, guide, and engage with their mentees efficiently.

New chat

2) Mentee Dashboard

The *Mentee Dashboard* in the "Mentor Mentee Connect" system is tailored to provide mentees with easy access to their academic and engagement-related information. One of its primary features is the ability to *view marks*, where mentees can retrieve their subject-wise marks from the marks table, filtered by their unique email ID, ensuring personalized and secure access to their performance data. Additionally, the dashboard allows mentees to *check announcements*, displaying relevant messages and updates fetched from the announcements table, keeping them informed about important notices or events.

Furthermore, mentees can access *parent meeting* details, such as scheduled timings and Google Meet links, retrieved from the parent_meetings table, enabling them to stay updated on planned interactions between their mentors and parents. These features collectively ensure that mentees remain well-informed, engaged, and proactive in their academic journey.

V. CONCLUSION AND FUTURE SCOPE

The Mentor Connect System represents a comprehensive and innovative solution to address the evolving needs of college students in the digital age. By leveraging technology, this system bridges the gap between traditional mentoring models and the modern demands for accessibility, personalized guidance, and holistic support. By providing tools for communication, progress tracking, and feedback, the platform ensures that mentees receive personalized guidance while mentors can effectively share their expertise.

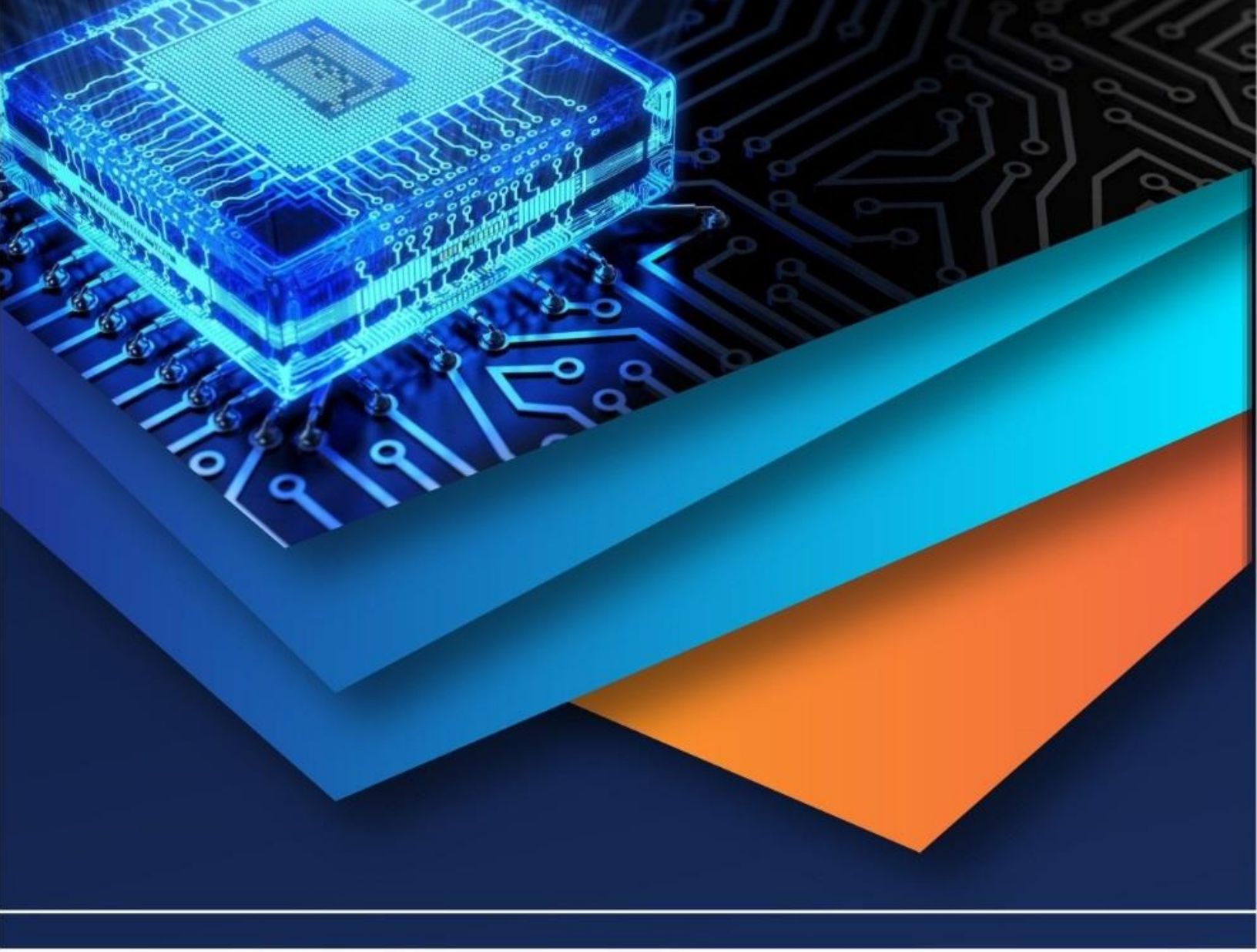
The system's user-friendly interface, secure data handling, and dynamic features make it a valuable tool for personal and professional growth.

The Mentor Mentee Connect project has immense potential to evolve into a web platform for mentorship, empowering individuals to achieve their goals through collaboration and guidance. With continuous improvements and innovative features, it can become a cornerstone for personal and professional development.

REFERENCES

[1] LinkedIn’s mentorship program connects professionals based on their career goals and expertise.Reference: https://www.linkedin.com/mentoring
[2] A global mentorship platform that matches mentors and mentees across various fields.Reference: https://www.mentorcity.com
[3] A free platform connecting small business owners with volunteer Reference: https://www.micromentor.org
[4] Keerthana G1 , Nivetha G2 , Jeyadharshini G3 1Assistant Professor, Department of Information Technology, Agni College of Technology, Chennai 2,3UG Student, Department of Information Technology, Agni College of Technology, Chennai

[5] "The Role of Mentorship in Career Development":A research paper discussing the impact of mentorship on professional growth .Reference: https://www.researchgate.net
[6] Designing Effective Mentorship Programs:An article on best practices for creating mentorship platforms.Reference: https://hbr.org
[7] Google's Mentorship Program:Learn how Google implements mentorship for employee development.Reference: https://careers.google.com



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)