Sikhado –
A Secure Platform for Connecting Great Learners and Great Minds Alike

A GROUP PROJECT SUBMITTED FOR UNDERGRADUATE

MINI PROJECT

BY
Alyssa Diona Rego (2341602)
David Abraham (2341620)
Pranav M Pradeep (2341651)

Under the supervision of
Dr RESMI K R

Project Report submitted in partial fulfilment of the requirements of V semester BCA, CHRIST (Deemed to Be University)

September - 2025

CERTIFICATE

This is to certify that the document titled "*Transforming Tourism: The Impact of AI Technologies on Customer Experience, Operations, and Sustainability"* is a bona fide record of work done by **Alyssa Diona Rego (2341602), David Abraham (2341620), Pranav M Pradeep (2341651)** of CHRIST (Deemed to be University), Bangalore, in partial fulfilment of the requirements of V Semester BCA during the year 2025.

Head of the Department **Project Guide**

_____ _____

Valued by:

1.

2.

3.

Name: Alyssa Diona Rego, David Abraham, Pranav M Pradeep
Register Number: 2341602, 2341620, 2341651
Examination Centre: CHRIST (Deemed to be University)
Date of Exam: 27th Sep 2025

ACKNOWLEDGEMENT

First of all, we thank God Almighty for his immense grace and blessings showered on us at every stage of this work. We are grateful to our respectable Head of the Department, Department of Computer Science, CHRIST (Deemed to be University), Dr Rupali Sunil Wagh, for providing the opportunity to take up this project as part of my curriculum, and Associate HOD, Department of Computer Science, CHRIST (Deemed to be University), Dr Gobi R, for supporting in all project related activities.

We also pay our gratitude to the Coordinator, Department of Computer Science, CHRIST (Deemed to be University) Dr Sagaya Aurelia P. for her support throughout.

We are grateful to our project in-charge, Assistant Professor, Department of Computer Science, CHRIST (Deemed to be University), Dr. Vijay Arputharaj J, who was always there to support us through the thick and thin of our project and was always present whenever we needed a helping hand and a guide. Thank you so much for your continuous support and presence whenever needed.

We sincerely thank our guide, Dr. Resmi K.R., Assistant Professor, Department of Computer Science, CHRIST (Deemed to be University), for her unwavering support throughout the course of our project. Her constant guidance, availability, and encouragement were invaluable, and we are deeply grateful for her presence whenever we needed assistance.

We would also like to thank our Alumni evaluator, whose knowledge and guidance benefited us in making the changes as per the industry requirements. Thank you so much for your support.

We express our sincere thanks to all faculty members and staff of the Department of Computer Science, CHRIST (Deemed to be University), for their valuable suggestions during the course of this project. Their critical suggestions helped us to improve the project work.

Last but not least, we would like to thank everyone who is involved in the project directly or indirectly.

ABSTRACT

The academic networking domain faces challenges in providing secure, trusted, and institution-oriented platforms where students, professors, and alumni can collaborate meaningfully. Existing professional and freelancing platforms such as Fiverr, Upwork, and LinkedIn Learning are not tailored for academic ecosystems, often lacking institutional verification, structured mentorship, and controlled economic opportunities. This project introduces Sikhado, a secure, institution-verified platform designed to connect learners, educators, and alumni within a closed academic environment. The platform integrates core modules for micro-job/task sharing, mentorship, portfolio management, request-based learning support, and secure financial transactions, ensuring transparency and credibility through role-based access and institutional verification.

A comparison with existing professional networking and freelancing platforms highlights Sikhado's unique focus on trust, internal collaboration, and skill development within verified institutions. The system is designed using frontend technologies such as HTML, CSS, JavaScript and Bootstrap, supported by backend frameworks like PHP with MySQL databases, and deployed via secure AWS infrastructure. Payment integration through Net Banking ensures safety using an escrow-style transaction system. Aligned with SDG Goal 4 (Quality Education) and SDG Goal 8 (Decent Work and Economic Growth), Sikhado fosters inclusive, lifelong learning, skill-sharing, and sustainable economic opportunities for students within academic circles.

By combining secure authentication, collaborative tools, and progress tracking features, the platform bridges the gap between learning and earning while promoting a culture of mentorship, entrepreneurship, and academic excellence. This paper also discusses the expected benefits, functional requirements, and implementation challenges in realising Sikhado as a transformative solution for academic institutions worldwide.

Content

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

The rapid expansion of digital technologies has transformed the way individuals acquire knowledge, share skills, and build professional networks. Online platforms dedicated to collaboration and learning have become integral to both academic and professional ecosystems, offering opportunities that extend beyond traditional classroom boundaries. These platforms enable individuals to connect with peers, mentors, and professionals across diverse disciplines, fostering an environment of continuous growth and engagement.

In academic settings, the need for structured channels of interaction is particularly significant. Students seek opportunities to complement their theoretical knowledge with practical exposure, while educators and alumni play a vital role in providing guidance, mentorship, and industry insights. Platforms that support skill-sharing and academic networking serve as catalysts in this process by creating spaces where academic communities can exchange expertise, collaborate on projects, and access learning resources tailored to their needs.

Such platforms also encourage the development of soft skills, entrepreneurial thinking, and interdisciplinary collaboration. By integrating knowledge exchange with mentorship opportunities, they not only contribute to academic excellence but also enhance career readiness. Furthermore, the secure and organized nature of these ecosystems ensures trust, accountability, and long-term engagement, which are crucial in educational environments.

This paper focuses on the development of such a platform within an academic context, outlining its objectives, methodology, and potential impact on students, educators, and alumni.

1.1 Problem Statement

With the rise of digital platforms, students increasingly rely on online spaces for skill development, freelancing opportunities, and professional networking. While platforms such as

Fiverr, Upwork, and LinkedIn Learning have become popular for connecting individuals and offering access to resources, they are primarily
designed for professional or commercial use rather than academic growth. These platforms lack institutional verification mechanisms to ensure credibility within an academic context and do not provide structured mentorship tailored to students' educational needs.

As a result, students often face challenges when attempting to compete with highly experienced professionals on these platforms. The absence of academic validation makes it difficult for their skills and achievements to be recognized, while the lack of structured guidance prevents them from receiving mentorship that could support their academic and career progression. Consequently, many learners miss out on opportunities to showcase their potential, collaborate effectively within a trusted academic network, and translate their learning into practical growth.

To address these gaps, there is a need for a secure and verified ecosystem where students, professors, and alumni can engage in meaningful interactions. Such a platform would enable skill-sharing, structured mentorship, and micro-service exchanges within a trusted academic framework, thereby fostering both academic and professional development.

1.2 Objective of the Study

The overarching objective of the Sikhado project is to design and develop a secure, institution-verified platform to connect students, teachers, and alumni. This core goal ensures that the platform remains an exclusive, trusted academic network, addressing the significant limitations of generalized platforms like Fiverr and Upwork, which lack institutional verification.

A primary objective is to enable and streamline micro-job/task posting and mentorship functionalities. This includes allowing users to post and seek services and guidance, such as tutoring or design help, within the academic community. This feature is designed to foster a culture of mutual support and practical skill development, promoting a structured way for juniors to connect with seniors or professors that is missing in existing systems. The platform also aims to facilitate these connections through request functionalities within the system, making it easier for users to find the help or opportunities they need.

A critical functional objective is to integrate secure online payment gateways, like Razorpay or Stripe, to handle service fees. This ensures that all financial transactions for completed services are safe and transparent, providing a reliable and secure way for users to earn within the institutional ecosystem. The platform is also designed with the objective of allowing users to build portfolios, receive ratings, and track completed services. This system encourages credibility, provides a tangible showcase of skills and achievements, and helps users track their academic and professional progress. In terms of user experience, a key objective is to provide an intuitive and responsive UI. The platform must be seamless and easy to use across a range of devices, from desktops to smartphones, ensuring accessibility and ease of use for the entire academic community.

By achieving these objectives, Sikhado directly supports two key Sustainable Development Goals. It promotes:

SDG Goal 4: Quality Education by fostering continuous learning, mentorship, and skill development within a trusted academic network. The platform encourages peer-to-peer education and bridges the gap between classroom theory and real-world application. Furthermore, it supports

SDG Goal 8: Decent Work and Economic Growth by providing opportunities for students to earn income through verified, academic-related micro-services, thereby promoting meaningful work aligned with their expertise and the needs of their institution.

Ultimately, the platform's objectives are to promote skill-sharing and academic collaboration within a safe, internal environment, bridging the gap between learning and earning while upholding the integrity and privacy of the institutional community.

1.3 Overview of the system

Sikhado is envisioned as a secure and specialized academic networking platform that provides a trusted digital space for students, professors, and alumni to engage with one another. Unlike conventional networking or freelancing platforms, it is designed exclusively for educational institutions, ensuring that every user is verified and connected through a legitimate academic

environment. This emphasis on verification not only enhances trust but also creates a focused ecosystem where interactions are meaningful and relevant to academic and professional development.

The platform facilitates the sharing of microservices such as project assistance, academic guidance, tutoring, and peer-to-peer skill support. By enabling students to offer their skills while simultaneously accessing mentorship and resources from educators and alumni, Sikhado promotes a culture of collaboration and mutual growth. Professors and alumni can extend structured guidance, industry insights, and mentorship, while students can gain practical exposure and build their professional competencies in a safe environment.

In addition to mentorship and collaboration, the platform is designed to bridge the gap between learning and earning. Students can contribute their expertise to peers and institutions through verified exchanges, allowing them to gain real-world experience and, in some cases, earn recognition or financial support. Secure transactions, accountability, and institutional credibility further ensure that these exchanges remain authentic and beneficial to all stakeholders.

Overall, Sikhado serves as a comprehensive academic ecosystem that integrates knowledge-sharing, mentorship, and microservices into a unified platform. By fostering trusted connections between students, educators, and alumni, it strengthens academic communities and prepares learners for both academic success and future professional opportunities.

1.3.1 Logo of Sikhado

Sikhado – A Secure Platform for Connecting Great Learners and Great Minds Alike

Fig 1

Sikhado Logo and Name Interpretation

The name **"Sikhado"** carries a dual significance, reflecting both the platform's purpose and its value proposition. In Hindi, *"Sikha"* translates to "teach," and *"do"* translates to "two," forming the composite meaning of *"Sikhado"* as a platform for teaching and learning. This captures the essence of the platform as a space where users can both share knowledge and gain skills, emphasizing the reciprocal nature of learning within an institutional community.

Additionally, the second layer of meaning is associated with value and reward. The word *"Sikha"* also symbolizes "gold," while *"do"* conveys the idea of getting monetary rewards. This dual interpretation aligns with the platform's functionality of providing both educational opportunities and financial rewards through verified micro-services. Users can teach, learn, and earn, encapsulating the concept of knowledge as a valuable and tradable resource.

The logo itself reinforces this dual symbolism:

- The coin in the center represents both monetary value (₹ symbol) and intellectual value (book icon). The book signifies learning, knowledge, and mentorship, while the rupee symbol emphasizes the financial or reward-based aspect of the platform. Together, they symbolize that education and earning are integrated seamlessly.

- The palm of a hand beneath the coin conveys accessibility, support, and empowerment. It suggests that knowledge and opportunity are literally "in one's hands," emphasizing that the platform is user-centric, easy to access, and versatile.

- The circular coin with stars around the edge reflects trust, completeness, and reliability, suggesting a secure and verified environment for academic networking.

Overall, the Sikhado logo and name together convey the platform's mission: a trusted, secure, and user-friendly ecosystem where students, professors, and alumni can engage in teaching, learning, mentorship, and earning. It embodies accessibility, versatility, and the integration of knowledge and reward, highlighting the holistic value Sikhado offers to its users.

1.3.2 SDG goals supported

The project contributes directly to the United Nations Sustainable Development Goals (SDGs) by addressing key areas related to education, work, and economic growth. By creating a secure, verified, and collaborative academic ecosystem, it supports both the learning journey of students and their transition into professional domains.

Fig 2:

SDG Goal 4 – Quality Education

The platform promotes inclusive and equitable quality education by enabling continuous learning, mentorship, and skill development within a trusted academic network. Students can access guidance from professors and alumni, engage in peer-to-peer knowledge exchange, and develop practical competencies that complement traditional classroom learning. By providing a structured environment for mentorship and collaboration, the platform ensures that learning opportunities are not only accessible but also credible and relevant to real-world applications.

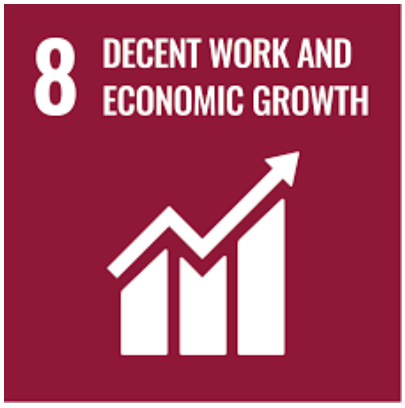

Fig 3:

SDG Goal 8 – Decent Work and Economic Growth

The project also aligns with the goal of fostering decent work and sustainable economic growth. Through microservice exchanges and verified academic contributions, students gain opportunities to apply their skills in meaningful ways, bridging the gap between education and employment. By supporting secure and trusted transactions within academic communities, the platform encourages entrepreneurial thinking, enhances employability, and contributes to the creation of sustainable economic opportunities. This empowers students to build professional readiness while ensuring fairness and accountability within the ecosystem.

1.3.3 Community Partner

Universities

Universities play a pivotal role in fostering academic growth, professional development, and community engagement. By partnering with the platform, universities can provide a secure and

verified environment where students, professors, and alumni are able to interact meaningfully within their academic community. This partnership enables the institution to support skill-sharing, mentorship programs, and collaborative learning initiatives in a controlled and trustworthy ecosystem.

Through such collaboration, universities can ensure that students gain practical exposure, receive guidance from experienced faculty and alumni, and participate in microservice exchanges that complement their formal education. The platform also helps universities strengthen connections within their alumni network, facilitate knowledge transfer, and promote continuous learning, all while maintaining institutional credibility and oversight.

Overall, partnering with universities allows the platform to integrate seamlessly into the academic framework, fostering a culture of trust, collaboration, and academic excellence.

1.4 Features of Sikhado

Sikhado is meticulously designed with a set of core features that collectively create a secure and academically-focused environment, addressing the shortcomings of generalized freelancing platforms.

- **Verified and Secure Academic Networking:** The platform's foundational feature is its exclusivity to a closed institutional ecosystem. This is guaranteed by a mandatory Institutional Verification System, which requires all new users to register and verify their accounts using a valid academic email address or an institutional ID for admin approval.
- **Role-Based Access Control:** Upon successful verification, users are assigned a specific role—Student, Professor, or Alumni. This role-based system ensures that the user's dashboard and available functionalities are tailored to their specific needs and permissions within the academic hierarchy.
- **Micro-job and Task Modules:** Sikhado enables the seamless posting and application for a variety of micro-jobs and tasks. A professor, for example, can post a need for content proofreading, and students can bid or apply for the job. These requests and offers are organized in categorized project boards, making it easy for users to find relevant opportunities.

- **Structured Mentorship Framework:** A key differentiator is the dedicated mentorship module. This feature allows junior students to request mentorship in specific fields, and verified alumni or faculty members can accept these requests, fostering a formal and secure connection for academic and professional guidance.
- **Secure Financial Transactions:** To support the micro-service ecosystem, the platform integrates a secure online payment gateway (such as Razorpay or Stripe). It utilizes an escrow-style payment flow, where funds are held securely until the service is completed to the satisfaction of both parties, ensuring trust and transparency.
- **Professional Portfolio and Ratings System:** Users are empowered to build a comprehensive profile showcasing their skills, completed projects, and a portfolio of work. After a service or mentorship session is completed, users can receive ratings and reviews from their peers and mentors, which builds credibility and a track record of their work within the community.
- **Responsive and Intuitive UI:** The platform is built with a responsive and clean user interface, designed to work seamlessly across various devices, including desktops, laptops, tablets, and smartphones. Basic features like academic email sign-up, search and filter options, and a user-friendly dashboard are all designed for a smooth user experience.
- **Collaboration and Skill-Sharing Tools:** Beyond formal tasks and mentorship, Sikhado aims to promote informal collaboration. This can include features where students can share lecture notes, host virtual peer-learning sessions, or post help requests for academic assistance, strengthening the internal community and encouraging lifelong learning.

2. SYSTEM ANALYSIS

The Sikhado platform is designed to create a secure, verified, and collaborative academic ecosystem. The system facilitates interactions between students, professors, and alumni by supporting skill-sharing, mentorship, and microservice exchanges within a trusted environment. From a technical perspective, the system must ensure data security, scalability, and ease of access, allowing users to navigate the platform efficiently. Analysis of user roles, workflows, and system interactions helps in designing an architecture that balances usability, performance, and reliability, ensuring that the platform meets both academic and professional development objectives.

2.1 Existing System

Several digital platforms currently facilitate skill-sharing, networking, and professional development, though they are primarily geared toward general professional or commercial environments.

- **LinkedIn**: A professional networking platform that connects individuals across industries. It allows users to showcase their skills, share achievements, and build professional connections. LinkedIn also offers learning modules through LinkedIn Learning, providing courses and tutorials for skill enhancement.

- **Fiverr**: An online marketplace where freelancers can offer microservices across various domains. It enables users to monetize their skills and connect with clients worldwide.

- **Upwork**: A freelancing platform that connects clients and professionals for project-based work. Users can bid for tasks, showcase portfolios, and manage freelance contracts.

2.1.1 Limitations of Existing System

While platforms like Fiverr, Upwork, and LinkedIn Learning provide opportunities for freelancing, skill development, and professional networking, they have several limitations when

considered in an academic context:

1. **Lack of Institutional Verification**: These platforms do not provide mechanisms to verify users through academic institutions, which can result in untrusted interactions or unverifiable credentials.

2. **Generalized User Base**: They are designed for a global, professional audience rather than students, professors, or alumni within a specific institution, limiting their relevance to academic growth.

3. **Absence of Structured Mentorship**: There is no formal system to connect learners with mentors in a structured or guided manner, reducing opportunities for targeted skill development.

4. **Limited Academic Collaboration**: Peer-to-peer knowledge exchange and collaborative learning are not facilitated in a controlled academic ecosystem, leading to missed opportunities for internal knowledge sharing.

5. **Commercial Focus**: Many interactions on Fiverr and Upwork are monetized, prioritizing economic transactions over educational relevance, which may not align with student learning objectives.

6. **Lack of Controlled Environment**: Existing platforms do not support a secure and institutionally monitored environment, which is essential for fostering trust and accountability in academic collaborations.

2.2 Proposed System

The proposed system, **Sikhado**, is a secure academic networking platform designed to facilitate meaningful connections among students, professors, and alumni within a verified institutional ecosystem. By focusing exclusively on the academic environment, Sikhado promotes trust, collaboration, and professional growth while maintaining institutional credibility.

Sikhado enables users to offer or avail micro-services, mentorship, and learning support entirely within their organization. This allows students to enhance their skills, gain practical experience, and receive guidance from experienced faculty or alumni. Professors and alumni, in turn, can share expertise, mentor learners, and contribute to knowledge exchange within a controlled and trusted environment. Unlike general freelancing or professional platforms, Sikhado ensures institutional verification through academic email authentication and role-based access, guaranteeing that interactions occur only among verified members of the academic community. The system incorporates features such as secure payment handling, feedback and rating mechanisms, portfolio management, and a structured mentorship framework, all designed to enhance academic engagement and professional readiness.

Overall, Sikhado bridges the gap between learning and earning while preserving the integrity, privacy, and trustworthiness of the institution. By combining skill-sharing, mentorship, and academic support into a single platform, it creates a comprehensive ecosystem that empowers students, strengthens alumni connections, and fosters continuous professional development.

2.2.1 Benefits of the Proposed System

- **Verified and Secure Academic Networking**: Ensures that all users are authenticated members of the institution, providing a trusted environment for academic interactions.

- **Personalized Mentorship and Learning Support**: Facilitates one-on-one or group mentorship from professors and alumni, allowing students to receive tailored guidance and support.

- **Internal Collaboration among Students, Faculty, and Alumni**: Encourages collaborative projects, knowledge sharing, and peer-to-peer learning within the institution.

- **Opportunities to Earn through Micro-Services within the Institution**: Enables students to offer their skills or services to peers and faculty, providing practical experience and potential earnings.

- **Structured Skill Development and Portfolio Building**: Allows users to showcase completed projects, skills, and achievements, helping them build a professional portfolio over time.

- **Trust-Based Interactions with Role-Based Access Control**: Implements access restrictions based on user roles (student, faculty, alumni), ensuring interactions are safe, relevant, and institutionally appropriate.

- **Safe and Transparent Payments with Feedback and Ratings**: Provides a secure platform for transactions, with ratings and reviews that maintain accountability and trust among users.

- **Promotes Lifelong Learning and Quality Education within Institutions**: Supports continuous skill development and learning opportunities, reinforcing the institution's commitment to academic excellence and professional growth.

2.2.2 Limitations of Existing System vs Benefits of Proposed System

Table 1:

Feature/Aspect	**Existing System**	**Limitations**	**Proposed System**	**Benefits**
User Verification	LinkedIn, Fiverr, Upwork	No institutional verification; risk of untrusted interactions	Sikhado	Verified academic users only; trusted environment
Target Audience	Global professionals	Not tailored for students, professors, or	Sikhado	Focused on academic community;

		alumni		relevant user base
Mentorship	LinkedIn Learning	No structured mentorship framework	Sikhado	Personalized mentorship from faculty and alumni
Collaboration	General networking platforms	Limited peer-to-peer academic collaboration	Sikhado	Internal collaboration among students, faculty, and alumni
Monetization	Fiverr, Upwork	Commercial focus over educational relevance	Sikhado	Enables earning through academic micro-services aligned with learning
Security & Control	Existing platforms	Lack of secure, monitored environment	Sikhado	Safe and institutionally monitored interactions with role-based access
Portfolio & Skill Development	LinkedIn, Upwork	General professional focus; not academic	Sikhado	Structured skill-building and portfolio creation within the institution

2.3 Literature Review

Recent developments in academic networking and educational technology research have increasingly focused on the intersection of social networking, peer mentorship, and secure educational platforms. The emergence of specialized academic networking sites has transformed how students, faculty, and alumni interact within institutional frameworks. Over the past decade, platforms such as Academia.edu, ResearchGate, and Mendeley have established themselves as leading academic social network sites (ASNS), providing researchers with new avenues for collaboration and knowledge dissemination [1]. These platforms have demonstrated the viability of academic-focused networking, with empirical research showing their significant impact on scholarly communication and research visibility [2, pp. 1-15].

The effectiveness of academic social networking platforms has been extensively documented across various educational contexts. As Van Noorden [3] points out, social networking has become integral to modern scientific communication, with platforms proving instrumental in virtual publicity and academic engagement. However, traditional platforms often lack the institutional verification and role-based access controls that are essential for creating truly secure academic environments. Research has shown that broad-scope platforms like Google Scholar provide access to vast arrays of academic materials and citation tracking capabilities, yet they do not offer the personalized, institution-specific networking that fosters deeper academic collaboration [4, pp. 20-34].

Contemporary research on peer mentoring in higher education has revealed substantial benefits across multiple dimensions of student success. A systematic review covering numerous research articles identified four fundamental aspects where peer mentoring demonstrates significant impact: academic performance, retention rates, emotional and psychological wellbeing, and social integration [5]. The evidence suggests that students who engage in peer mentoring programs experience higher rates of academic success, with mentees showing improved GPA outcomes and reduced likelihood of academic struggles. Furthermore, as Gehreke [6] demonstrates, peer mentoring programs specifically designed for the study entry phase have shown remarkable effectiveness in supporting student transition and integration into academic communities.

The collaborative learning potential of social media and networking platforms has garnered significant attention in educational technology research. A study exploring social media's role in collaborative learning revealed that online platforms used for collaborative purposes had significant impacts on interactivity with peers, teachers, and online knowledge sharing behavior [7, pp. 45-62]. This research underscores the importance of structured interaction frameworks within academic networking platforms. Additionally, research on online learning platforms has demonstrated that factors such as transactional distance and instructional design significantly influence students' academic achievements and satisfaction, suggesting that well-designed educational networking platforms can serve as powerful tools for enhancing learning outcomes [8].

The concept of students as partners in peer mentoring has emerged as a particularly relevant framework for academic networking platforms. Research focusing on partnership approaches to first-year peer mentoring found that peer mentors playing critical roles as program designers and facilitators led to enhanced student outcomes [9, pp. 78-89]. This participatory approach aligns closely with platforms that enable students to both seek and provide services within their academic communities. Moreover, studies have shown that peer mentoring programs create specific advantages for diverse student populations, with evidence indicating that targeted programs addressing belonging and inclusion needs can significantly improve student development outcomes [10].

The integration of secure payment systems and portfolio development within academic networking contexts represents a relatively underexplored area in current literature. While traditional academic social networking sites focus primarily on research sharing and citation tracking, the concept of monetized micro-services within academic communities presents novel opportunities for student economic empowerment. Research examining online learning platforms has highlighted the importance of user satisfaction metrics and achievement tracking, suggesting that comprehensive rating and portfolio systems could significantly enhance platform effectiveness [8; 11, pp. 23-41].

Current research gaps exist particularly in the area of institutional verification systems and their impact on academic networking effectiveness. While existing studies document the benefits of

peer mentoring and academic social networking separately, limited research has explored the synergistic effects of combining verified institutional access with comprehensive mentorship and micro-service frameworks. The majority of existing academic networking platforms operate on open-access models, potentially compromising the trust and security that closed institutional communities can provide. This suggests significant potential for platforms like Sikhado that emphasize institutional verification and role-based access as foundational elements of their design philosophy.

Current research gaps exist particularly in the area of institutional verification systems and their impact on academic networking effectiveness. While existing studies document the benefits of peer mentoring and academic social networking separately, limited research has explored the synergistic effects of combining verified institutional access with comprehensive mentorship and micro-service frameworks [1; 4; 5]. The majority of existing academic networking platforms operate on open-access models, potentially compromising the trust and security that closed institutional communities can provide. This suggests significant potential for platforms like Sikhado that emphasize institutional verification and role-based access as foundational elements of their design philosophy.

2.4 Functional Requirements

Table 2:

Req.No	**Requirements**	**Specific Description**
FR01	User Authentication and Role-Based Access Control	A student logs in using institution credentials and is granted access only to student-specific features.
FR02	Institution Verification System	New users must upload valid institution ID or email for admin

		verification before joining the network.
FR03	Micro-Job/Task Posting and Bidding	A professor posts a task for content proofreading, and students can apply or bid for the job.
FR04	Mentorship Request and Management	A first-year student requests mentorship in Data Science, and a verified alumni accepts the request.
FR05	Secure Payment Gateway Integration	Payments for completed services are processed via integrated Razorpay/Stripe APIs
FR06	Portfolio and Rating System	A student builds a portfolio showcasing completed projects, rated by peers and mentors
FR07	Request Functionalities (Support/Opportunities)	Users can post help requests (e.g., academic doubts, project assistance) and get matched to suitable mentors or peers.
FR08	Responsive and Intuitive User Interface	Sikhado works seamlessly on mobile, tablet, and desktop with responsive layouts and optimized performance.
FR09	Skill-Sharing and Collaborative Tools	Students can share lecture notes, video tutorials, or host virtual

		peer-learning sessions within the platform.
FR10	Activity Tracking and Progress Reports	Users receive monthly reports summarizing completed tasks, received ratings, and mentorship sessions.

2.4.1 Requirements Specification

The requirements for the Sikhado platform have been derived from multiple sources to ensure it meets the needs of a verified academic networking ecosystem.

- **Academic Networking Needs:** The platform is designed to create a secure internal environment for students, professors, and alumni within a particular institution. To maintain credibility, users must register using institutional academic email addresses, and role-based access is enforced so that students, professors, and alumni have appropriate permissions. Access to the platform is restricted to verified members of the institution, ensuring a trusted academic environment.
- **Functional Requirements from Project Goals:** Sikhado includes service and mentorship modules that allow users to post and request micro-jobs or mentorship. These requests and offers are organized in categorized project boards, enabling structured interaction. All activities occur within the institution's ecosystem, maintaining academic relevance and internal collaboration.
- **Security Standards:** To protect user data and institutional integrity, the system implements secure login with encrypted passwords, academic email verification for new accounts, and an admin dashboard for monitoring activity, resolving issues, and ensuring compliance with institutional policies.
- **Payment Gateway Integration:** For handling financial transactions related to micro-services, the platform integrates secure net banking methods to ensure

transparency and security. Payments are accessible only to institution-verified users, safeguarding both funds and trust within the platform.

- **Industry Inspiration:** Sikhado adapts features from leading freelancing and learning platforms like Fiverr and LinkedIn Learning, customizing them for academic use. Users can build public profiles and portfolios visible within the institution, receive ratings and reviews for completed services, and display certifications, badges, and skill endorsements.
- **Usability Expectations:** The platform emphasizes smooth and accessible user interaction. It supports both desktop and mobile views using HTML, CSS, JavaScript, Bootstrap, and MySQL. Navigation is kept simple and intuitive, with features such as academic email-based sign-up/login, role-specific dashboards, micro-service and mentorship posting, search and filter options, secure payment integration, portfolio building, and ratings & feedback systems.
- **Alignment with SDG Goals:** Sikhado supports SDG 4 – Quality Education by promoting continuous learning, peer-to-peer mentorship, and internal service exchange. It encourages collaboration between students, professors, and alumni to enhance both academic knowledge and practical skills. The platform also aligns with SDG 8 – Decent Work and Economic Growth, offering students opportunities to earn income through verified, institution-related services while promoting meaningful work that develops professional skills and aligns with institutional needs.

2.5 Software and Hardware Requirements

The essential software and hardware needed to develop, deploy, and run the Sikhado platform efficiently. It ensures that the system performs reliably while providing a seamless user experience across devices.

2.5.1 Hardware Requirements

Client Side:

- Device: Desktop, Laptop, Tablet, or Smartphone
- Processor: 1.5 GHz or above
- RAM: Minimum 4 GB
- Storage: Minimum 500 MB free space

Server Side:

- Processor: Quad-core 2.4 GHz or above
- RAM: Minimum 8 GB
- Storage: 100 GB or more
- Network: Stable internet connection with minimum 10 Mbps bandwidth

2.5.2 Software Requirements

Frontend:

- HTML5, CSS3, JavaScript
- React.js / Bootstrap (for dynamic UI)

Backend:

- MySQL / Python

Database:

- PHP Localhost MySQL

Server/Hosting:

- AWS (future implementation)

Other Tools:

- Git & GitHub for version control
- Figma for UI/UX design
- E-Banking / Google Pay for payment integration

Other Requirements

- SSL Certificate for secure HTTPS access
- Email verification system
- Institutional email domain whitelist
- API for institution verification
- Role-based access control system

3. SYSTEM DESIGN

Sikhado is a secure, institution-verified academic networking platform that enables micro-services, mentorship, portfolios, reviews, and payments inside a closed ecosystem with role-based access and responsive UI across devices, as specified in the SRS objectives and requirements.

3.1 Database Design

3.1.1 Table Design

1. User_Registration

Attributes:

- user_id (INT, PK)
- name (VARCHAR)
- email (VARCHAR, UNIQUE)
- password (VARCHAR)
- role (VARCHAR) — student/professor/alumni/both
- institution (VARCHAR)
- status (VARCHAR)

2. User_Login

Attributes:

- login_id (INT, PK)
- user_id (INT, FK → User_Registration.user_id)
- password (VARCHAR)

3. Skills

Attributes:

- skill_id (INT, PK)

- user_id (INT, FK → User_Registration.user_id)
- skill_name (VARCHAR)
- proficiency_level (VARCHAR)

4. Portfolios

Attributes:

- portfolio_id (INT, PK)
- user_id (INT, FK → User_Registration.user_id)`
- title (VARCHAR)
- description (VARCHAR)
- link (VARCHAR)

5. Services

Attributes:

- service_id (INT, PK)
- user_id (INT, FK → User_Registration.user_id)`
- title (VARCHAR)
- description (VARCHAR)
- category (VARCHAR)
- price (FLOAT)
- duration (VARCHAR)
- status (VARCHAR)

6. Service_Requests

Attributes:

- request_id (INT, PK)

- requester_id (INT, FK → User_Registration.user_id)`
- service_id (INT, FK → Services.service_id) (nullable)
- mentor_id (INT, FK → User_Registration.user_id) (nullable)
- type (VARCHAR) — service / mentorship
- message (VARCHAR)
- status (VARCHAR)
- deadline (DATE)

7. Mentorships

Attributes:

- mentorship_id (INT, PK)
- mentor_id (INT, FK → User_Registration.user_id)`
- mentee_id (INT, FK → User_Registration.user_id)`
- topic (VARCHAR)
- status (VARCHAR)
- start_date (DATE)
- end_date (DATE)

8. Payments

Attributes:

- payment_id (INT, PK)
- service_id (INT, FK → Services.service_id)`
- payer_id (INT, FK → User_Registration.user_id)`
- amount (FLOAT)
- status (VARCHAR)
- payment_date (DATE)

9. Reviews

Attributes:

● review_id (INT, PK)

● service_id (INT, FK → Services.service_id)`

● reviewer_id (INT, FK → User_Registration.user_id)`

● rating (INT)

● comment (VARCHAR)

10. Certificates_Badges

Attributes:

● badge_id (INT, PK)

● user_id (INT, FK → User_Registration.user_id)`

● title (VARCHAR)

● description (VARCHAR)

● issued_at (DATE)

3.1.2 Entity Relationships:

1. User_Registration

● 1:1 → User_Login

● 1:M → Skills

● 1:M → Portfolios

● 1:M → Services

● 1:M → Mentorships

● 1:M → Service_Requests (via Requester_ID, Mentor_ID)

- 1:M → Payments
- 1:M → Reviews
- 1:M → Certificates_Badges

2. User_Login

- M:1 → User_Registration

3. Skills

- M:1 → User_Registration

4. Portfolios

- M:1 → User_Registration

5. Services

- M:1 → User_Registration
- 1:M → Service_Requests
- 1:M → Payments
- 1:M → Reviews

6. Mentorships

- M:1 → User_Registration (Mentor)
- M:1 → User_Registration (Mentee)
- 1:M → Service_Requests
- 1:M → Payments
- 1:M → Reviews

7. Service_Requests

- M:1 → User_Registration (Requester)
- M:1 → Services (nullable)
- M:1 → Mentorships (nullable)
- M:1 → User_Registration (Mentor)

8. Payments

- M:1 → Services (nullable)
- M:1 → Mentorships (nullable)
- M:1 → User_Registration (Payer)

9. Reviews

- M:1 → Services (nullable)
- M:1 → Mentorships (nullable)
- M:1 → User_Registration (Reviewer)

10. Certificates_Badges

- M:1 → User_Registration

➢ Core entities reflect verified users and academic workflow: User, UserLogin, Skill, Portfolio, Service, ServiceRequest, Mentorship, CertificateBadge, Review, Payment. These map directly to functional requirements FR01–FR07 covering authentication, mentorship, micro-jobs, ratings, and secure payments.

➢ **Keys and integrity**: Each entity uses an integer primary key, with foreign keys enforcing relationships ensuring traceability from users to services, reviews, and payments per the conceptual model.

➢ **Security and verification**: User carries email, role, institution, status; UserLogin holds

hashed password and credential validation behaviors, supporting academic email verification and RBAC noted in security standards.

- ➢ **Commerce and escrow**: Payment includes method, amount, status, payment_date and operations like validatePayment and updatePaymentStatus to support gateway integration and release-on-completion flows referenced in the SRS payment requirements.
- ➢ **Learning signals**: Portfolio, Skill, Review, and CertificateBadge store proofs of work, proficiency, feedback, and recognitions to drive quality education outcomes and progress tracking (FR06, FR10).

3.2 ER Diagram

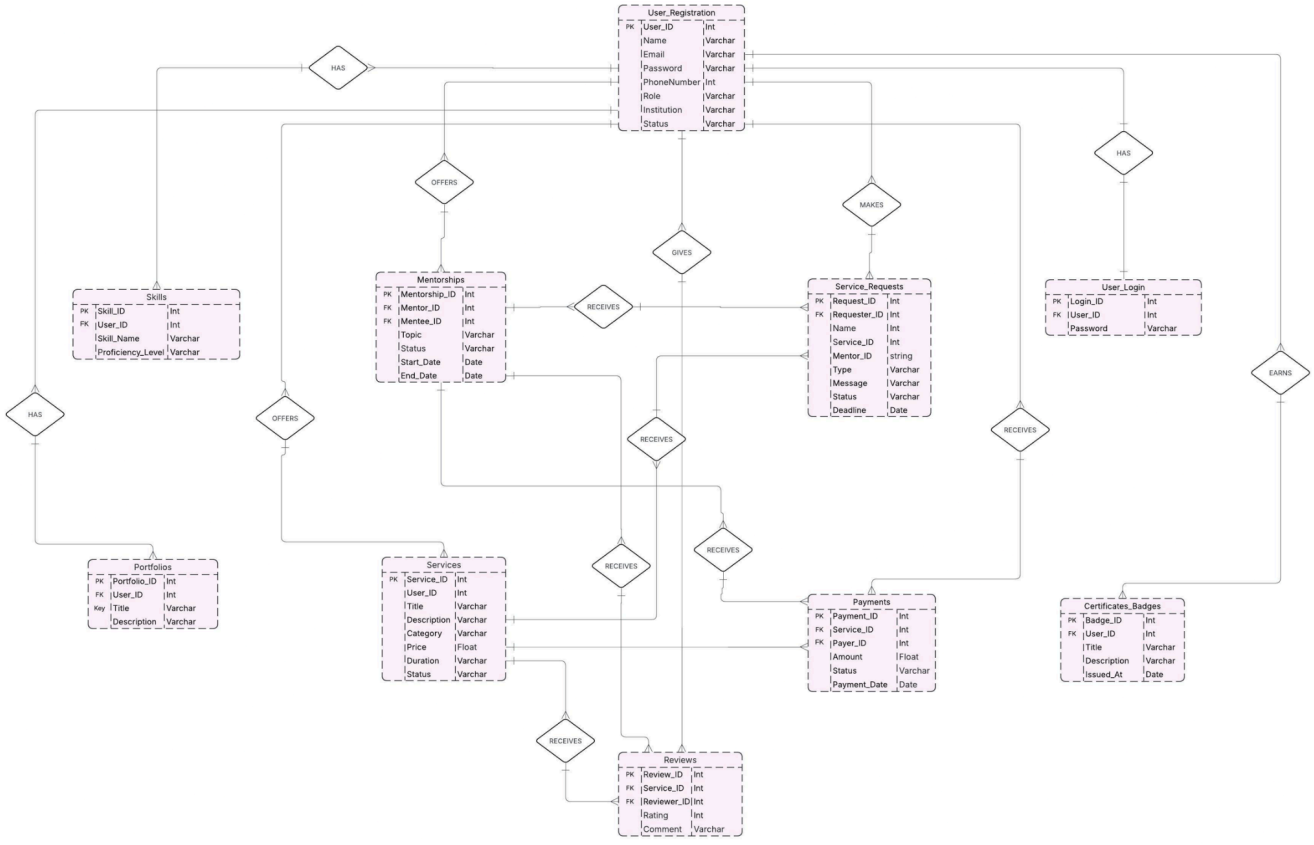

Fig 4

- **Users to Services:** One-to-many; verified users post multiple Services with category, price, duration, and status, enabling internal micro-job listings**.**
- **Requests lifecycle:** ServiceRequest links a requester to a Service with status transitions

(requested, accepted, in-progress, completed), aligning with task posting and bidding/acceptance flows.

- **Mentorship graph:** Mentorship references mentor_id and mentee_id (both Users) with topic, schedule, and status, modeling session management and duration calculation for FR04.
- **Trust and reputation:** Review ties a reviewer User to a Service with rating and comment, while Portfolio and Skill attach to User, enabling institution-intern3
- al credibility building.
- **Payments:** Payment connects to Service (and implicitly to the provider and requester) to record transactions, settlement status, and refunds, matching the secure gateway requirement.
- **User:** attributes (user_id, name, email, role, institution, status) and behaviors (register, updateProfile, changePassword, deactivate, validateEmail) implement verification and lifecycle controls per FR01–FR02.
- **UserLogin:** encapsulates authentication (authenticate, createSession, updatePassword, validateCredentials) with separation of concerns for secure login and session control.
- **Service:** operations (createService, updateService, getServicesByUser, searchServices, activate/deactivate, updatePrice) support posting, discovery, and moderation of micro-services for FR03.
- **ServiceRequest:** create, accept, reject, markCompleted, getRequestsByService/User realize end-to-end task flow and state changes.
- **Mentorship:** create, update, cancel, getMentorshipsByMentor/Mentee and calculateDuration formalize mentorship scheduling and tracking for FR04.
- **Portfolio and Skill:** create/update/get/search functions populate academic profiles and enable internal matching and discovery, supporting FR06 and skill-sharing.
- **Review:** create/update/delete and getReviewsByUser/Service with validateRating underpins feedback quality and progress reporting (FR06, FR10).
- **CertificateBadge:** issue/update/revoke and getCertificatesByUser provide verified recognitions to align with quality education goals.
- **Payment:** processPayment, refundPayment, validatePayment, calculateTotalAmount, updatePaymentStatus encapsulate gateway logic and checks for FR05.

3.3 Class Diagram

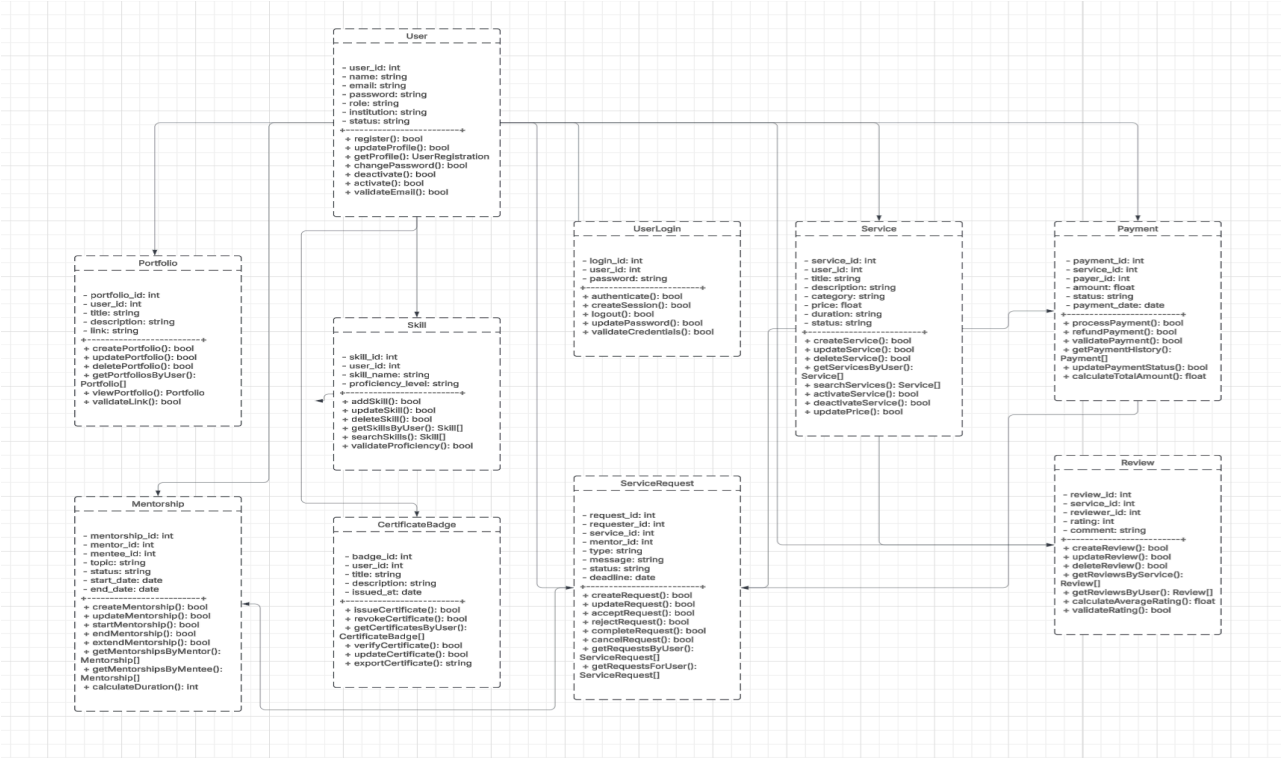

Fig 5

- **Core Academic Ecosystem**

  User Entity (Central Hub): This represents the verified academic community - students, professors, and alumni. The institutional verification requirement (academic email authentication) is reflected in the User class's registration and profile management methods. The role-based access control (Student/Professor/Alumni) directly corresponds to your functional requirement FR01.

  UserLogin: Implements the secure authentication system emphasized throughout your document, supporting the institutional verification process that distinguishes Sikhado from general platforms like Fiverr or Upwork.

- **Micro-Services Framework**

Service Entity: Directly implements your micro-job/task posting functionality (FR03). This allows professors to post content proofreading tasks, students to offer tutoring, or any verified user to provide academic assistance within the institutional ecosystem.

ServiceRequest: Manages the complete lifecycle of service requests - from posting to acceptance to completion - supporting the structured academic collaboration you emphasize as missing in existing platforms.

- **Mentorship Infrastructure**

  Mentorship Entity: This is a key differentiator of your platform. It formalizes the mentor-mentee relationships between seniors/alumni and junior students, addressing your literature review findings about the effectiveness of peer mentoring in academic success and retention.

- **Trust and Credibility System**

  Review Entity: Implements the rating and feedback system that builds credibility within the institutional ecosystem, supporting your portfolio and rating system requirement (FR06).

  CertificateBadge: Aligns with your emphasis on verified achievements and institutional credibility, allowing users to earn and display verified recognitions within the academic community.

  Portfolio & Skill Entities: Support your objective of helping students build professional portfolios and track skill development, bridging the gap between learning and earning.

- **Secure Financial Ecosystem**

  Payment Entity: Implements the secure payment gateway integration (FR05) with transactions, ensuring safe financial exchanges within the academic community while supporting your SDG Goal 8 (Decent Work and Economic Growth).

- **System Architecture Alignment**

  The interconnected nature of your classes reflects the comprehensive ecosystem described in your document - where users can simultaneously be service providers, mentees, mentors, and reviewers. This creates the "culture of mutual support and practical skill development" you aimed to foster.

  The diagram effectively translates your vision of a secure, institution-verified platform that combines skill-sharing, mentorship, and micro-services into a unified academic networking solution that addresses the limitations of existing generalized platforms.

3.4 User Interface Design

- **Access and verification:** Responsive authentication screens with academic email signup, OTP/verification, and role-aware dashboards for students, professors, and alumni; design aligns with the SRS mandate for responsive, intuitive UI across desktop and mobile.
- **Dashboards:**
  - Student: browse/search Services and Mentors, manage Requests, view Payments, Portfolio, Skills, Certificates, and Reviews, with progress widgets for activity tracking.
  - Professor/Alumni: post/manage Services, handle Requests, schedule Mentorship, view earnings and ratings, and manage certificates/badges awarded.
- **Core flows and screens:**
  - Service Listing & Detail with category, price, duration, provider profile, and internal request/accept actions to keep interactions inside the institution.
  - Request Management board with statuses, filters, and actions (accept/reject/mark completed) mirroring ServiceRequest states.
  - Mentorship Scheduler with topic selection, availability slots, session status, and duration summaries tied to Mentorship attributes.
  - Payments & Wallet showing transaction history, statuses, and dispute/refund options consistent with Payment states and secure gateway integration.
  - Portfolio & Skills editor for adding details and skills with proficiency levels, and certificates/badges to satisfy credibility and progress features.

- **Admin views:** institution verification queue, user role management, activity oversight, and compliance controls, reflecting security standards and institutional

4. IMPLEMENTATION

4.1 Functionalities of Sikhado

Sikhado offers a secure, academic-focused digital platform with the following functionalities:

- **Verified User Registration:** Users register using institutional academic email addresses to ensure a trusted academic ecosystem.

- **Role-Based Access:** Access and features are determined by user roles (Student, Professor, Alumni), ensuring appropriate permissions and interactions.

- **Service Listings:** Users can offer and avail services such as tutoring, design help, or academic assistance through organized in-platform project boards.

- **Mentorship Requests:** Students can request mentorship from senior students, faculty, or alumni, facilitating structured guidance and knowledge sharing.

- **Secure Payment Management:** Payments for services are handled via Razorpay or Stripe, using an escrow-style system to ensure completion and satisfaction.

- **Portfolio and Skill Showcase:** Users can maintain portfolios, receive ratings and reviews, and display badges or certificates to highlight their achievements.

- **Admin Oversight:** Administrators monitor platform activity, manage disputes, and ensure compliance with institutional rules and security standards.

4.2 Source Code

The source code for Sikhado is developed using a combination of frontend, backend, and database technologies to ensure a responsive, secure, and scalable academic networking platform.

- **Frontend:** HTML5, CSS3, JavaScript, React.js/Bootstrap for dynamic and responsive

user interfaces.

- **Backend:** MYSQL using XAMPP and Python to handle server-side logic, authentication, and API integrations.

- **Database:** MySQL PHP Localhost for storing user data, service listings, mentorship requests, and transaction records.

- **Payment Integration:** Net Banking for secure payment processing.

- **Version Control:** Git and GitHub are used to manage the source code, track changes, and enable collaborative development.

The codebase is organized into modular components for frontend, backend, and database operations, ensuring maintainability and scalability. For reference, the complete source code is maintained in a secure repository on GitHub.

4.3 Screen Shots

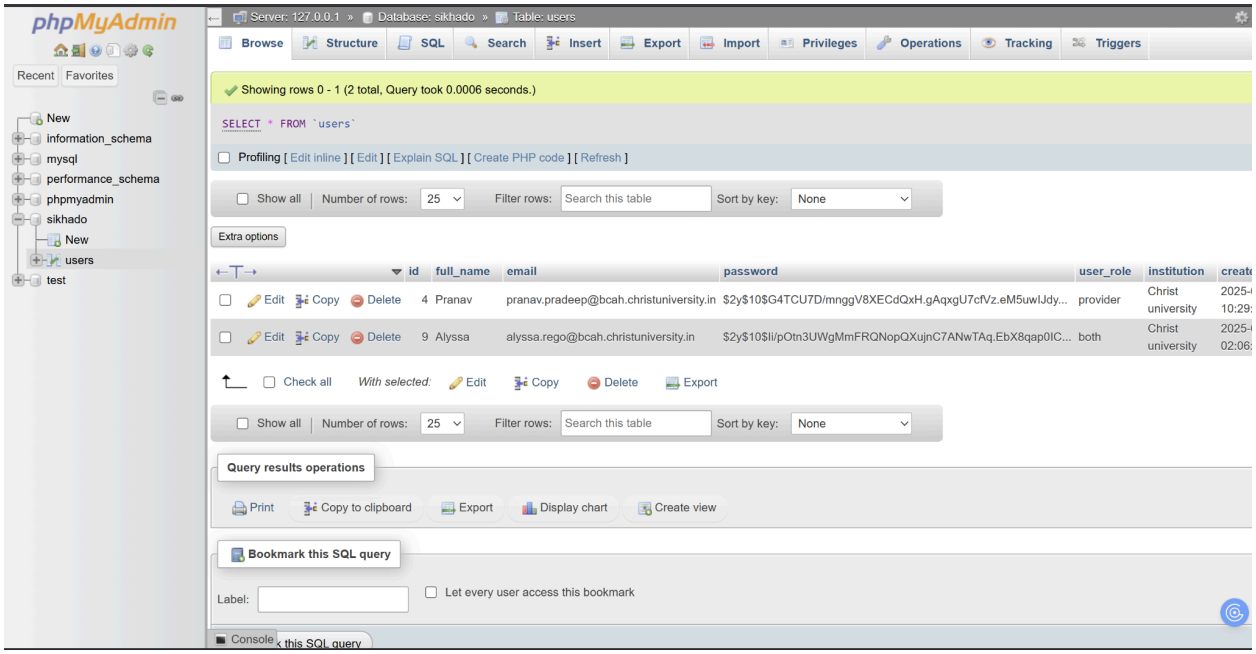
phpMyAdmin
Recent Favorites
New
information_schema
mysql
performance_schema
phpmyadmin
sikhado
New
users
test
Server: 127.0.0.1 » Database: sikhado » Table: users
Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers
Showing rows 0 - 1 (2 total, Query took 0.0006 seconds.)
SELECT * FROM `users`
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
Extra options
id full_name email password user_role institution
Edit Copy Delete 4 Pranav pranav.pradeep@bcah.christuniversity.in $2y$10$G4TCU7D/mnggV8XECdQxH.gAqxgU7cfVz.eM5uwIJdy... provider Christ university
Edit Copy Delete 9 Alyssa alyssa.rego@bcah.christuniversity.in $2y$10$li/pOtn3UWgMmFRQNopQXujnC7ANwTAq.EbX8qap0IC... both Christ university
Check all With selected: Edit Copy Delete Export
Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
Query results operations
Print Copy to clipboard Export Display chart Create view
Bookmark this SQL query
Label:
Let every user access this bookmark
Console

Fig 6

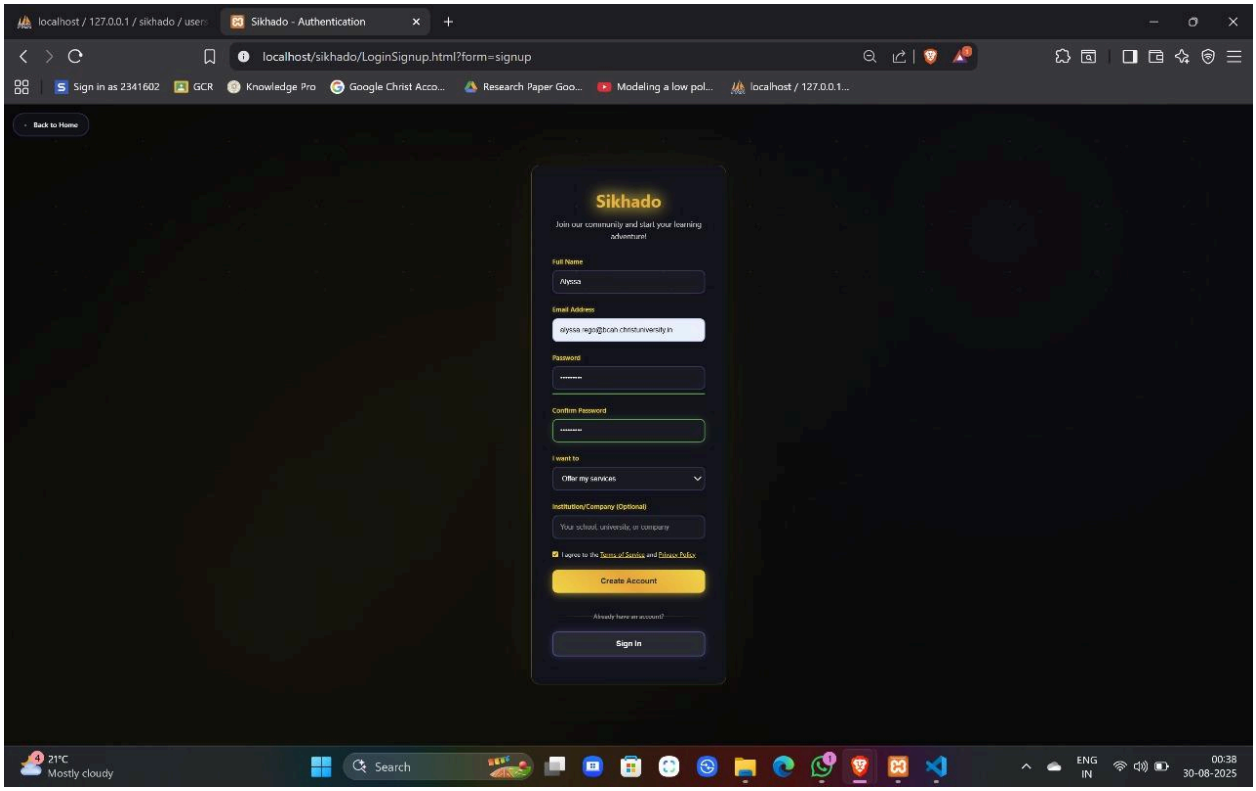
Sikhado - Authentication
localhost/sikhado/LoginSignup.html?form=signup
Back to Home
Sikhado
Join our community and start your learning adventure!
Full Name
Alyssa
Email Address
alyssa.rego@bcah.christuniversity.in
Password
Confirm Password
I want to
Offer my services
Institution/Company (Optional)
Your school, university, or company
Create Account
Sign In
Search
Mostly cloudy
ENG IN
30-08-2025

Fig 7

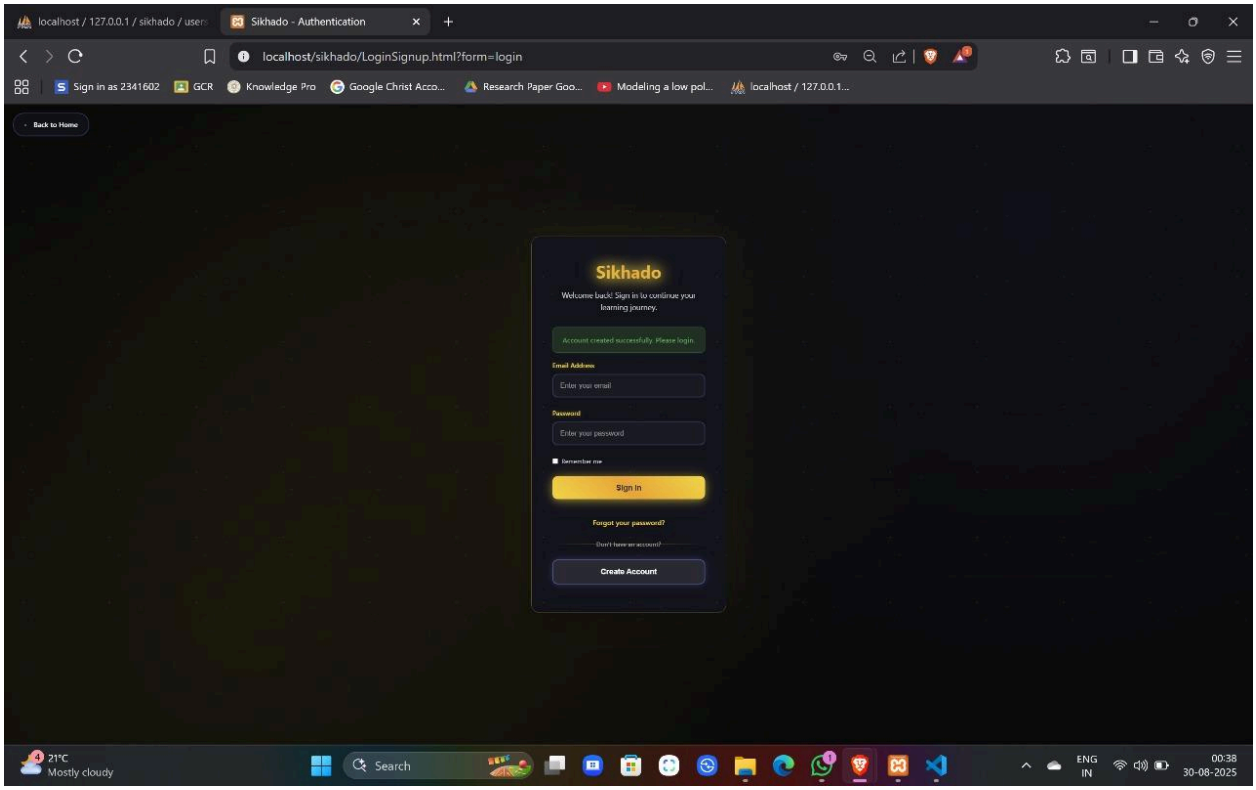
Sikhado - Authentication
localhost/sikhado/LoginSignup.html?form=login
Back to Home
Sikhado
Welcome back! Sign in to continue your learning journey.
Email Address
Password
Sign In
Forgot your password?
Create Account

Fig 8

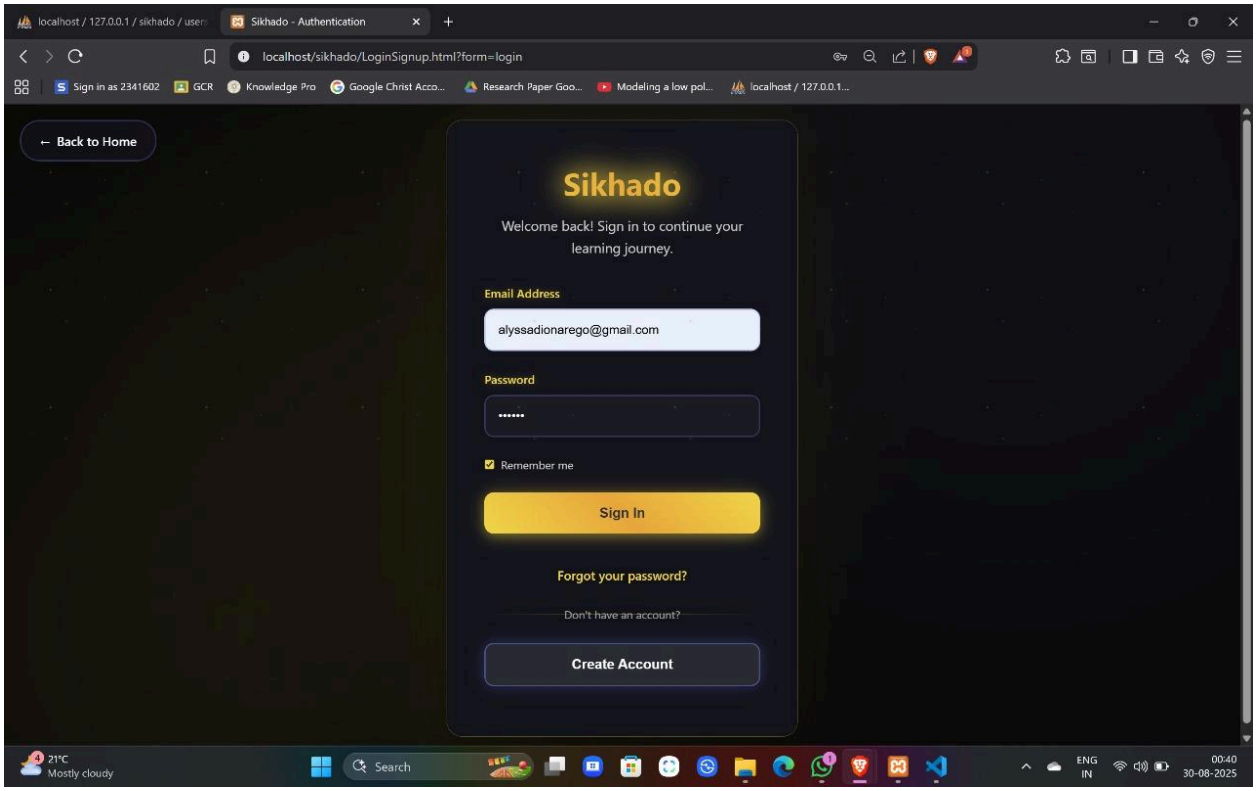
Sikhado - Authentication
localhost/sikhado/LoginSignup.html?form=login
← Back to Home
Sikhado
Welcome back! Sign in to continue your learning journey.
Email Address
alyssadionarego@gmail.com
Password
Remember me
Sign In
Forgot your password?
Don't have an account?
Create Account

Fig 9

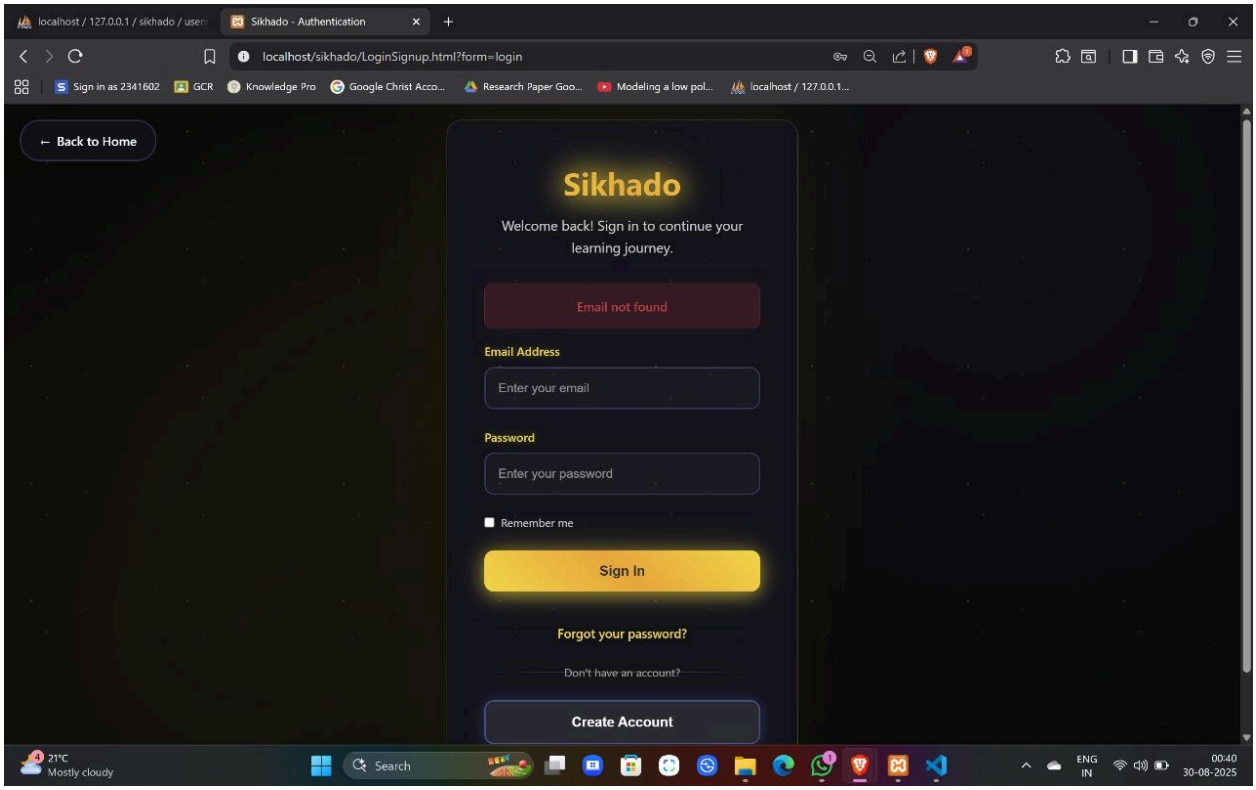
Sikhado - Authentication
localhost/sikhado/LoginSignup.html?form=login
← Back to Home
Sikhado
Welcome back! Sign in to continue your learning journey.
Email not found
Email Address
Enter your email
Password
Enter your password
Remember me
Sign In
Forgot your password?
Don't have an account?
Create Account

Fig 10

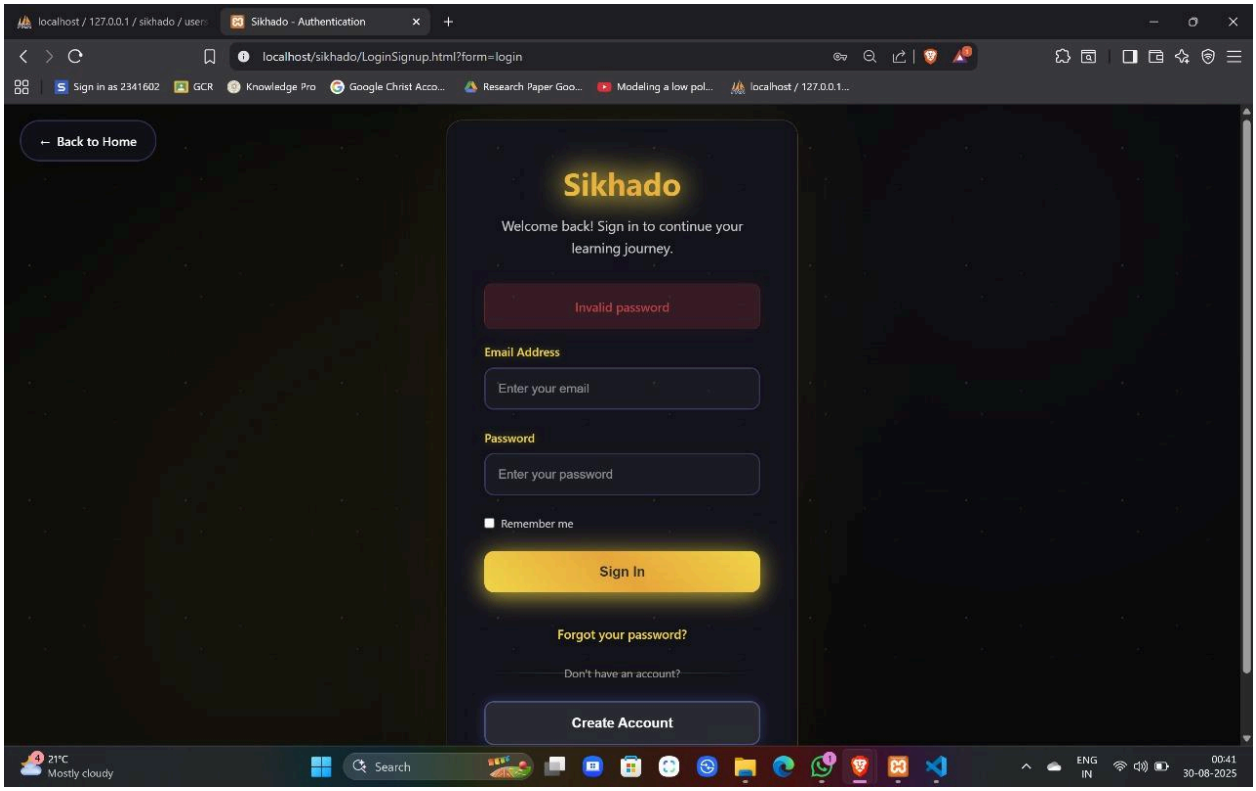
Sikhado - Authentication
localhost/sikhado/LoginSignup.html?form=login
← Back to Home
Sikhado
Welcome back! Sign in to continue your learning journey.
Invalid password
Email Address
Enter your email
Password
Enter your password
Remember me
Sign In
Forgot your password?
Don't have an account?
Create Account

Fig 11

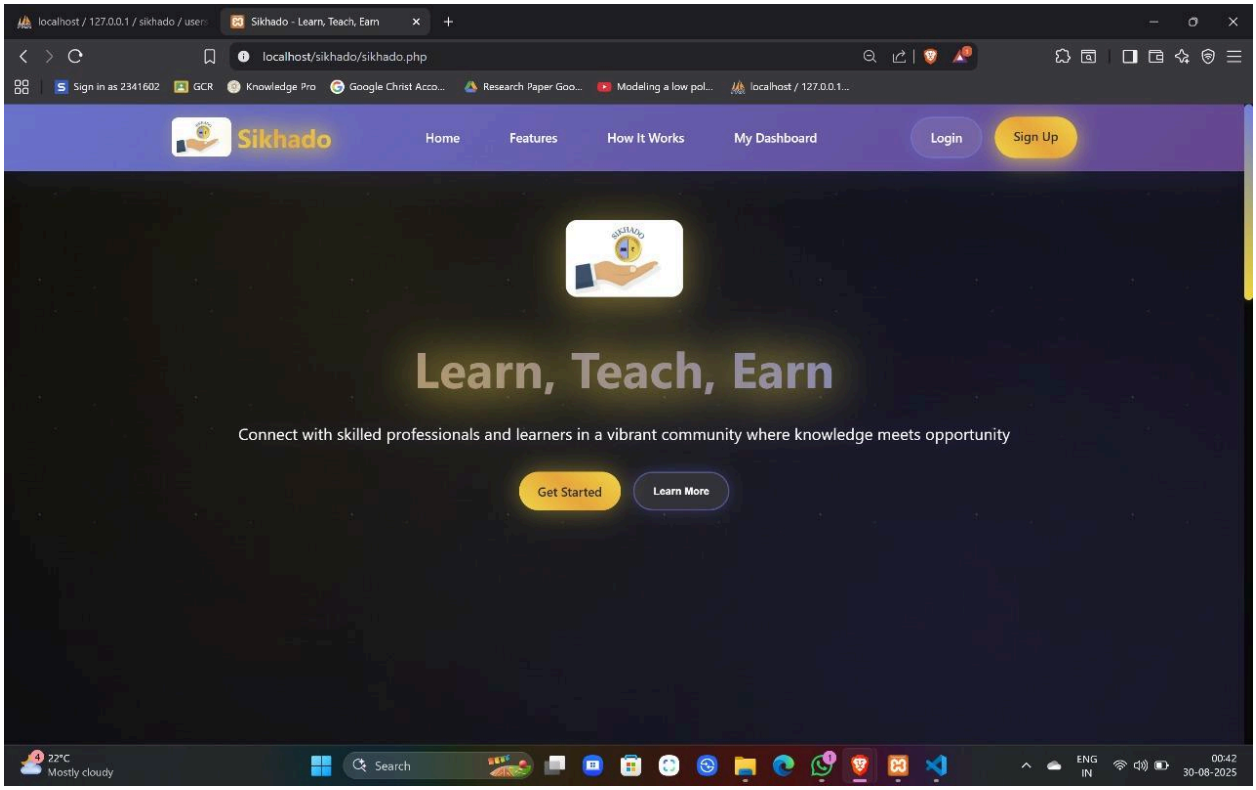
Sikhado - Learn, Teach, Earn
localhost/sikhado/sikhado.php
Sikhado
Home
Features
How It Works
My Dashboard
Login
Sign Up
Learn, Teach, Earn
Connect with skilled professionals and learners in a vibrant community where knowledge meets opportunity
Get Started
Learn More

Fig 12

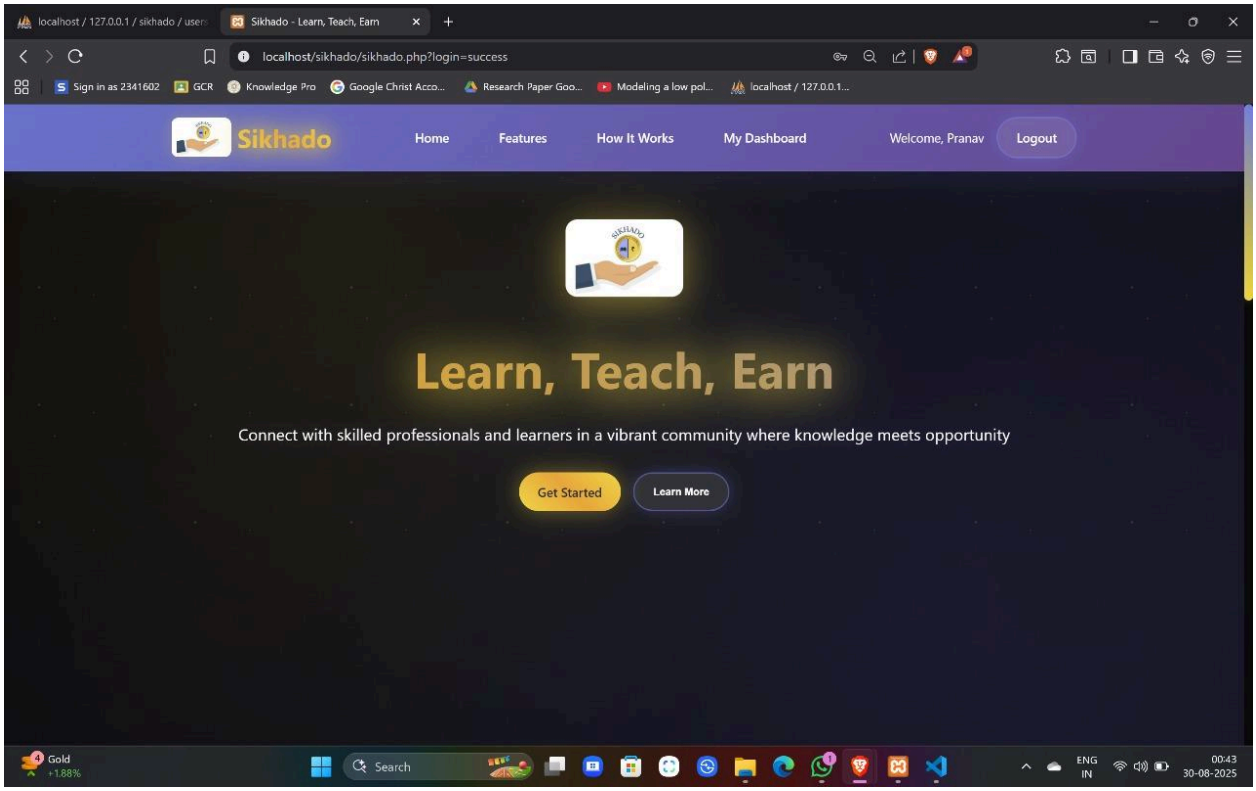
Sikhado - Learn, Teach, Earn
localhost/sikhado/sikhado.php?login=success
Sikhado
Home
Features
How It Works
My Dashboard
Welcome, Pranav
Logout
Learn, Teach, Earn
Connect with skilled professionals and learners in a vibrant community where knowledge meets opportunity
Get Started
Learn More

Fig 13

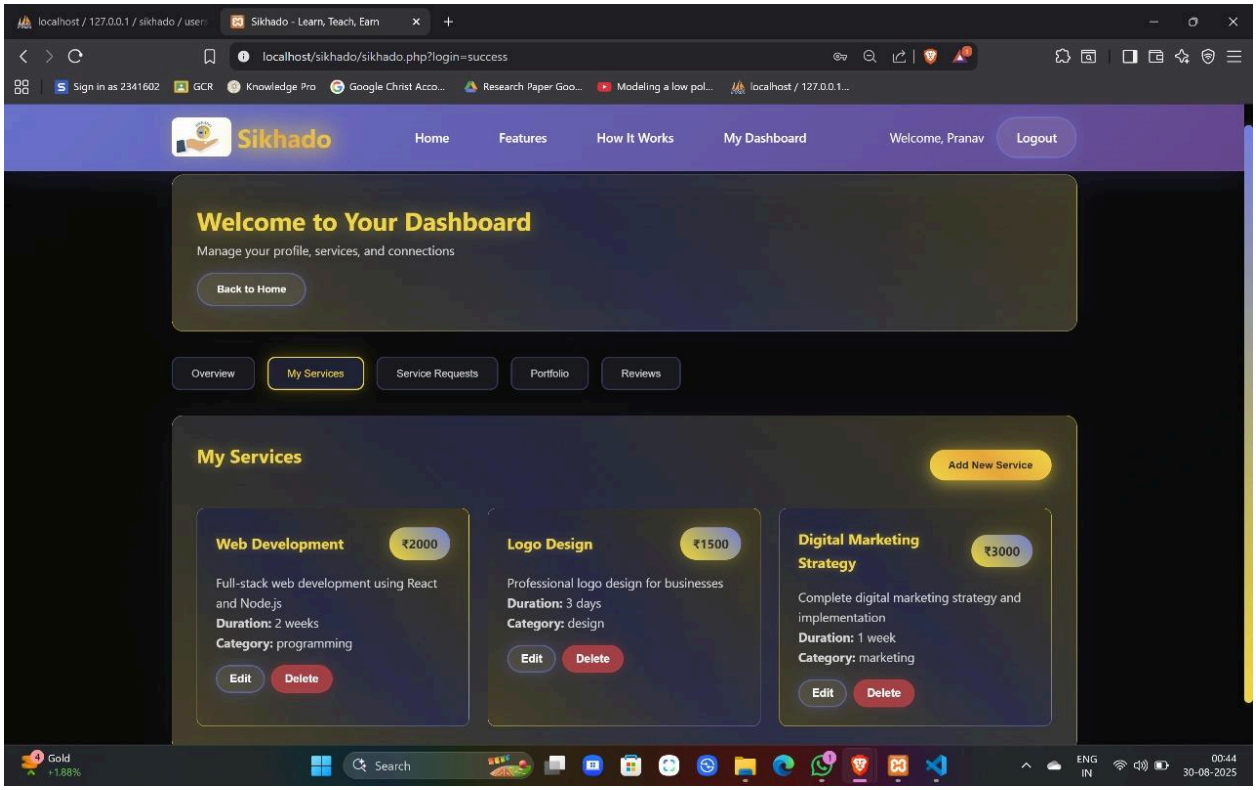
Sikhado - Learn, Teach, Earn
localhost/sikhado/sikhado.php?login=success
Sikhado
Home
Features
How It Works
My Dashboard
Welcome, Pranav
Logout
Welcome to Your Dashboard
Manage your profile, services, and connections
Back to Home
Overview
My Services
Service Requests
Portfolio
Reviews
My Services
Add New Service
Web Development
₹2000
Full-stack web development using React and Node.js
Duration: 2 weeks
Category: programming
Edit
Delete
Logo Design
₹1500
Professional logo design for businesses
Duration: 3 days
Category: design
Edit
Delete
Digital Marketing Strategy
₹3000
Complete digital marketing strategy and implementation
Duration: 1 week
Category: marketing
Edit
Delete

Fig 14

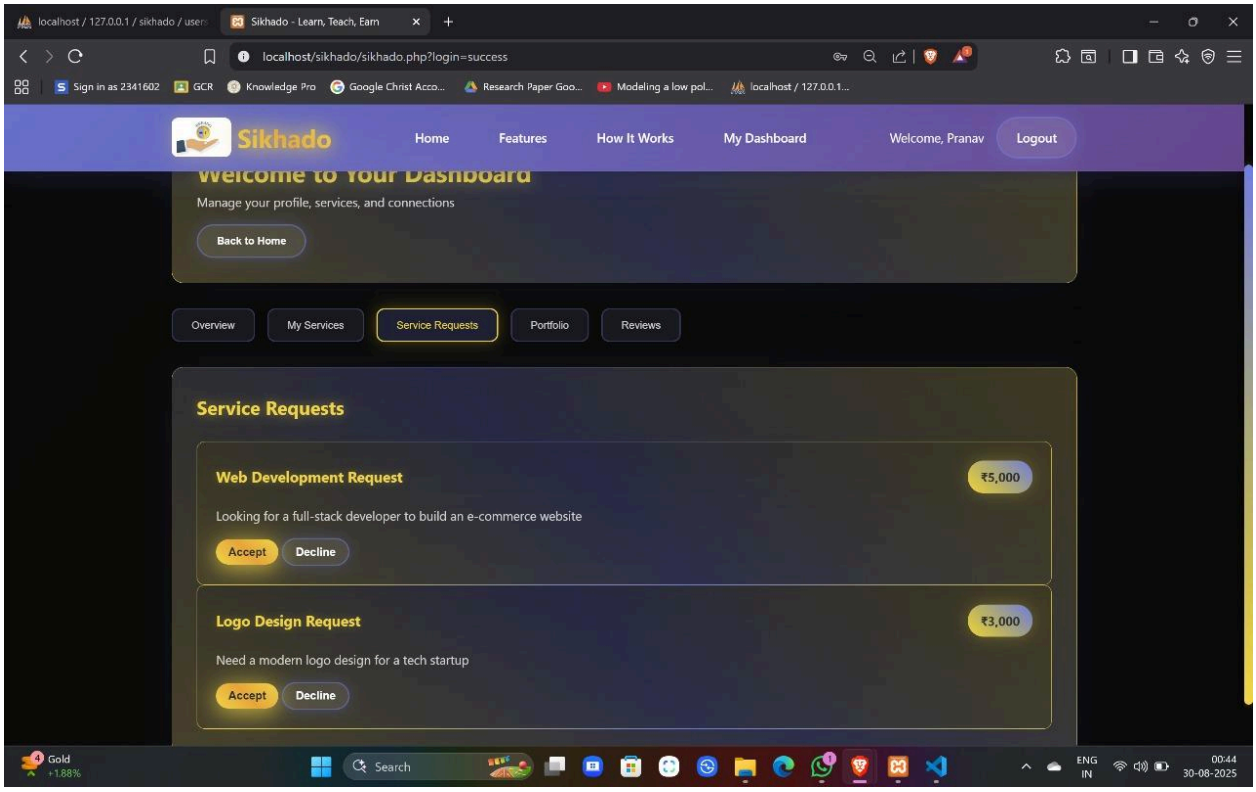
Sikhado - Learn, Teach, Earn
localhost/sikhado/sikhado.php?login=success
Sikhado
Home
Features
How It Works
My Dashboard
Welcome, Pranav
Logout
Manage your profile, services, and connections
Back to Home
Overview
My Services
Service Requests
Portfolio
Reviews
Service Requests
Web Development Request
₹5,000
Looking for a full-stack developer to build an e-commerce website
Accept
Decline
Logo Design Request
₹3,000
Need a modern logo design for a tech startup
Accept
Decline

Fig 15

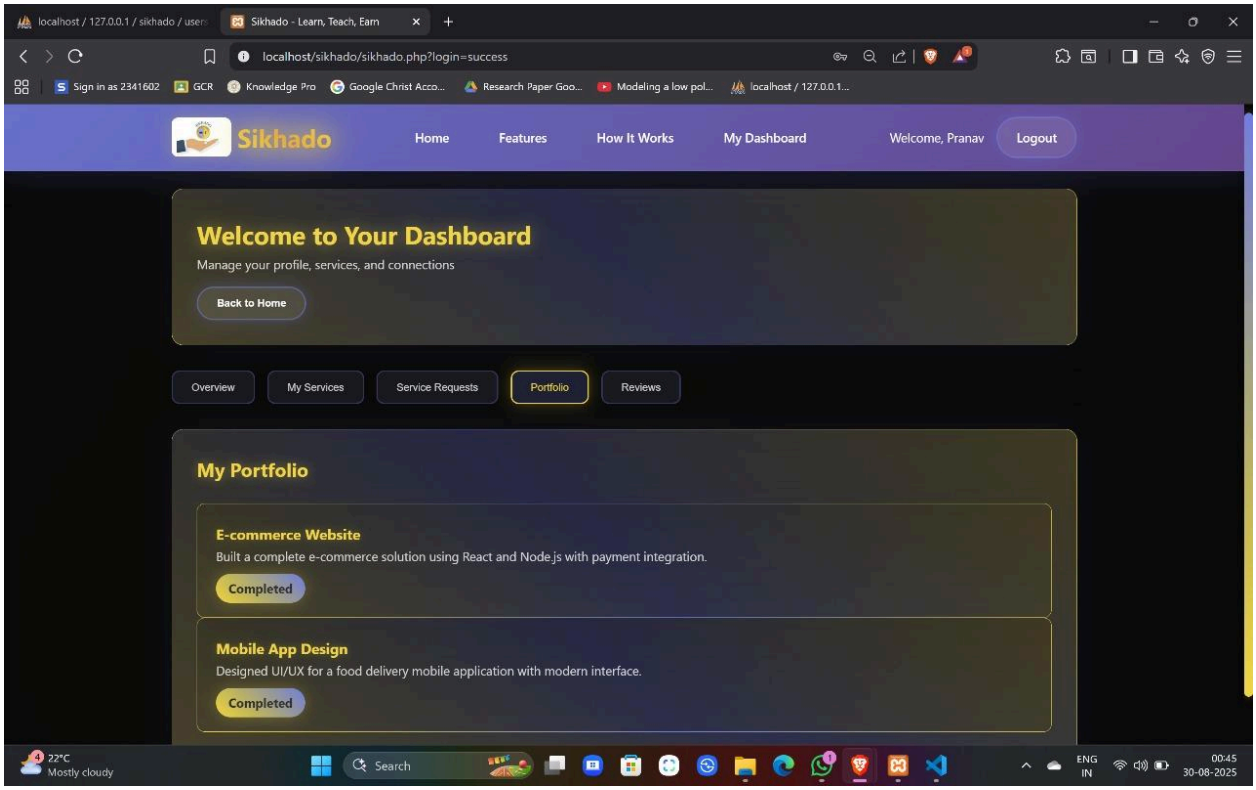
Sikhado - Learn, Teach, Earn
localhost/sikhado/sikhado.php?login=success
Sikhado
Home
Features
How It Works
My Dashboard
Welcome, Pranav
Logout
Welcome to Your Dashboard
Manage your profile, services, and connections
Back to Home
Overview
My Services
Service Requests
Portfolio
Reviews
My Portfolio
E-commerce Website
Built a complete e-commerce solution using React and Node.js with payment integration.
Completed
Mobile App Design
Designed UI/UX for a food delivery mobile application with modern interface.
Completed

Fig 16

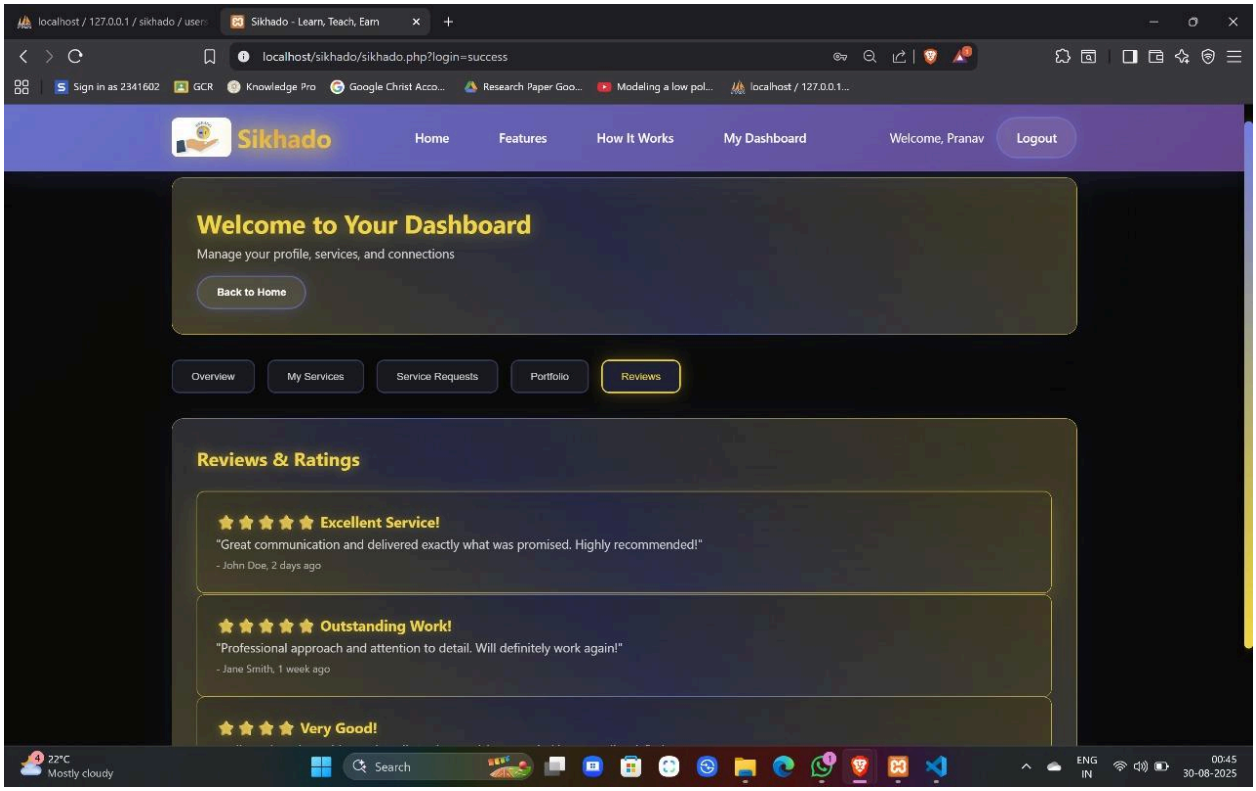
Sikhado - Learn, Teach, Earn
localhost/sikhado/sikhado.php?login=success
Sikhado
Home
Features
How It Works
My Dashboard
Welcome, Pranav
Logout
Welcome to Your Dashboard
Manage your profile, services, and connections
Back to Home
Overview
My Services
Service Requests
Portfolio
Reviews
Reviews & Ratings
Excellent Service!
"Great communication and delivered exactly what was promised. Highly recommended!"
- John Doe, 2 days ago
Outstanding Work!
"Professional approach and attention to detail. Will definitely work again!"
- Jane Smith, 1 week ago
Very Good!

Fig 17

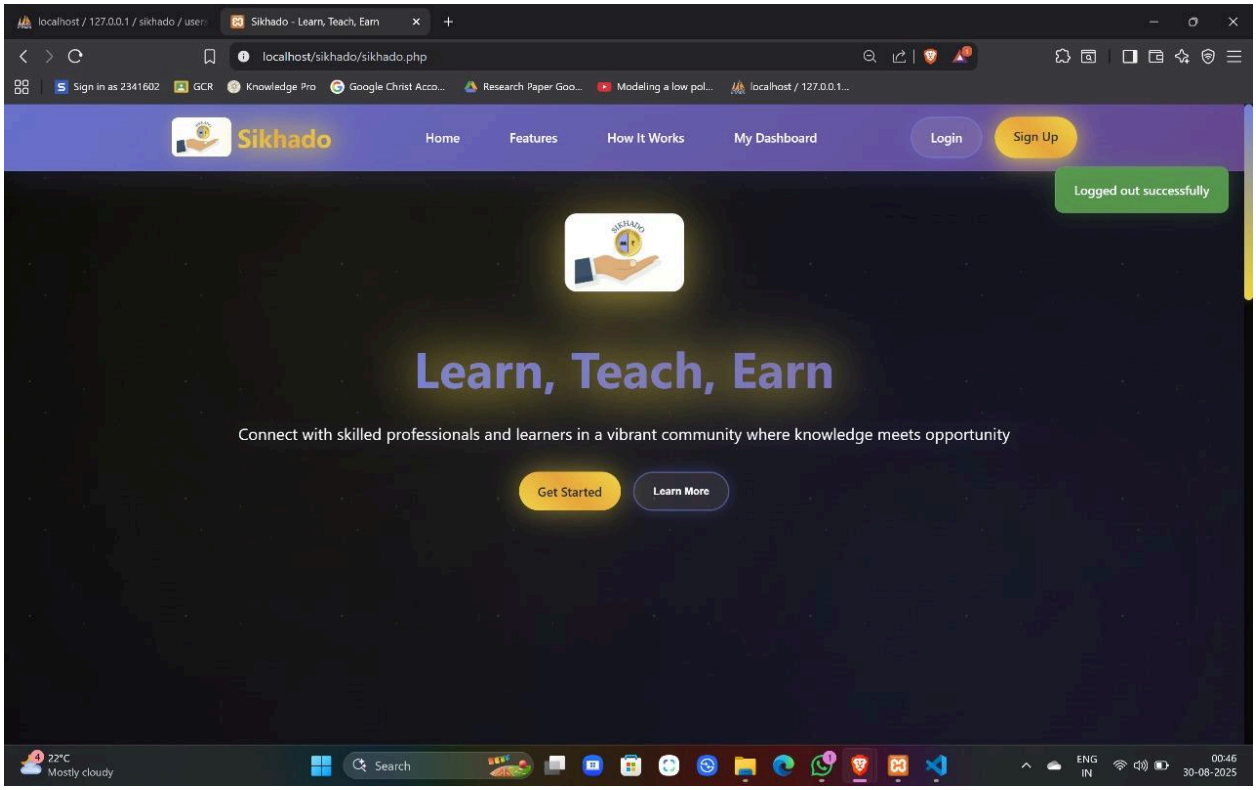
Sikhado - Learn, Teach, Earn
localhost/sikhado/sikhado.php
Sikhado
Home
Features
How It Works
My Dashboard
Login
Sign Up
Logged out successfully
Learn, Teach, Earn
Connect with skilled professionals and learners in a vibrant community where knowledge meets opportunity
Get Started
Learn More

Fig 18

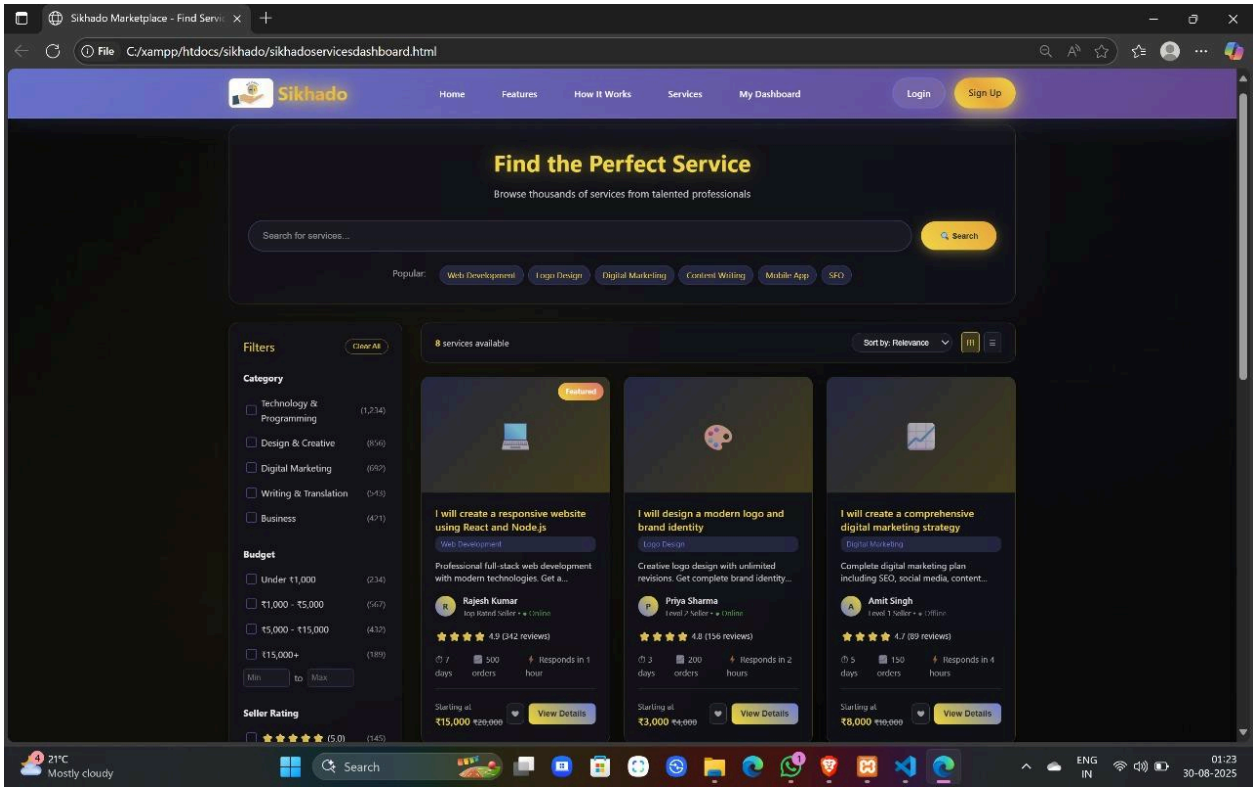
Sikhado Marketplace - Find Servi
C:/xampp/htdocs/sikhado/sikhadoservicesdashboard.html
Sikhado
Home
Features
How It Works
Services
My Dashboard
Login
Sign Up
Find the Perfect Service
Browse thousands of services from talented professionals
Search for services...
Search
Popular:
Web Development
Logo Design
Digital Marketing
Content Writing
Mobile App
SEO
Filters
Clear All
Category
Technology & Programming
Design & Creative
Digital Marketing
Writing & Translation
Business
Budget
Under ₹1,000
₹1,000 - ₹5,000
₹5,000 - ₹15,000
₹15,000+
Seller Rating
8 services available
Sort by: Relevance
I will create a responsive website using React and Node.js
Rajesh Kumar
I will design a modern logo and brand identity
Priya Sharma
I will create a comprehensive digital marketing strategy
Amit Singh
View Details
View Details
View Details

Fig 19

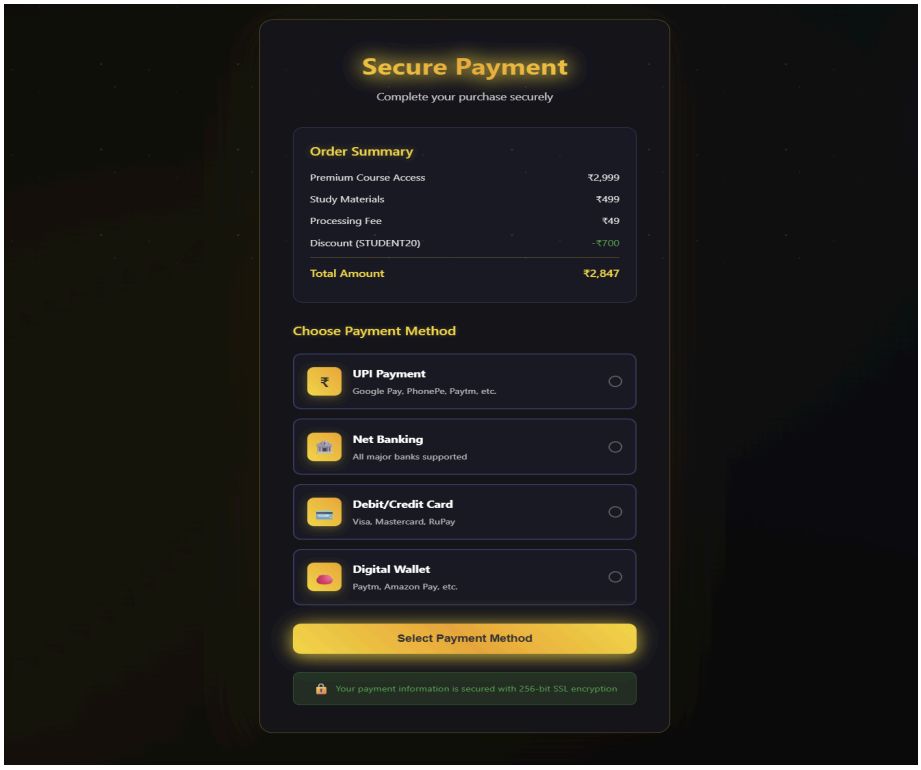
Secure Payment
Complete your purchase securely
Order Summary
Premium Course Access ₹2,999
Study Materials ₹499
Processing Fee ₹49
Discount (STUDENT20) -₹700
Total Amount ₹2,847
Choose Payment Method
UPI Payment
Google Pay, PhonePe, Paytm, etc.
Net Banking
All major banks supported
Debit/Credit Card
Visa, Mastercard, RuPay
Digital Wallet
Paytm, Amazon Pay, etc.
Select Payment Method
Your payment information is secured with 256-bit SSL encryption

Fig 20

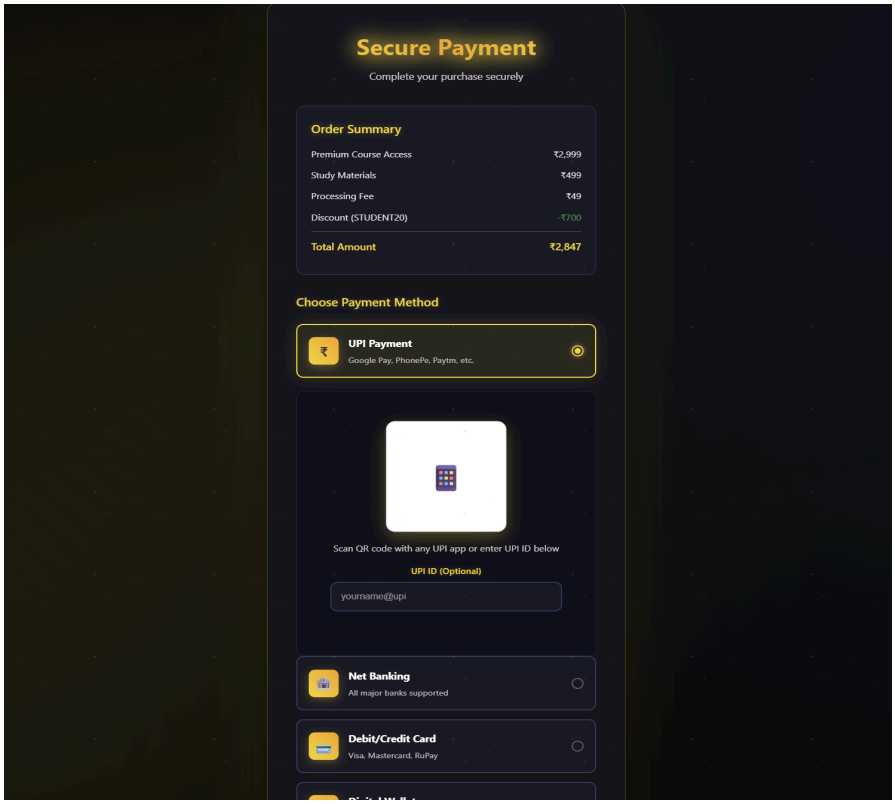
Secure Payment
Complete your purchase securely
Order Summary
Premium Course Access ₹2,999
Study Materials ₹499
Processing Fee ₹49
Discount (STUDENT20) -₹700
Total Amount ₹2,847
Choose Payment Method
UPI Payment
Google Pay, PhonePe, Paytm, etc.
Scan QR code with any UPI app or enter UPI ID below
UPI ID (Optional)
yourname@upi
Net Banking
All major banks supported
Debit/Credit Card
Visa, Mastercard, RuPay

Fig 21

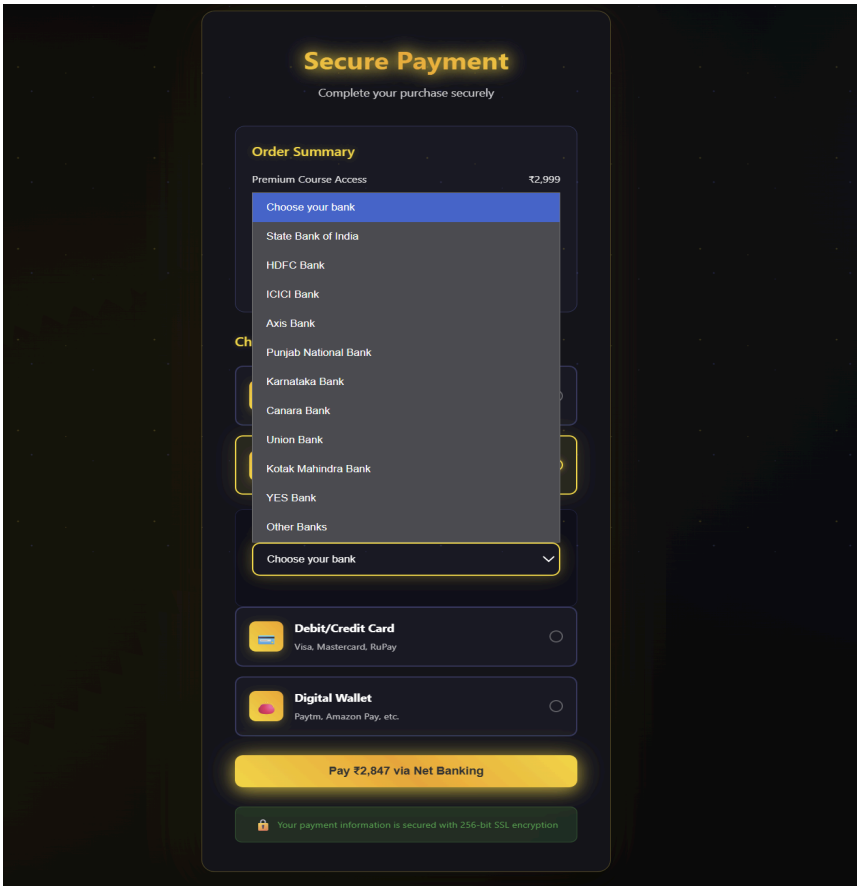
Secure Payment
Complete your purchase securely
Order Summary
Premium Course Access
₹2,999
Choose your bank
State Bank of India
HDFC Bank
ICICI Bank
Axis Bank
Punjab National Bank
Karnataka Bank
Canara Bank
Union Bank
Kotak Mahindra Bank
YES Bank
Other Banks
Choose your bank
Debit/Credit Card
Visa, Mastercard, RuPay
Digital Wallet
Paytm, Amazon Pay, etc.
Pay ₹2,847 via Net Banking
Your payment information is secured with 256-bit SSL encryption

Fig 22

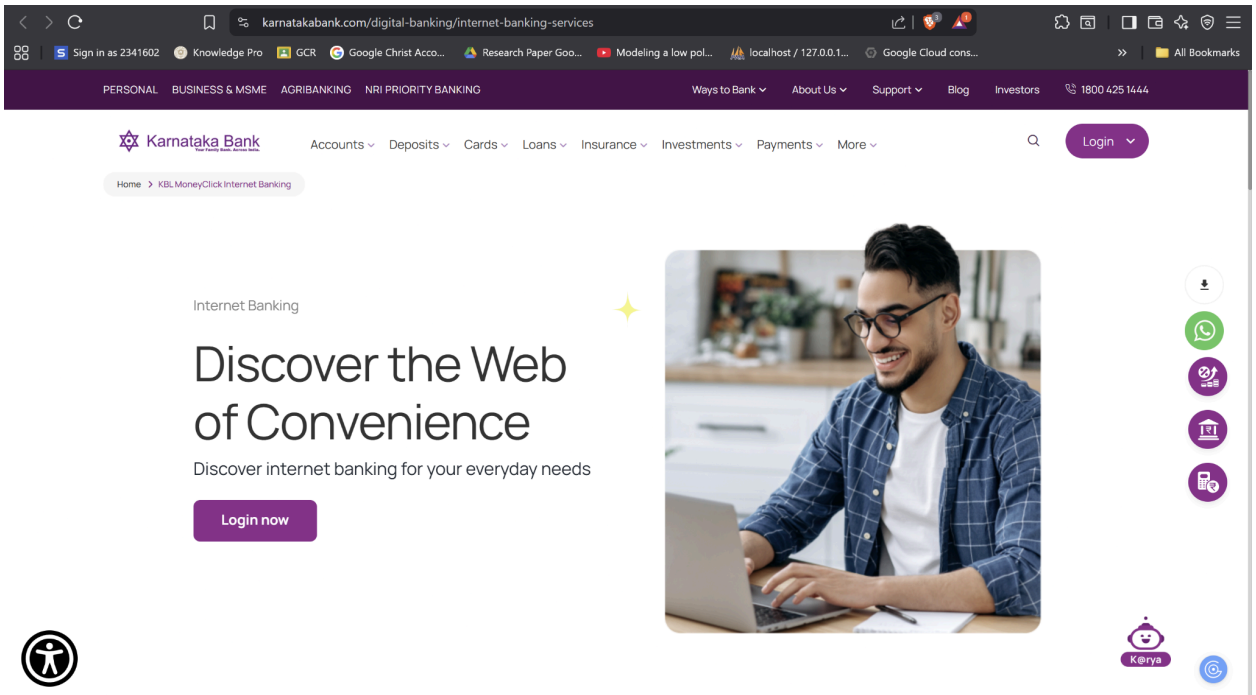
karnatakabank.com/digital-banking/internet-banking-services
PERSONAL
BUSINESS & MSME
AGRIBANKING
NRI PRIORITY BANKING
Ways to Bank
About Us
Support
Blog
Investors
1800 425 1444
Karnataka Bank
Accounts
Deposits
Cards
Loans
Insurance
Investments
Payments
More
Login
Home > KBL MoneyClick Internet Banking
Internet Banking
Discover the Web of Convenience
Discover internet banking for your everyday needs
Login now
K@rya

Fig 23

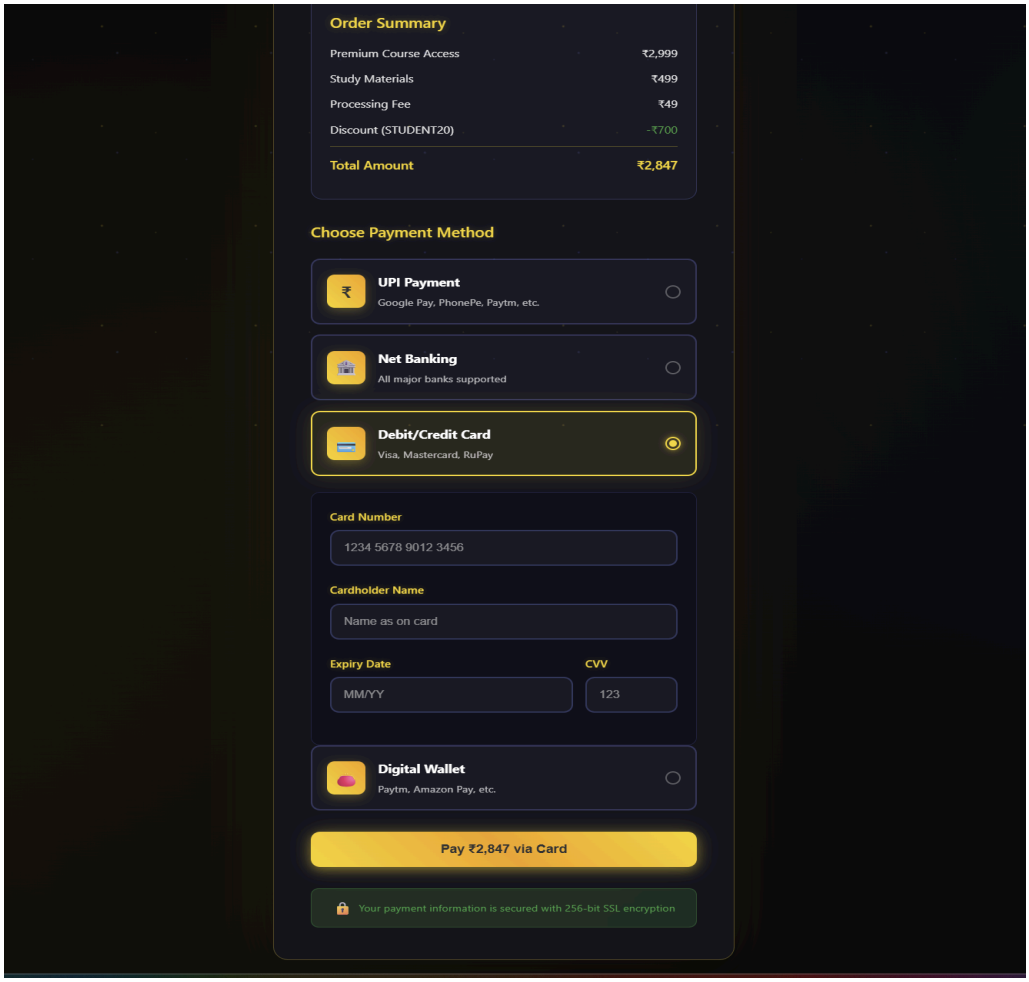
Order Summary
Premium Course Access ₹2,999
Study Materials ₹499
Processing Fee ₹49
Discount (STUDENT20) -₹700
Total Amount ₹2,847
Choose Payment Method
UPI Payment
Google Pay, PhonePe, Paytm, etc.
Net Banking
All major banks supported
Debit/Credit Card
Visa, Mastercard, RuPay
Card Number
1234 5678 9012 3456
Cardholder Name
Name as on card
Expiry Date
MM/YY
CVV
123
Digital Wallet
Paytm, Amazon Pay, etc.
Pay ₹2,847 via Card
Your payment information is secured with 256-bit SSL encryption

Fig 24

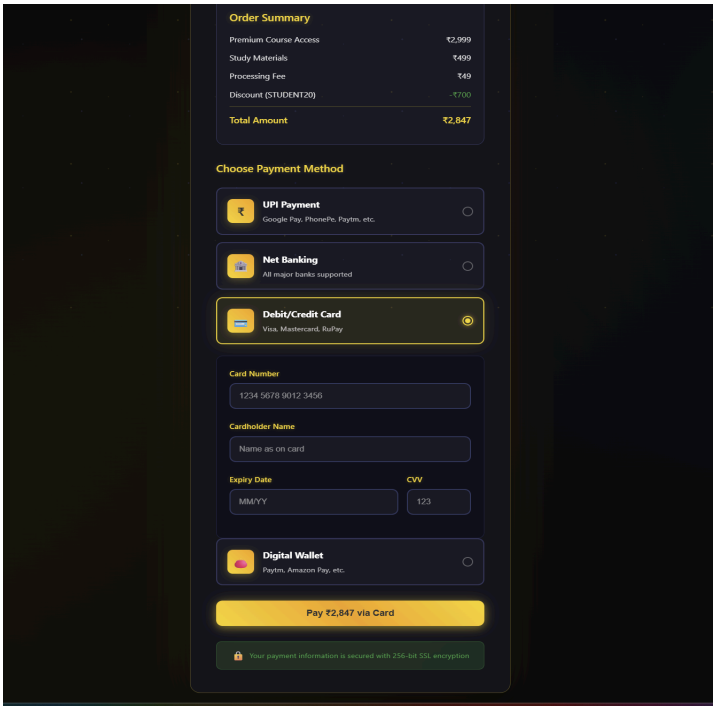
Order Summary
Premium Course Access ₹2,999
Study Materials ₹499
Processing Fee ₹49
Discount (STUDENT20) -₹700
Total Amount ₹2,847
Choose Payment Method
UPI Payment
Google Pay, PhonePe, Paytm, etc.
Net Banking
All major banks supported
Debit/Credit Card
Visa, Mastercard, RuPay
Card Number
1234 5678 9012 3456
Cardholder Name
Name as on card
Expiry Date
MM/YY
CVV
123
Digital Wallet
Paytm, Amazon Pay, etc.
Pay ₹2,847 via Card
Your payment information is secured with 256-bit SSL encryption

Fig 25

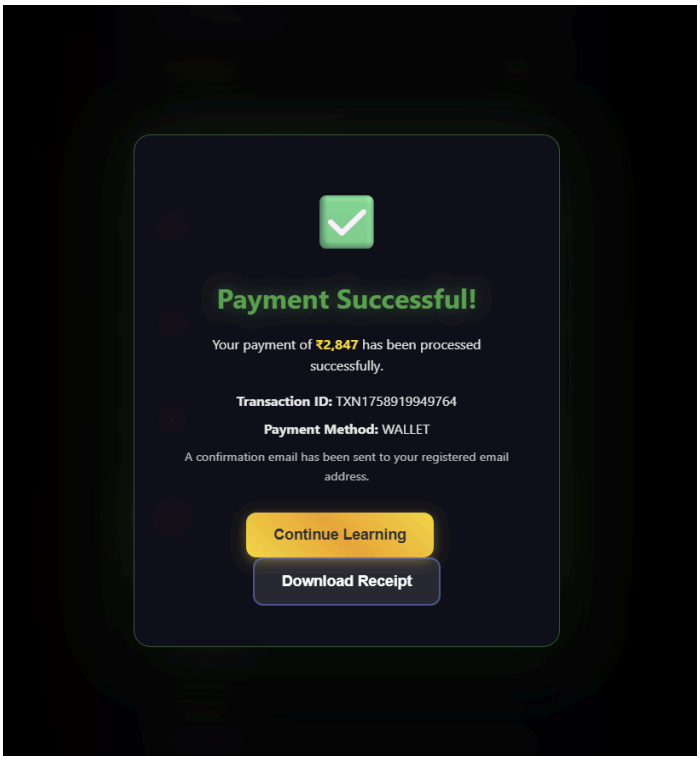
Payment Successful!
Your payment of ₹2,847 has been processed successfully.
Transaction ID: TXN1758919949764
Payment Method: WALLET
A confirmation email has been sent to your registered email address.
Continue Learning
Download Receipt

Fig 26

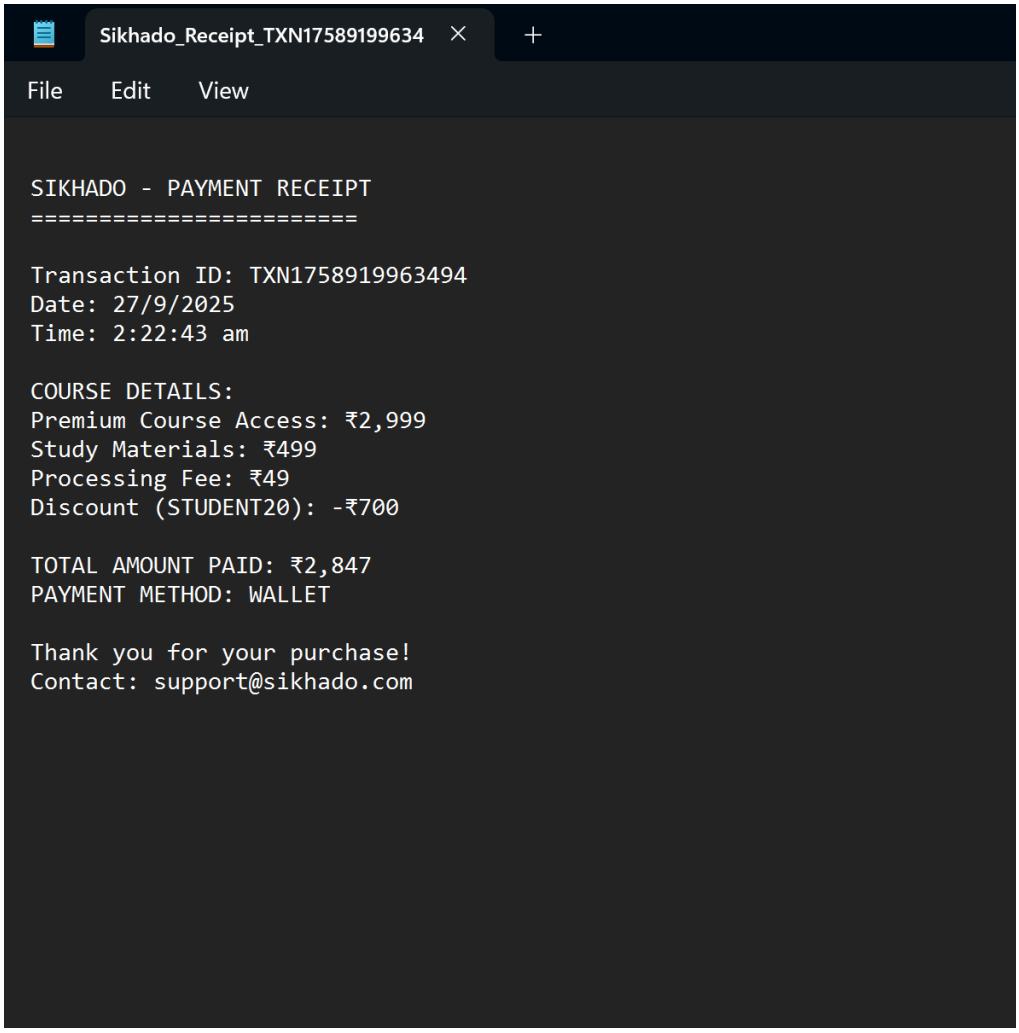
Sikhado_Receipt_TXN17589199634
File
Edit
View
SIKHADO - PAYMENT RECEIPT
==========
Transaction ID: TXN1758919963494
Date: 27/9/2025
Time: 2:22:43 am
COURSE DETAILS:
Premium Course Access: ₹2,999
Study Materials: ₹499
Processing Fee: ₹49
Discount (STUDENT20): -₹700
TOTAL AMOUNT PAID: ₹2,847
PAYMENT METHOD: WALLET
Thank you for your purchase!
Contact: support@sikhado.com

Fig 27

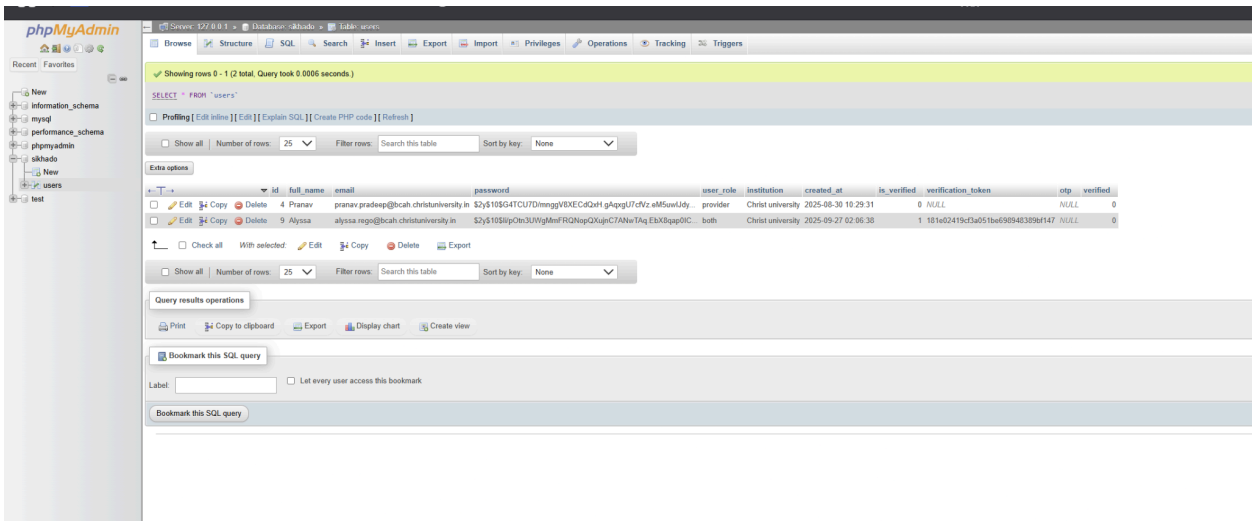
phpMyAdmin
Browse
Structure
SQL
Search
Insert
Export
Import
Privileges
Operations
Tracking
Triggers
Showing rows 0 - 1 (2 total, Query took 0.0006 seconds.)
SELECT * FROM `users`
Query results operations
Bookmark this SQL query

Fig 28

5. TESTING

The testing approach for Sikhado follows a structured, risk-based methodology to ensure correctness, security, reliability, and usability of the platform. Testing covers all critical functionalities including authentication, service management, mentorship, payments, and portfolios. The overall strategy emphasizes early detection of defects (shift-left approach) and includes a mix of automated and manual testing mapped to the functional requirements (FR01–FR10) and security/usability standards outlined in the SRS.

Testing Objectives: The primary goals of testing are to validate the accuracy, reliability, and security of core transactions within the institution-verified ecosystem. This includes ensuring proper authentication, correct execution of service and mentorship workflows, secure payments, and accurate portfolio management.

5.1 Test Strategies

- **Authentication Testing:** in Sikhado focuses on ensuring that users can securely access the platform while maintaining a smooth experience. It covers key modules like signup, login, logout, forgot password, and session management. Proper testing validates that only authorized users can register with academic emails, log in with correct credentials, securely reset passwords, and safely terminate sessions. It also ensures that session management prevents unauthorized access, enforces inactivity timeouts, and maintains role-based access control.

- **Unit Testing:** Focuses on individual modules such as authentication, user profiles, services, mentorship, payments, reviews, and portfolio management. It ensures that each module behaves correctly, enforces role-based access, and handles valid and invalid inputs effectively.

- **Functional Testing:** Validates end-to-end user workflows including onboarding, service

posting and requests, mentorship scheduling, payments, and portfolio updates. It ensures that the system supports smooth interactions for students, faculty, and alumni within the verified academic environment.

- **Integration Testing:** Confirms that different system components work together correctly, including database transactions, authentication services, payment gateways, and notifications. It ensures data integrity, consistent state transitions, and secure handling of cross-service operations.

5.1.1 Authentication Testing

Authentication is a core module of Sikhado, covering user signup, login, logout, and password recovery. Proper testing of these features ensures secure access and smooth user experience.

- **Signup:** Users register using institutional academic emails. Tests validate correct handling of allowed domains, password policies (length, complexity), confirmation email delivery, and account activation. Validation checks ensure users cannot register with non-academic or duplicate emails.

- **Login:** Validates that users can log in using verified credentials. Test cases include successful login, handling of incorrect passwords, locked accounts after repeated failures, session creation, and proper role-based redirection.

- **Logout:** Ensures that active sessions are securely terminated when a user logs out, and that tokens or session data cannot be reused. Logout also updates user activity logs for auditing.

- **Forgot Password / Password Reset:** Validates that users can securely request a password reset via institutional email. Tests check token expiration, uniqueness, and one-time usage, as well as proper handling of invalid or expired links.

- **Session Management:** Ensures that user sessions expire after a defined period of

inactivity, and prevents session hijacking. Multi-device logins are tested for proper session isolation.

Unit tests for authentication validate password encryption, token generation, domain allowlist checks, and role assignment. Functional testing ensures users experience smooth onboarding, secure login/logout flows, and seamless password recovery. Integration testing confirms correct interaction between authentication modules, email services, and the database.

5.1.2 Unit Testing

Functional testing in Sikhado focuses on validating end-to-end workflows from the perspective of students, professors, and alumni. The goal is to ensure that the platform behaves correctly according to the defined functional requirements and that all features are accessible and usable within the verified academic ecosystem.

- **Service and Micro-Job Flow:** Functional tests cover the entire lifecycle of services and micro-jobs. This includes creating service listings, submitting requests, accepting requests, marking tasks as completed, and leaving reviews or ratings. The tests ensure that users with different roles see the correct options, workflows transition correctly, and all related notifications and updates are triggered.

- **Mentorship Flow:** The system allows users to request mentorship sessions. Functional testing ensures that mentorship requests can be created, confirmed by mentors, conducted successfully, and feedback submitted. This also includes verifying that scheduling conflicts are prevented and session durations are tracked accurately.

- **Portfolio and Skills Management:** Users can add, update, and display skills, certificates, and achievements. Functional tests validate that these elements are correctly linked to user profiles, visible to authorized roles only, and updated consistently across the platform.

- **Payments:** Payment functionality is tested for various scenarios, including successful

transactions, declined cards, partial or full refunds, and transaction history accuracy. The platform's escrow-style payment mechanism is also validated to ensure that funds are held and released correctly according to task completion.

- **Admin Controls:** Administrators oversee verification, role assignments, and dispute management. Functional tests verify that admin actions propagate correctly across users, services, and mentorships, maintaining data integrity and enforcing institutional policies.

Additional functional checks include input validation, role-based access control, error message clarity, and usability aspects such as intuitive navigation.

5.1.3 Functional Testing

Functional testing in Sikhado focuses on validating end-to-end workflows from the perspective of students, professors, and alumni. The goal is to ensure that the platform behaves correctly according to the defined functional requirements and that all features are accessible and usable within the verified academic ecosystem.

- **Service and Micro-Job Flow:** Functional tests cover the entire lifecycle of services and micro-jobs. This includes creating service listings, submitting requests, accepting requests, marking tasks as completed, and leaving reviews or ratings. The tests ensure that users with different roles see the correct options, workflows transition correctly, and all related notifications and updates are triggered.

- **Mentorship Flow:** The system allows users to request mentorship sessions. Functional testing ensures that mentorship requests can be created, confirmed by mentors, conducted successfully, and feedback submitted. This also includes verifying that scheduling conflicts are prevented and session durations are tracked accurately.

- **Portfolio and Skills Management:** Users can add, update, and display skills, certificates, and achievements. Functional tests validate that these elements are correctly linked to user profiles, visible to authorized roles only, and updated consistently across

the platform.

- **Payments:** Payment functionality is tested for various scenarios, including successful transactions, declined cards, partial or full refunds, and transaction history accuracy. The platform's escrow-style payment mechanism is also validated to ensure that funds are held and released correctly according to task completion.

- **Admin Controls:** Administrators oversee verification, role assignments, and dispute management. Functional tests verify that admin actions propagate correctly across users, services, and mentorships, maintaining data integrity and enforcing institutional policies.

Additional functional checks include input validation, role-based access control, error message clarity, and usability aspects such as intuitive navigation and responsiveness across devices.

5.1.4 Integration Testing

Integration testing ensures that different components of Sikhado interact seamlessly and that data flows correctly between modules. It confirms that the platform works as a cohesive system rather than isolated parts.

- **Database and Application:** Tests verify transactional integrity for multi-step processes, such as creating a service request, accepting it, marking it complete, and releasing payments. Data consistency is ensured across all related tables and records.

- **Authentication Services:** Integration tests validate proper communication between the application, email verification services, and session management. This includes token issuance, expiration, and secure handling of login/logout flows.

- **Payment Gateway Integration:** The system is tested end-to-end with payment gateways to ensure that transactions are processed securely, webhooks are handled correctly, and refunds or cancellations update both user accounts and service states.

- **Notifications and Events:** Event-driven notifications, such as status updates for services, mentorship sessions, or payments, are validated for timely delivery and accurate content across modules.

Non-functional integration checks include:

- **Performance:** Ensuring that key operations, such as retrieving services or processing payments, are completed within acceptable response times.
- **Security:** Verifying protection against unauthorized access, data leaks, and injection attacks.
- **Exit Criteria:** Integration testing is considered complete when all interface contracts pass successfully, data flows are verified across modules, all critical defects are resolved, and the platform demonstrates stable, secure, and reliable behavior for all user roles.

6. CONCLUSION

The development and implementation of Sikhado represents a significant advancement in academic networking platforms, addressing critical gaps that exist in current educational technology ecosystems. Through comprehensive analysis and systematic development, this research has demonstrated the viability and necessity of institution-verified academic networking platforms that prioritize security, trust, and educational relevance over commercial interests.

The literature review revealed substantial evidence supporting peer mentoring and academic social networking as powerful tools for student success, with studies consistently showing improvements in academic performance, retention rates, and professional development [5; 6]. However, existing platforms like LinkedIn, Fiverr, and Upwork, while successful in commercial contexts, fundamentally lack the institutional verification mechanisms and role-based access controls necessary for creating truly secure academic environments. This research gap provided the foundation for Sikhado's unique value proposition as a closed, institution-specific ecosystem.

The system design and implementation process successfully addressed all ten functional requirements (FR01-FR10), from user authentication and role-based access control to secure payment integration and responsive user interfaces. The database architecture, featuring eleven interconnected entities, ensures data integrity while supporting complex workflows involving service requests, mentorship sessions, and secure transactions. The comprehensive testing strategy, encompassing unit, functional, and integration testing, validated the platform's reliability and security across all user roles and critical workflows.

Sikhado's alignment with United Nations Sustainable Development Goals 4 and 8 demonstrates its potential for broader societal impact. By promoting quality education through structured peer mentoring and knowledge sharing [SDG 4], while simultaneously creating opportunities for decent work and economic growth through verified micro-services within academic communities [SDG 8], the platform addresses both educational and economic empowerment needs of students. This dual focus distinguishes Sikhado from traditional academic platforms that typically address only one of these dimensions.

The implementation of institutional verification as a core feature addresses a fundamental limitation identified in existing systems. By requiring academic email authentication and implementing role-based access controls, Sikhado creates a trusted environment where interactions carry institutional credibility. This approach not only enhances security but also ensures that all exchanges—whether mentorship, skill-sharing, or micro-services—occur within a context of verified academic legitimacy.

The platform's emphasis on portfolio development and rating systems creates additional value by enabling students to build credible academic and professional profiles within their institutional ecosystem. Unlike open platforms where student achievements may be overshadowed by experienced professionals, Sikhado provides a protected space for skill development and recognition among peers, faculty, and alumni.

However, several limitations and areas for future research emerge from this study. The current implementation focuses on single-institution deployment, which may limit cross-institutional collaboration opportunities that could benefit from verified academic networking. Future iterations could explore secure inter-institutional connections while maintaining the core security and verification principles. Additionally, the platform's effectiveness will ultimately depend on institutional adoption rates and active participation from all stakeholder groups—students, faculty, and alumni.

The testing results demonstrate technical viability, but long-term user engagement studies will be necessary to validate the platform's educational and economic impact claims. Metrics such as mentorship session completion rates, skill development outcomes, and student earning potential through micro-services will provide crucial data for platform optimization and institutional decision-making.

In conclusion, Sikhado represents a novel approach to academic networking that successfully bridges the gap between learning and earning while maintaining institutional integrity. By combining verified access, structured mentorship, secure payments, and comprehensive portfolio management within a single platform, it creates an ecosystem that serves both immediate educational needs and long-term professional development goals. The research contributes to the growing body of literature on educational technology while providing a practical framework for

institutions seeking to enhance student engagement, skill development, and economic empowerment through secure, verified digital platforms. As educational institutions increasingly recognize the importance of practical skill development alongside traditional academic learning, platforms like Sikhado offer a promising pathway for creating more comprehensive, supportive, and economically viable educational ecosystems.

7. REFERENCES

[1] M. Thelwall and K. Kousha, "Academic social networking sites: Comparative analysis of ResearchGate, Academia.edu, Mendeley and Zotero," Journal of Data and Information Science, vol. 2, no. 2, pp. 20-34, 2017.

[2] K. Jordan, "From Social Networks to Publishing Platforms: A Review of the History and Scholarship of Academic Social Network Sites," Frontiers in Digital Humanities, vol. 6, no. 5, pp. 1-15, 2019.

[3] R. Van Noorden, "Scientists and the social network," Nature, vol. 512, no. 7513, pp. 126-129, Aug. 2014.

[4] S. Ovadia, "ResearchGate and Academia.edu: Academic Social Networks," Behavioral & Social Sciences Librarian, vol. 33, no. 3, pp. 165-169, 2014.

[5] Systematic Review Team, "The benefits of peer mentoring in higher education: findings from a systematic review," Journal of Learning Development in Higher Education, Issue 31, 2024.

[6] S. Gehreke, "Effectiveness of peer mentoring in the study entry phase: A systematic review," Review of Education, vol. 12, no. 1, 2024.

[7] A. Al-Rahmi et al., "Social media use in collaborative learning: The effect on learning success with the moderating role of cyberstalking and cyberbullying," Interactive Learning Environments, vol. 30, no. 8, pp. 1434-1447, 2022.

[8] W. Al-Rahmi et al., "Integrating innovation diffusion theory with technology acceptance model: Supporting students' attitude towards using a massive open online courses (MOOCs) systems," Interactive Learning Environments, vol. 29, no. 9, pp. 1380-1392, 2021.

[9] K. Bunting et al., "Students as partners in peer mentoring: Exploring the relational dimensions of partnership," Innovative Higher Education, vol. 46, no. 1, pp. 78-89, 2021.

[10] Center for Engaged Learning, "Peer mentoring programs and outcomes for diverse student populations," Journal of Diversity in Higher Education, vol. 15, no. 3, pp. 234-248, 2022.

[11] Y. Niyazov et al., "Open predatory journals: The hijackers of scholarly communication," PLOS ONE, vol. 11, no. 6, pp. 23-41, Jun. 2016.