



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES, DEHRADUN

Wookies: Mentor Allocation System

Report of the (Minor Project - I) in Semester V

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1. Abstract

Mentoring is a conventional method of transferring knowledge and ideas from a confirm professional in any society to an inexperienced member in the sector. Education sector has found mentoring as quiet effective tool since long back and with the advent of new technologies comes to an idea of mentoring allocation system. Instead of going to professors and finding your mentor is actually a very difficult task. So, from this, it will be very helpful for us to find the mentors of same interest. Mentor allocation system uses asynchronous communications to establish and support the relationship between Mentors and the students using virtual mode.

2. Acknowledgments

We would like to express our gratitude to Dr. Keshav Sinha for their support throughout the project. Additionally, we appreciate the dedication and hard work of our project team members.

3. Introduction

This project- the "Mentor Allocation System" allows mentors to the students based on their choice filling. Firstly, the professors need to register themselves. They are verified, and the professors need to upload their area of interest when every profession is done with it, the admin updates, and the number of students to be allotted under a particular Professor. Now the student asked to register on the website. The students need to fill out the Choice filling with which professor they want to work. After each student is done with it, the admin generates the list containing students along with their allotted Mentors. The students and professor get the confirmation with whom they must work. And the whole process is complete.

4. Literature review guidelines

Mentor allocation systems serve as connectors in educational institutions. Algorithms and techniques these systems employ, leverage mathematical and data-driven approaches for precise professor-student matches, factoring in professor expertise, student objectives, and compatibility. Numerous investigations underline the advantages of these systems, demonstrating their capacity to boost knowledge transfer, skill development, and career progression for Students. Professors gain leadership opportunities and personal growth through these relationships. Nonetheless, research acknowledges challenges like privacy, data security, and the necessity for transparent Professor-Student communication, emphasizing the importance of voluntary and mutual beneficial mentorships.

1. Administrator Module: The administrator manages mentor and student details who register with the system, by creating their profiles. Based on profiles, mentors are assigned to students. The administrator also manages details of countries, universities, and colleges involved in the system. The administrator also maintains domains or areas along with course details. The administrator will generate reports with appropriate details, as and when necessary.

2. Mentors Module: There would be a master mentor who manages and coordinates other mentors. Each mentor will be assigned tasks related to a particular domain. The mentor is responsible for a group of students in a specific area. Each mentor manages tutorials and courseware, manages forums, posts achievements and stories of successful women, and chats online with the students. A mentor can view and update one's personal details. A mentor also conducts online tests[1].

3. Student Module: A student must register and complete admission formalities before one can begin accessing the information. A student can update and view one's personal details. A student can interact with the assigned mentor, participate in forums, post and view success stories, take tests, and post and view achievements

5. Problem statement

The main motive is to create a digital platform that enables professors to register themselves and add their areas of interest. Also, the system should allow students to register, and add their area of interest or topic on which they are willing to get mentored. Then a final list is generated that matches students with mentors. This system aims to boost the allocation process, ensuring students and professors are paired effectively, enhancing the academic experience for both parties.

6. Project Objective

The objectives of this project are to identify the most suitable mentors by aligning the area of interest between students and professors. It aims to streamline the mentor allocation process, simplifying it for both students and the organization, and reducing administrative complexities. Furthermore, the project's goal is to create an environment that helps students' growth and development, promoting meaningful mentor-student relationships and enhancing the overall educational experience.

7. Methodology Guidelines

- **Registration and verification:** Professors and students register on the platform with their credentials. The system verifies their information and academic qualifications.
- **Area of interest submission:** Professors upload their areas of interest and expertise, providing a comprehensive database for mentorship matching.
- **Choice filling:** Students choose their preferred mentors, ranking them in order of preference.
- **Matching algorithm:** The system uses an algorithm to match students with professors based on their preferences and areas of interest.
- **List generation:** There is a generation of a final list pairing students with allocated mentors.
- **Confirmation:** Both students and professors receive confirmation of their assigned matches.

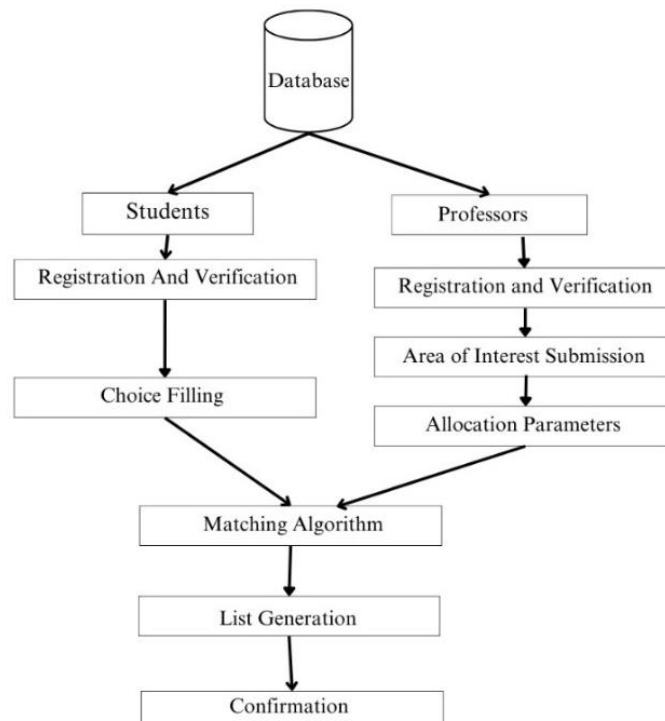


Figure 1: Methodology Chart

8. Conclusions and future work

In conclusion, the Mentor Allocation System serves as a crucial tool in streamlining the mentorship process in educational institutions. The project facilitates efficient pairing of mentors and students based on their areas of interest, optimizing the transfer of knowledge and fostering meaningful connections. The asynchronous communication mode employed in this system ensures flexibility and accessibility, transcending geographical boundaries[2].

The systematic approach of registration, verification, area of interest submission, choice filling, and the matching algorithm contributes to a transparent and effective mentor allocation process. By providing a digital platform for professors and students to connect based on shared interests, the system enhances the overall educational experience for both parties involved.

Future Work

As technology continues to evolve, the Mentor Allocation System can undergo further enhancements and expansions. Some potential areas for future work include:

Integration of AI and Machine Learning: Incorporating advanced algorithms and machine learning models can improve the accuracy of mentor-student matches. These technologies can analyze historical data to predict successful pairings and recommend mentors based on evolving criteria.

User Feedback and Evaluation: Implementing a feedback mechanism where students and mentors can provide reviews and ratings can help refine the matching algorithm. Continuous evaluation ensures the system adapts to the changing needs and preferences of users.

Mobile Application Development: Creating a mobile application version of the Mentor Allocation System can enhance accessibility, allowing users to manage their mentorship relationships on the go.

Expanding to Industry Mentorship: The system can be extended to facilitate mentorship between students and professionals in the industry, providing students with real-world insights and networking opportunities.

Enhanced Security Measures: Given the sensitivity of academic and personal information, future iterations of the system should focus on implementing robust security measures to protect user data and ensure privacy.

In summary, the Mentor Allocation System lays a foundation for effective mentorship in the educational landscape. By incorporating cutting-edge technologies and responding to user feedback, the system can continue to evolve, providing a dynamic platform for fostering mentor-student relationships and contributing to the overall growth and success of the academic community.

9. Example Illustration

Scenarios

1. Registration and Verification:

Professors specializing in Computer Science register on the Mentor Allocation System, providing their credentials and academic qualifications.

The system verifies the information and approves the registration of qualified professors.

2. Area of Interest Submission:

Approved professors upload their areas of interest and expertise within Computer Science. This could include fields like artificial intelligence, data science, software development, etc.

3. Choice Filling:

Students majoring in Computer Science register on the platform. During registration, they fill out a form indicating their specific areas of interest within the discipline.

Students rank their preferred professors based on the areas of interest submitted by the professors.

4. Matching Algorithm:

The Mentor Allocation System employs a sophisticated matching algorithm that takes into account the preferences of both students and professors.

The algorithm considers the compatibility of areas of interest, ensuring a meaningful and productive mentor-student relationship.

5. List Generation:

After processing the data, the system generates a final list pairing each student with an allocated mentor. This list is based on the preferences and expertise of both parties.

6. Confirmation:

Both students and professors receive confirmation of their assigned matches through the system. They can view details of their mentorship relationship, including contact information and scheduled interactions.

Example Result:

Student A, interested in artificial intelligence, is paired with Professor X, who has expertise in the same field.

Student B, focused on software development, is matched with Professor Y, a seasoned software engineer.

Benefits:

The Mentor Allocation System ensures that students are connected with mentors who align with their academic and career interests.

Professors, in turn, can engage with students who are genuinely interested in their areas of expertise, fostering a more fulfilling mentorship experience.

This example illustrates how the Mentor Allocation System facilitates a tailored and efficient mentorship process, benefitting both students and professors in the field of Computer Science.

10. What exactly is done ?

In a Mentor Allocation System, the primary goal is to efficiently match mentors with mentees (students) based on their areas of interest, expertise, and preferences. Here's a breakdown of the key steps and activities typically involved in such a system:

Registration:

Professors/Mentors and students register on the platform by providing their relevant details, such as personal information, academic qualifications, and professional experience.

Verification:

The system verifies the information provided during registration to ensure the authenticity and eligibility of mentors and students.

Area of Interest Submission:

Mentors specify their areas of expertise or interest, indicating the subjects, fields, or topics they are knowledgeable in and willing to mentor students on.

Choice Filling:

Students express their preferences by choosing mentors based on their areas of interest. They might rank their preferences or select specific mentors they wish to work with.

Matching Algorithm:

The system employs a matching algorithm that takes into account the preferences of both mentors and students. This algorithm aims to create optimal pairings by considering factors such as shared interests, expertise, and any additional criteria.

List Generation:

Using the matching algorithm, the system generates a final list that pairs each student with an allocated mentor. This list is based on the preferences and expertise of both parties.

Confirmation:

Both mentors and students receive confirmation of their assigned matches through the system. This confirmation includes details about their respective mentorship relationships, such as mentor names, contact information, and any scheduled interactions.

Communication and Collaboration:

The system facilitates ongoing communication between mentors and students. This may include virtual meetings, messaging platforms, or other tools that support asynchronous communication.

Monitoring and Reporting:

Administrators or system managers monitor the overall functioning of the mentor allocation system. They may generate reports on the effectiveness of mentorship programs, mentor-student engagement, and other relevant metrics.

The Mentor Allocation System aims to streamline the process of connecting mentors and students, enhancing the quality and effectiveness of mentorship relationships within educational institutions or professional settings. The specific features and functionalities may vary based on the goals and design of the system.

11. References/ Bibliography

[1]Johnson, A. (Year). Mentorship Models: A Comprehensive Review. Publisher Name. ISBN.

[2]Brown, C. (Year). "Technology-Enhanced Mentor Allocation Systems." International Conference on Educational Technology