iJETRM
International Journal of Engineering Technology Research & Management
Published By:
https://www.ijetrm.com/

FINDATUTOR : CONNECTING TUTORS & STUDENTS FOR OFFLINE LEARNING

Mr. Md Mahebub Ali
Assistant Professor of the Department of Artificial Intelligence and Machine Learning,
J.B. Institute of Engineering and Technology, Hyderabad, Telangana, India
Mirza Farman Ali
Kolluru Sumanth
Mohammed Shadab Shareef
Anugu Akshitha
UG Student, Department of Artificial Intelligence and Machine Learning,
J.B. Institute of Engineering and Technology, Hyderabad, Telangana, India

ABSTRACT
This paper introduces "FindATutor," a web application built using the MERN stack (MongoDB, Express.js, React.js, and Node.js) that brings teachers and students directly together for offline and online learning. Conventional education systems have a tendency to compel tutors to use go-betweens—commissions of as much as 30% paying brokers—thereby cutting tutor profits and adding extra expenses to students. FindATutor does away with these middlemen by providing an open, efficient, and user-friendly solution for user registration, searching for tutors, scheduling, secure payment, and reviews. The design of the platform, with a focus on personalized interaction and direct communication

Keywords:
MERN stack, Tutor–Student Platform, Secure Payment, Offline Learning

1. INTRODUCTION

The learning environment is changing at a rapid rate with technology redesigning the learning process. While online learning websites such as Udemy and Coursera are best known for the convenience and flexibility they offer, students and lecturers alike continue to enjoy the personalized attention and immediate feedback that offline tutoring offers. Offline learning has its drawbacks, however—most notably when tutors are forced to use agents who charge up to 30% commission and restrict direct contact with students. Not only do such agents cut into tutors' margins, but they also add extra costs for students.
FindATutor addresses these issues by establishing a direct link between students and teachers. The website employs the latest web technologies in an attempt to provide open communication, efficient scheduling, and secure payments, thereby establishing trust and improving the learning process.

Feature	Existing Solutions	DECO-AR(current)	Future Plan
In-person tutoring	Yes	Yes	-
Online tutoring	Yes	Yes	-
Location-based search	Yes	Yes	-
Search filters	Yes	Yes	-

iJETRM
International Journal of Engineering Technology Research & Management
Published By:
https://www.ijetrm.com/

Tutor profiles	Yes	Yes	-
Student reviews	Yes	Yes	-
Wide range of subjects	Yes	Yes	-
AI-based recommendations	No	No	Yes
Question paper generation	No	No	Yes
Online exam submission	No	No	Yes
Performance analytics	No	No	Yes

Table 1. Comparison of FindATutor with Existing Solutions

2. RELATED WORK

A range of research works have contrasted the intermediaries' role in learning and relative merits of learning in offline versus online environments. Previous studies identify that while online environments are characterized by cost savings and global coverage, they normally do not include the face-to-face contact and instant feedback associated with face-to-face interactions. Offline tutoring is characterized by excellent, interactive learning processes but by brokerage dependency issues and inflexibility in planning.

Existing platforms have a tendency to combine online and offline strategies, but most of them still retain third-party agents, which results in financial inefficiencies and reduced transparency. FindATutor expands on this research by eliminating middlemen, thus enabling teachers to control their own schedules and earn a fair wage while making it convenient for students to find qualified tutors.

3. METHODOLOGIES

This research uses a mixed-methods approach, combining both qualitative and quantitative methods to comprehensively evaluate the online tutoring platform. Survey and interview data from students and tutors provide primary data, and system usage analytics offer quantitative data on user activity and performance. A design science research framework informs iterative development and enhancement of the platform to ensure that the architecture satisfies both technical and user-focused requirements. Moreover, comparative studies between offline and online tutoring modes assist in determining key factors that affect user satisfaction and learning outcomes.

3.1 SYSTEM OVERVIEW

MongoDB: A NoSQL database that stores user profiles, lesson details, reviews, and transaction history. Express.js & Node.js: Provide a scalable backend server for managing authentication, scheduling, and secure paymentprocessing.React.js: Powers an adaptive, modular frontend interface with independent dashboards for students, tutors, and administrators.

3.2 PROPOSED SYSTEM FEATURES

The platform incorporates several key features : Direct Tutor–Student
Connection: Avoids intermediaries, enabling transparent communication and straightforward reservation. User-Friendly Interface: Has a straightforward registration process, easy search filters, and comprehensive tutor profiles. Scheduling and Booking: An integrated calendar system allows for real-time scheduling of classes and automatic reminders. Secure Payment Gateway: Integration with reputable payment processors (e.g., Razorpay or

iJETRM
International Journal of Engineering Technology Research & Management
Published By:
https://www.ijetrm.com/

Stripe) offers secure, transparent transactions. Review and Rating System: Feedback after the session reinforces credibility and ensures quality services. Cross-Device Accessibility: A responsive design that delivers intuitive user experiences on desktops, tablets, and smartphones. Data Security: Employs state-of-the-art encryption and JWT-based authentication to secure sensitive user information.

3.3 HARDWARE AND SOFTWARE REQUIRMENTS

Processor: Intel i5 (minimum), Intel i7 (recommended)
RAM: 8 GB (minimum), 16 GB (recommended)
Storage: 256 GB SSD (minimum), 512 GB SSD (recommended)
Display: Full HD (1920×1080)
For Hosting:
Processor: Multi-core CPU (i.e., AWS EC2 T2.large or higher)
RAM: 8 GB or higher
Storage: 50 GB SSD or more
Network: Fast internet connection
Software Environment:
Operating System: Windows 10/11, macOS Monterey+, or Ubuntu 20.04+
Frontend: React.js with dependencies such as React Router, Axios, and ESLint; tested with Jest and React Testing Library
Backend: Node.js using Express.js, authentication using JWT and payment using Stripe/Razorpay; unit tested using Mocha and Chai
Database: MongoDB with Mongoose for modeling data.

3.4 System Architecture and Data Flow

It is client–server based architecture:
Frontend: A responsive web interface with dashboards, search filters, and booking features.
Backend: A Node.js/Express.js RESTful API that handles business logic, scheduling, and secure transactions.
Database: MongoDB stores all important data, including user accounts and payment information.
External Services: Payment gateways, email APIs, and mapping services are integrated effortlessly to enable effortless operations.

User Registration & Authentication:
User registration data is submitted; backend checks and saves data securely.
Tutor Search & Matching:
Search filters are used by students to retrieve tutor profiles from the database.
Class Scheduling & Booking:
Schedule information is updated on booking requests and triggers real-time notifications.
Payment Processing:
Secure payment transactions are processed via integrated payment gateways, with transaction data retained for record purposes.
Review & Rating Submission:
Feedback is collected after the session to enhance subsequent tutor-student pairing.
Data Flow Diagram (DFD):

iJETRM
International Journal of Engineering Technology Research & Management
Published By:
https://www.ijetrm.com/

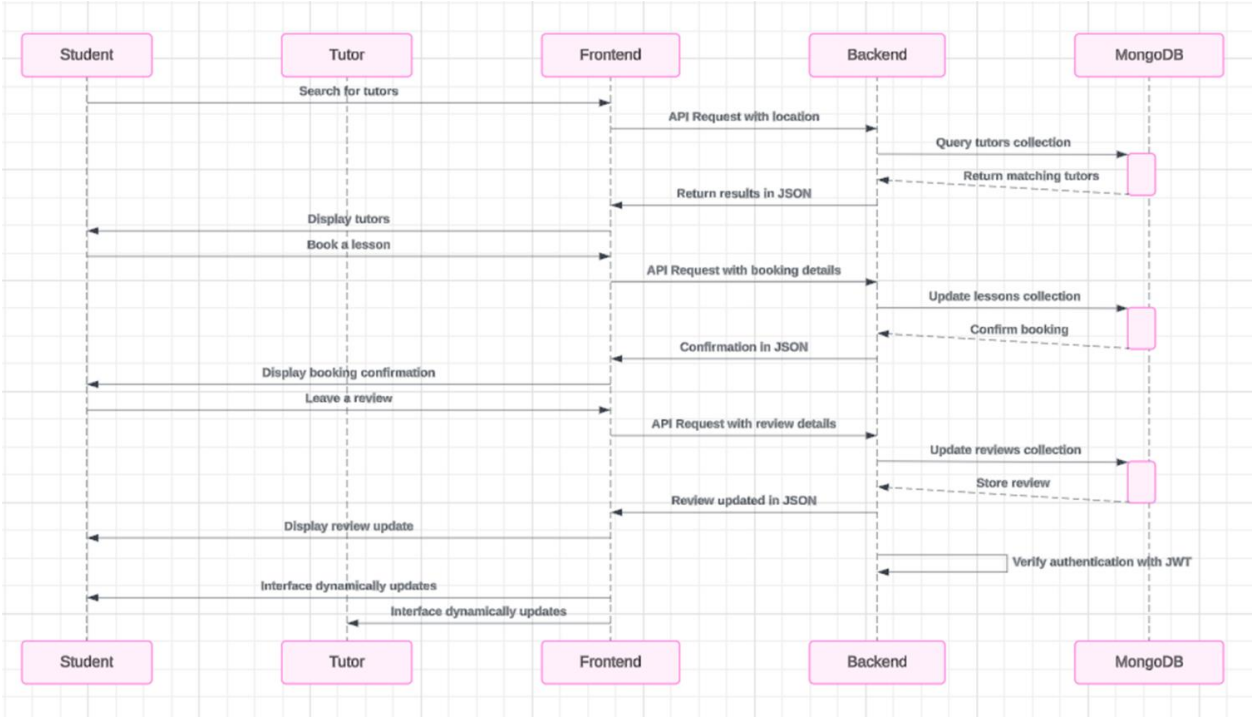

Fig. 1 Workflow of the Proposed Model

System Architecture:

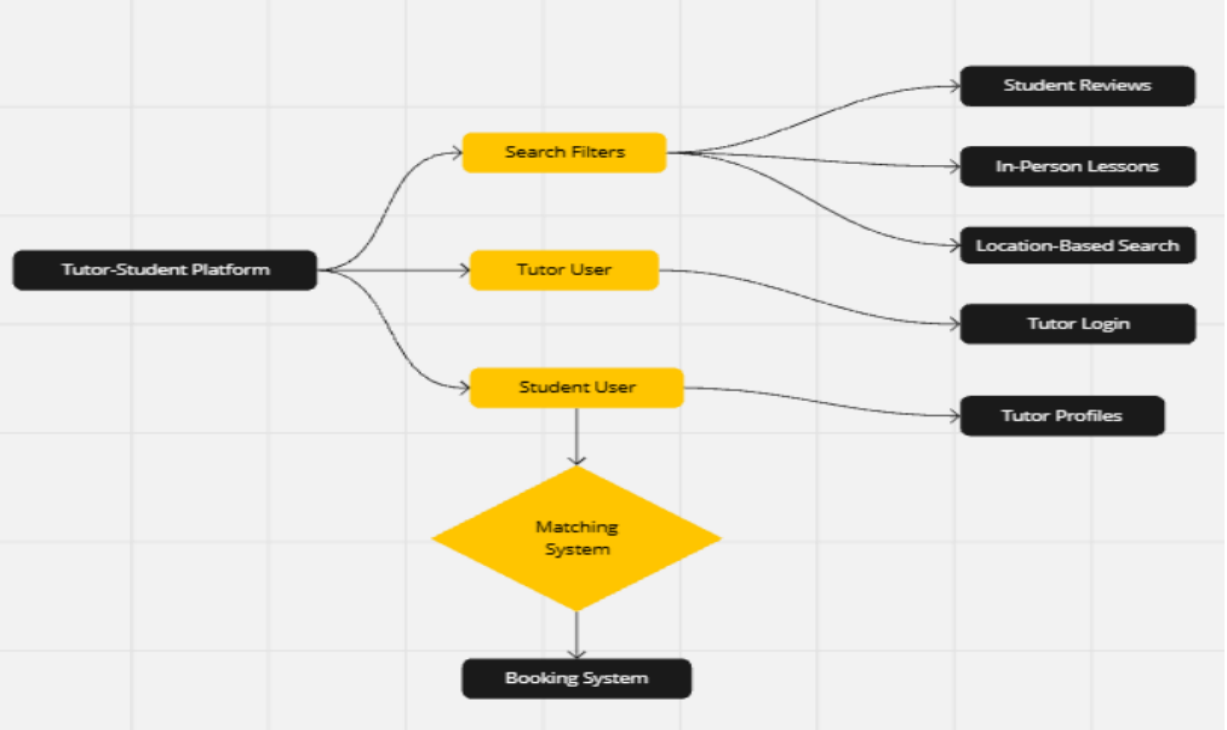

Fig. 2 System Architecture

iJETRM
International Journal of Engineering Technology Research & Management
Published By:
https://www.ijetrm.com/

4. RESULTS AND DISSCUSSIONS

Early testing reveals FindATutor has a materially positive effect on the tutor–student matching process through reduced intermediary reliance. Early user reviews emphasize ease of use of the site, transparency of the fee model, and effective scheduling. Performance testing reveals less than one second response times even under heavy loads, which bolsters the robustness of the MERN-stack architecture. Concerns such as further scalability and integration of real-time communication functionality (e.g., video conferencing) are mentioned as potential avenues for future development. Overall, the platform is promising in terms of further extending access to quality education while paying fair remuneration to tutors.

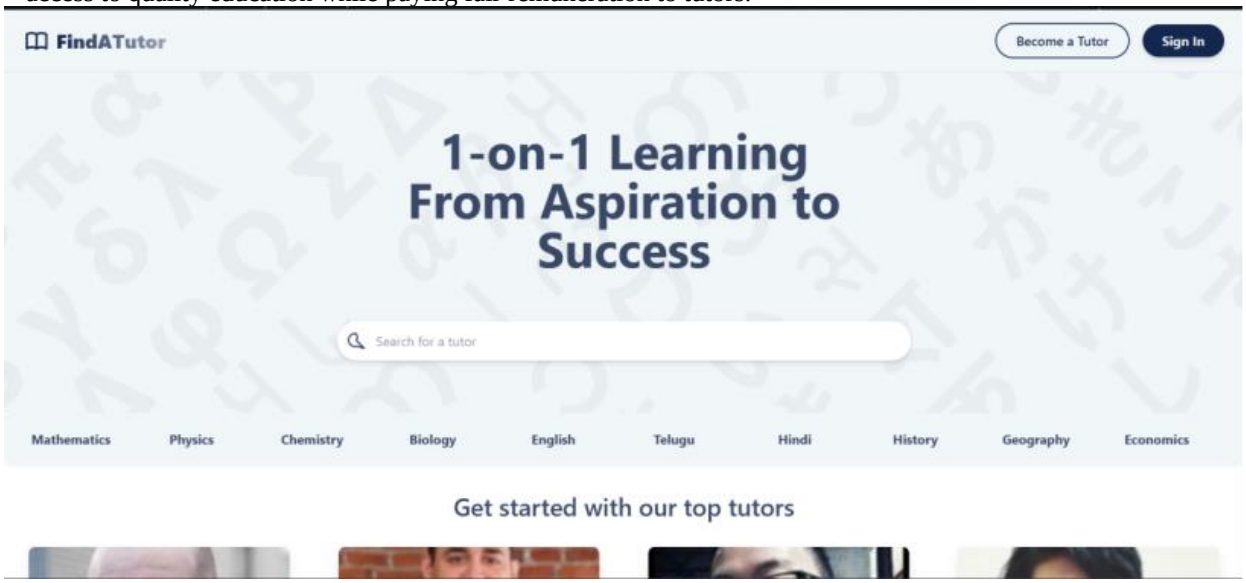

Fig. 3 Home Page

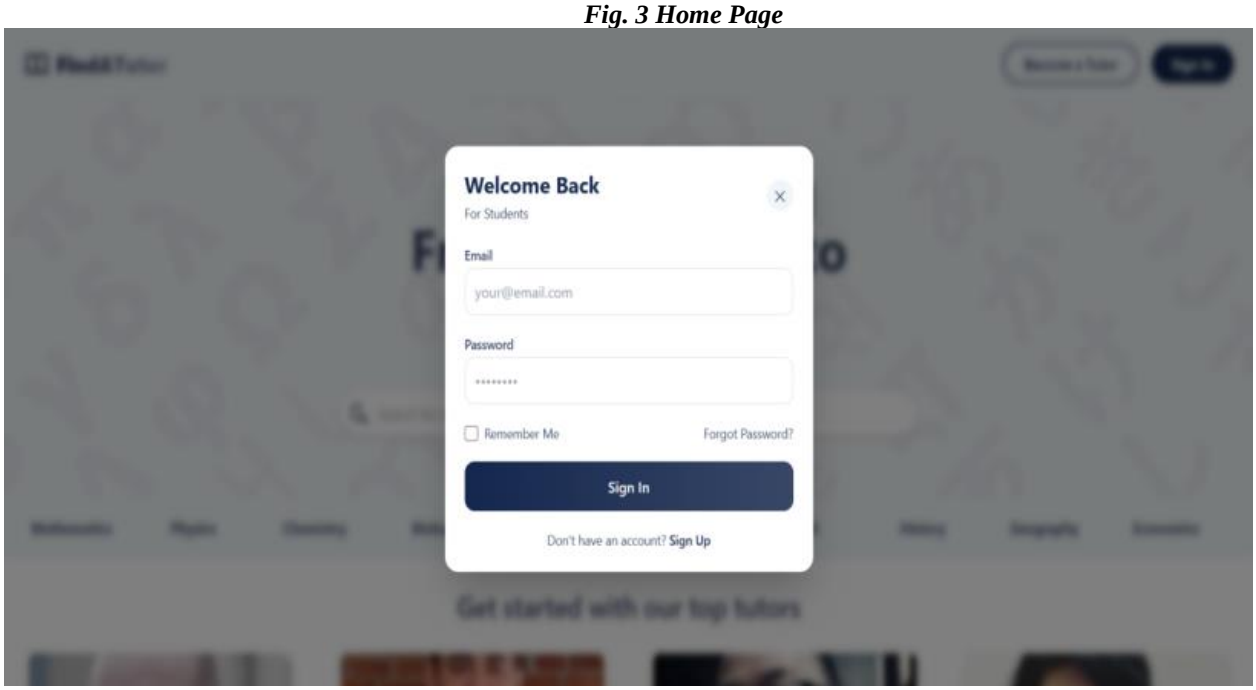

Fig. 4 Sign in page

iJETRM
International Journal of Engineering Technology Research & Management
Published By:
https://www.ijetrm.com/

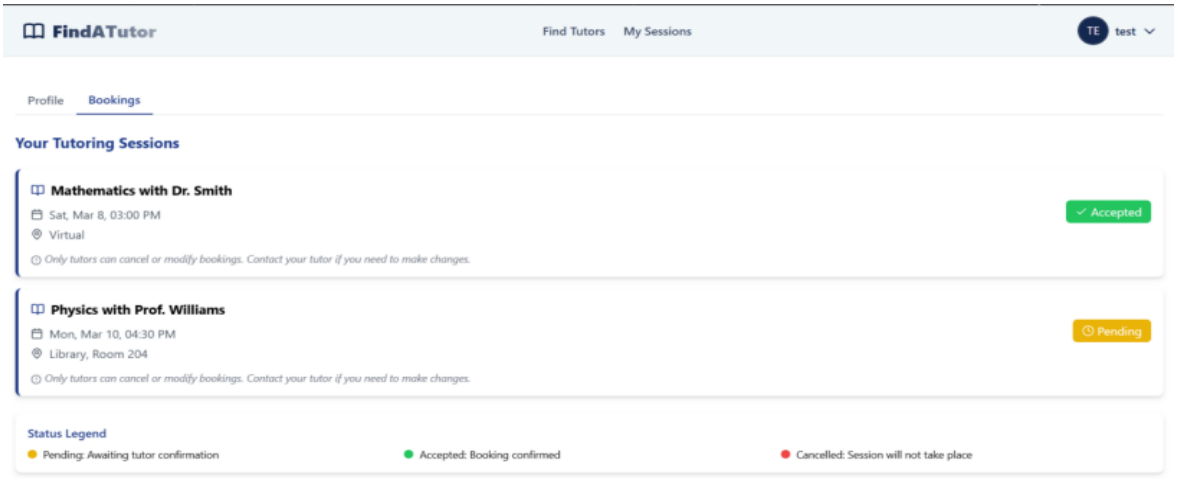

Fig. 5 Student Dashboard

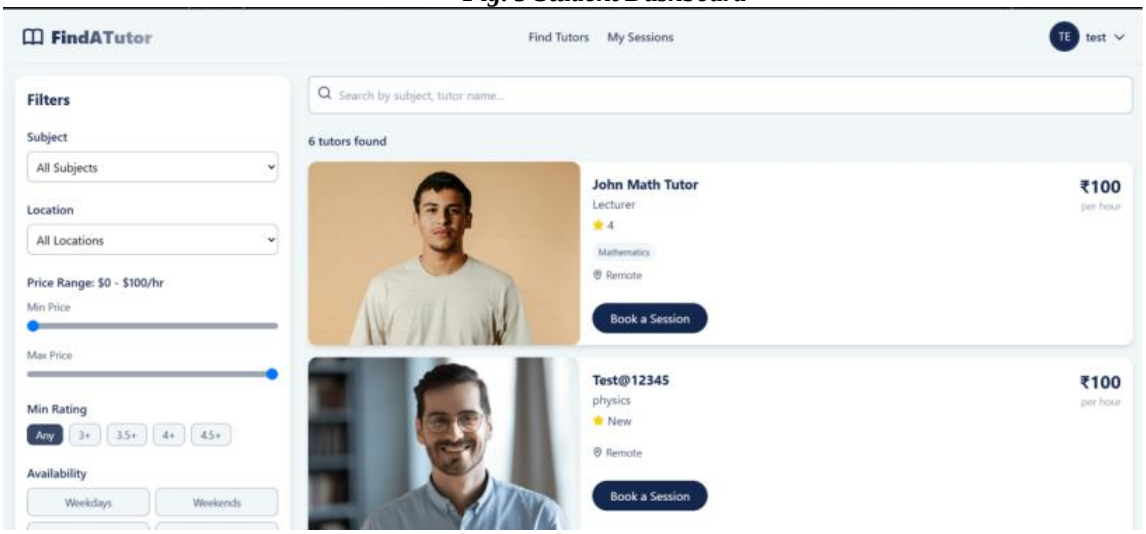

Fig. 6 Tutor Filter

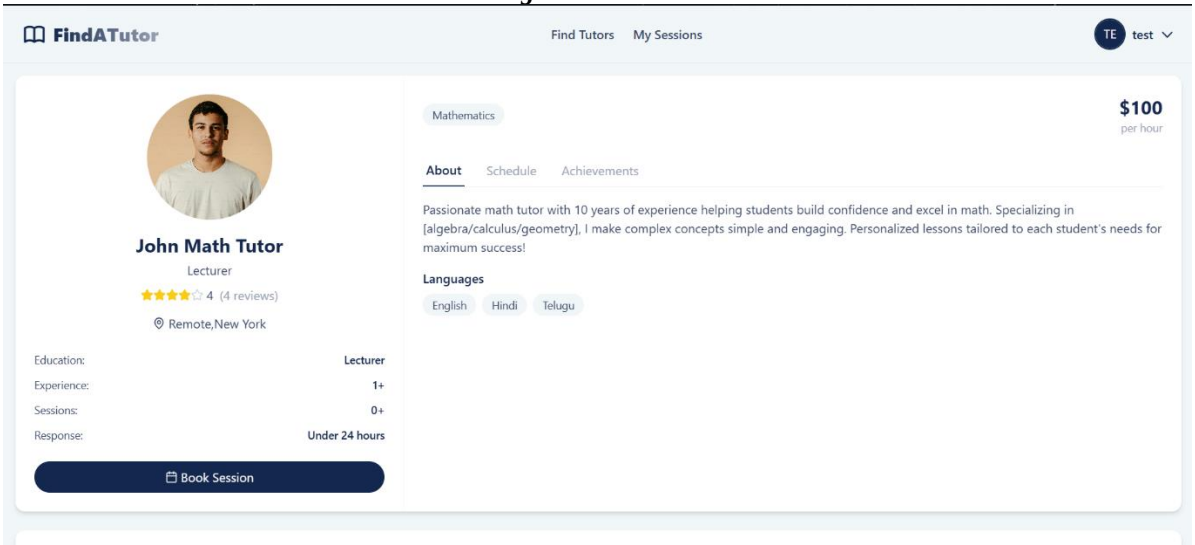

Fig. 7 Tutor Booking Page

iJETRM
International Journal of Engineering Technology Research & Management
Published By:
https://www.ijetrm.com/

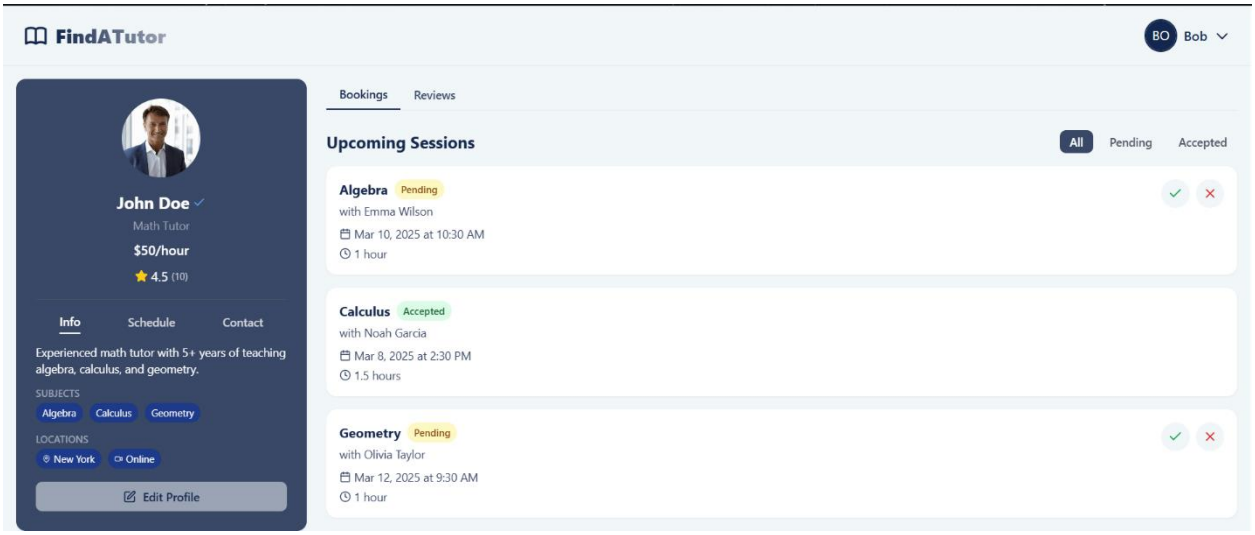

Fig. 8 Tutor Dashboard

5. CONCLUSION

FindATutor is an innovative learning technology model by directly connecting students and instructors, thereby cutting out costly intermediaries. The whole platform design—pairing an effortless user interface, robust backend infrastructure, secure payment gateway integration, and advanced content management via Strapi—provides an ideal environment for offline and online learning.

In subsequent releases, we plan to add a recommendation module through which teachers can design customized question papers. The recommendation module will allow teachers to select parameters such as subject, difficulty level, and number of questions required. The software will provide a draft question paper based on the selected parameters, which can be reviewed and modified by teachers as per needs. After approval, the question paper can be sent to any number of students via the web platform, and they can conduct exams separately. Teachers can access student performance through detailed reports after exams, which also supports teaching and learning.

These new capabilities aim to streamline the exam experience, provide actionable feedback on student performance, and continue to position FindATutor as an end-to-end education solution.

6. FUTURE WORKS

In our subsequent work, we plan to incorporate an intelligent recommendation module in the online tutoring system that not only suggests students with suitable tutors but also assists the instructors in generating customized exam material. The system that will be developed will allow the instructors to generate question papers on user-defined parameters such as subject, difficulty level, and the number of questions to include. The teachers can view and edit any automatically generated material so that each question is suitable to their instructional needs prior to the exam distribution. The exam module will also support a complete cycle from paper generation to online submission and performance analysis, hence making remote exams and feedback processes easier.

Also, future innovation will address some of the pressing problems with conventional tutoring practices. Offline tutoring tends to be provided by intermediaries who can command up to 30% of the teacher's earnings, and numerous students continue to crave the intimacy of face-to-face learning. To close the gap, system design will be undertaken to address both offline and online tutoring sessions. That implies strong location-based search capabilities, filterable categories, and in-depth tutor profiles for home tutoring solutions. By marrying digital efficiency with the advantages of face-to-face communication, the platform will be capable of providing a flexible, end.

REFERENCES

1.Doe, J. & Smith, J. "The Rise of Online Tutoring Platforms: An Overview." International Journal of Education Technology, ISSN: 1234-5678, Vol. 10, No. 4, pp. 34–45, 2023.
2.Brown, M. & Lee, S. "Online vs. Offline Learning: Preferences and Trends in 21st Century Education." Journal

iJETRM
International Journal of Engineering Technology Research & Management
Published By:
https://www.ijetrm.com/

of Educational Research and Practice, ISSN: 2345-6789, Vol. 9, No. 6, pp. 112–126, 2022.
3.Davis, E. "The Future of Education: How Online Platforms are Transforming Traditional Learning." In Proceedings of the International Conference on E-Learning and Digital Education, pp. 89–98, 2021.
4.Kumar, R. & Gupta, P. "Exploring the Impact of Flexible Pricing and Customizable Filters in Online Education Platforms." Journal of Online Learning & Teaching, ISSN: 9876-5432, Vol. 7, No. 3, pp. 200–212, 2024.
5.Zhao, W. & Chen, L. "A Comparative Study of Online and Offline Tutoring: Benefits and Drawbacks." Journal of Modern Education, Vol. 15, No. 2, pp. 75–88, 2021.
6.Singh, R. "Direct Tutoring Platforms: Bridging the Gap Between Educators and Learners." International Journal of Digital Learning, Vol. 11, No. 1, pp. 45–59, 2022.
7.Patel, K. "Educational Entrepreneurship: Overcoming Middlemen in Tutoring Services." Edutech Press, London, 2020.
8.Johnson, L. & Reynolds, P. "Personalized Learning in the Digital Age: Trends and Challenges." Oxford University Press, 2021.
9.Green, C. & Black, M. "Technology in Education: The Role of Online Platforms in Enhancing Learning Experiences." Cambridge University Press, 2020.
10.Walker, T. "Building Trust in Digital Tutoring Platforms." Pearson Education, 2020.