Tribhuvan University

Faculty of Humanities and Social Studies

SkillQuest - Freelancing platform for student

A PROJECT REPORT

Submitted to:

Department of Computer Application

Southwestern state college

In the partial fulfillment of the requirements for the Bachelors in Computer Application

Submitted by:

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December 2025 A.D

Under the supervision of

Mr. Anup Raj Paudel

TRIBHUVAN UNIVERSITY

Faculty of Humanities and Social Sciences

Southwestern State College

SUPERVISOR'S RECOMMENDATION

I hereby recommend that this project entitled "SkillQuest – Freelancing Platform for Students", prepared by Rojip Chhantyal, under my supervision, in partial fulfillment of the requirements for the degree of Bachelor of Computer Application (BCA), is recommended for the final evaluation.

Mr. Anup Raj Paudel

SUPERVISOR

Southwestern State College

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LETTER OF APPROVAL

This is to certify that this project entitled "SkillQuest – Freelancing Platform for Students", prepared by Rojip Chhantyal, in partial fulfillment of the requirements for the degree of Bachelor of Computer Application (BCA), has been evaluated. In our opinion, it is satisfactory in scope and quality as a project for the required degree.

Mr. Anup Raj Paudel **Supervisor** **Southwestern State College, Basundhara**	**Mr. Anup Raj Paudel** **BCA HOD** **BCA Department** **Southwestern State College, Basundhara**

ABSTRACT

SkillQuest is a web-based freelancing platform designed to help students earn income and gain real-world experience while studying. The system provides a simple and student-friendly environment where local clients and small businesses can post small tasks and students can apply, complete work, and receive feedback. The platform mainly focuses on affordable, short-term tasks suitable for beginner-level students.

The system is developed using HTML, CSS, JavaScript, JSP, Java Servlet, and MySQL. It allows students and clients to register, log in, manage profiles, post tasks, apply for jobs, and track task status through a dashboard. Special attention is given to a simple user interface, fast performance, and secure handling of user data to ensure ease of use for beginners.

SkillQuest also includes an admin module that enables administrators to manage users, tasks, and system activities effectively. By connecting students with local opportunities, the system supports skill development, practical learning, and local business needs. Overall, the project demonstrates how a student-focused freelancing platform can reduce dependency on global platforms and provide a secure, efficient, and practical solution for students and small businesses in Nepal.

Keywords: Student freelancing, task management, JSP, Java Servlet, MySQL, web application, skill development.

ACKNOWLEDGMENT

I would like to express my sincere gratitude to everyone who has contributed to the successful completion of this project, “SkillQuest – Freelancing Platform for Students.”

I am thankful to Southwestern State College for providing me with the opportunity and platform to enhance my knowledge and skills through this project. I would also like to express my heartfelt gratitude to my project supervisor and coordinator for their valuable guidance, continuous support, and encouragement throughout all stages of the project. Their suggestions and feedback were instrumental in the successful completion of this work.

I would like to extend my appreciation to the faculty members of the Department of Computer Application for their support and guidance during my academic journey. Finally, I would like to thank everyone who took the time to review this project report. I hope this project provides a clear understanding of the system and proves useful for future reference.

Sincerely,
Rojip Chhantyal

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LIST OF ABBREVIATIONS

CSS	Cascading Style Sheet
DFD	Data Flow Diagram
ERD	Entity Relational Diagram
HTML	Hypertext Markup Language
JS	JavaScript
JSP/Servlet	Java library
SQL	Structure Query Language

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CHAPTER 1
INTRODUCTION

1.1 Introduction

SkillQuest is a web-based freelancing platform designed specifically for students, enabling them to explore, apply for, and complete small-scale projects online. The platform allows students to gain practical experience and earn income while studying, while providing local clients with an accessible and reliable way to find affordable, skilled students for tasks such as poster design, web development, and data entry.

SkillQuest offers a user-friendly interface that simplifies browsing tasks, applying for projects, and tracking progress. The admin dashboard helps manage user accounts, task postings, and progress tracking efficiently, making it possible to handle a growing number of students, clients, and tasks in a well-organized manner.

Students can register, create skill-based profiles, view available tasks, apply for work, and monitor the status of their applications. Clients can post tasks with specific requirements, review applications, hire suitable candidates, and provide ratings or feedback. This system ensures smooth communication, reliable task completion, and an enhanced user experience for all stakeholders.

The platform is developed using HTML and CSS for a responsive and visually appealing front-end, JavaScript for interactive features, and Servlets with JSP for server-side processing and dynamic content generation. MySQL is used for secure data storage, retrieval, and management. Servlets handle business logic and database interactions, while JSP dynamically generates the web pages viewed by users. Together, these technologies provide a robust, scalable, and efficient foundation for SkillQuest, enabling students and clients to engage in a seamless online freelancing experience.

1.2 Problem Statement

In Nepal, students face numerous challenges when trying to gain practical experience and earn while studying. Existing global freelancing platforms like Upwork and Fiverr are highly competitive, take high service fees, and are not tailored for students, making it difficult for them to secure small projects. Many local clients require affordable help for tasks such as poster design, web development, and data entry, but struggle to find trustworthy students due to the lack of a dedicated platform.

Traditional informal methods, such as posting jobs on social media or relying on word-of-mouth, are inefficient, unorganized, and often unreliable. Students miss opportunities to apply their academic knowledge in real-world projects, while clients face delays, inconsistent quality, and limited access to skilled freelancers. This gap reduces students' chances to develop their skills, earn income, and build portfolios, while local businesses remain underserved.

SkillQuest aims to address these challenges by providing a secure, user-friendly, and student-focused digital platform. Students can register, create skill-based profiles, browse tasks, apply for projects, and track their progress. Clients can post tasks, review applications, hire suitable students, and provide feedback. By using HTML, CSS, JavaScript for the front-end, and JSP with Servlets and MySQL for server-side processing and data management, SkillQuest bridges the gap between students and clients, making freelancing accessible, organized, and efficient. This platform will empower students to gain experience, earn income, and support local businesses in Nepal's growing digital economy.

1.3 Objectives

- Connect students with clients for small tasks.
- Help students gain real-world project experience.
- Support local businesses with affordable services.

1.4 Scopes and Limitations

1.4.1 Scopes

The scope of SkillQuest is to provide an online freelancing platform where students can easily browse tasks, apply for projects, and track their work. The system includes user registration and login, student and client profiles, task posting and application, progress tracking, and feedback or ratings. Admins can manage users, tasks, and oversee the overall system. Built using HTML, CSS, JavaScript, JSP, Servlets, and MySQL, the platform ensures reliability, security, and a user-friendly experience. SkillQuest aims to address the challenges students face in finding freelance work and to support local businesses with affordable, skilled services.

1.4.2 Limitations

- Initially, the platform will serve only local students and clients in Nepal.
- Multi-language support will not be available in the first version.
- The system will launch with a limited set of task categories, focusing on high-demand projects
- Users may have restricted ability to modify or cancel tasks/applications after submission, so careful review is necessary.

1.5 Development Methodology

A SkillQuest is developed using the Agile (iterative) methodology, allowing features to be built, tested, and improved in cycles. This approach enables continuous refinement of requirements, enhancement of functionalities, and gradual improvement of the platform for a robust and user-friendly student freelancing system.

It requires the following stages:

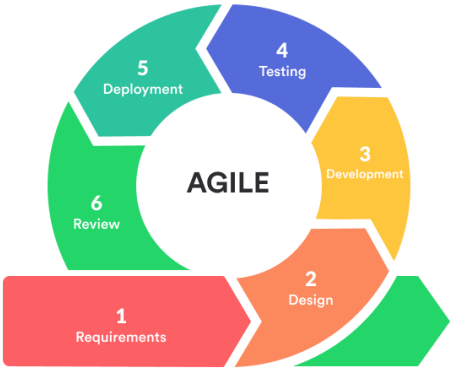

Figure 1.1 Agile Model

Requirement

All possible requirements for SkillQuest are captured in this phase. This includes functional requirements (what the system should do, such as task posting, application handling, and profile management) and non-functional requirements (performance, security, scalability, and usability).

System Design

The system design phase focuses on developing the architectural design of SkillQuest based on the requirements. This includes both functional and non-functional requirements, ensuring a secure, scalable, and user-friendly platform for students and clients.

Implementation

The implementation phase involves developing SkillQuest in smaller functional units, such as student login, client task posting, dashboards, and admin management. Each unit is developed and unit-tested to ensure it works as intended. This method aligns with the iterative/Agile approach, allowing continuous improvement and verification of each feature before moving to the next.

Testing

After implementation, SkillQuest is thoroughly **tested** to ensure all requirements are met. Individual units are tested first, followed by **integration testing** to verify that all components work together. Finally, **system testing** ensures the complete platform functions reliably and efficiently.

Maintenance

Once deployed, SkillQuest may encounter issues in the client environment. Maintenance involves releasing patches, fixing bugs, and improving the system by adding new features or updates. This ensures SkillQuest remains secure, efficient, and functional over time, with improved versions released as needed.

1.6 Report Organization

Chapter 1 introduces the SkillQuest system, highlighting how it connects students with clients for freelance tasks. It presents the problem statement, objectives, scope, limitations, and the development methodology used for building the platform.

Chapter 2 provides a background study of the project, emphasizing the need for a student-focused freelancing platform in Nepal. It includes a literature review of existing freelancing systems and highlights the gaps that SkillQuest aims to address.

Chapter 3 focuses on the system analysis and design of SkillQuest, outlining the development process and architectural structure of the platform. It presents design elements such as use case diagrams, Gantt charts, entity-relationship diagrams, process modeling (Level 0 and Level 1 DFD), system architecture, database schema design, interface design, and physical DFDs. These components collectively define how the system functions, interacts, and is structured.

Chapter 4 elaborates on the implementation and testing phases of the SkillQuest project. It introduces the tools and technologies used for front-end and back-end development, including HTML, CSS, JavaScript, JSP, Servlets, and MySQL, and explains their purposes. Additionally, it outlines the testing procedures, unit and system testing, and provides details of each module developed, such as student dashboard, client task management, and admin control.

Chapter 5 concludes the report by summarizing the project's key accomplishments, major findings, and the overall outcomes of the development process. It includes recommendations for potential future enhancements to functionality and user experience, addresses the system's limitations, and evaluates how effectively the project's objectives and scope were achieved.

CHAPTER 2 BACKGROUND STUDY AND LITERATURE REVIEW

2.1 Background Study

With the growing demand for online work and digital services, freelancing has become an important way for students to gain experience and earn income. In Nepal, students often face challenges in finding small projects due to competition on global platforms and a lack of student-focused systems. Local businesses and clients frequently need affordable, skilled assistance for tasks such as poster design, web development, and data entry but struggle to find reliable resources.

SkillQuest addresses these issues by providing a dedicated online platform where students can easily browse tasks, apply for projects, and track their progress. Using features like task search, categories, and profile management, students can find suitable work efficiently, while clients can post tasks, review applications, and provide feedback. This platform simplifies the freelancing process, saves time, and ensures a more organized workflow. For administrators, SkillQuest offers tools to manage user accounts, tasks, and system operations, reducing manual effort and improving overall efficiency for all stakeholders.

2.2 Literature review

The rise of online freelancing platforms marks a significant shift in how students and clients engage in small projects. Early studies highlight the convenience and accessibility offered by these platforms, allowing students to browse available tasks, submit applications, and complete projects from anywhere. Research also shows that online freelancing marketplaces address gaps in traditional informal methods by providing structured task management, secure communication, and reliable payment systems. Many studies have focused on user experience in digital freelance platforms, analyzing how clear task descriptions, easy-to-use interfaces, and feedback mechanisms influence user participation and satisfaction. Findings suggest that platforms with organized workflows and transparent evaluation systems improve student engagement and overall platform efficiency.

Recent research indicates that students prefer online freelancing platforms due to flexibility, skill development opportunities, and the potential to earn income while studying. Local businesses and clients also benefit from these platforms, gaining access to affordable, skilled labor for small tasks such as graphic design, web fixes, and data entry. However, challenges remain, including difficulties in client-student matching, trust, and secure payment processing. Studies emphasize that a dedicated, student-focused platform can bridge these gaps by providing verified users, task tracking, and a structured feedback system. In the context of Nepal, platforms like SkillQuest can play a vital role in enabling students to gain practical experience, earn income, and support local businesses efficiently, while fostering a safe and organized digital freelancing environment.

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CHAPTER 3

SYSTEM ANANLYSIS AND DESIGN

3.1 System Analysis

The system analysis phase for SkillQuest focused on understanding the needs of students and clients for a dedicated freelancing platform. This involved examining existing freelancing systems such as Upwork, Fiverr, and Freelancer.com to identify features like task posting, application management, secure payments, and feedback mechanisms. The analysis helped establish clear functional requirements for all users, ensuring that students can browse and apply for tasks while clients can post tasks, review applications, and provide ratings. The main goal of this study was to ensure the software effectively addresses the challenges faced by students and small clients in Nepal, providing a reliable, efficient, and user-friendly platform.

3.1.1 Requirement Analysis

The requirement analysis for SkillQuest focused on identifying the needs of students, clients, and administrators to build a dedicated freelancing platform. Existing online freelancing systems such as Upwork and Fiverr were examined to understand key features like task posting, application management, secure payments, and feedback mechanisms. Based on this study, the functional requirements were defined: students must be able to register, create profiles, browse tasks, apply for projects, track progress, and receive payments; clients must be able to register, post tasks with details and budgets, review applications, hire freelancers, and provide ratings or reviews; administrators must manage users, tasks, and overall system operations efficiently. These requirements serve as a foundation for system design and development, ensuring that SkillQuest provides a reliable, user-friendly, and efficient platform for students to gain experience and for clients to access affordable, skilled assistance.

i. Functional Requirement

SkillQuest is a web application designed for interactions between students, clients, and administrators. It will feature a user-friendly interface enabling students to browse available tasks, view task details, apply for projects, and receive payments securely. The system will also support efficient task and user management, allowing clients to post

tasks, track applications, and provide feedback, while administrators can manage users, tasks, and system operations effectively.

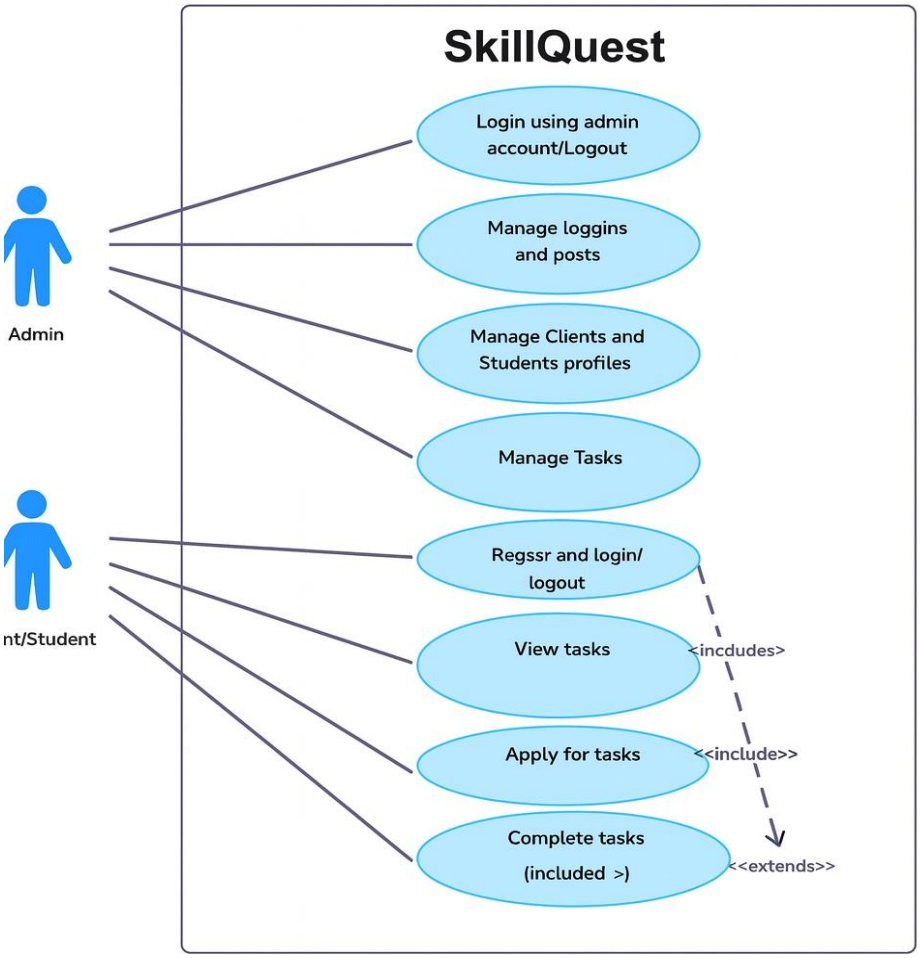

Figure 3. 1 Use case diagram of SkillQuest

Admin:

Admins must be authenticated before accessing the system. Once logged in, they can access the admin dashboard to manage all platform operations. This includes adding new tasks, editing task details, reviewing student and client profiles, monitoring task applications, approving completed tasks, and managing feedback and ratings to ensure smooth platform operation.

Customer:

Students can view and search available tasks on the platform. They must register and log in to create a profile, apply for tasks, track task progress, and receive payments. Clients can post tasks with details and budgets, review student applications, hire students, and provide ratings or feedback after task completion. Both students and clients must be logged in to perform their respective actions on the system.

ii. Non-functional Requirement

a. **Simple and easy-to-use interface:** Ensures intuitive navigation for both students and clients.
b. **Scalable for future growth:** Can accommodate more users, tasks, and features over time.
c. **Fast system performance:** Quick task browsing, application submission, and profile updates.
d. **Secure data handling:** Protects user information, task details, and payment data.
e. **Low system and storage requirements:** Runs efficiently even on devices with limited resources.

3.1.2 Feasibility Study

After analyzing the required functionalities for SkillQuest, a feasibility study was conducted to determine whether the proposed solution is practical and achievable.

a. **Economic feasibility**

The resources required to develop SkillQuest are minimal and cost-effective. The project uses easily accessible hardware and open-source technologies such as HTML, CSS, JavaScript, JSP, Servlets, and MySQL. No significant capital investment is needed, and the only recurring expenses include internet, electricity, and optional maintenance.

b. **Technical Feasibility**

SkillQuest is technically feasible because the necessary tools and technologies are readily available and well-supported. The front-end uses HTML, CSS, and JavaScript to provide a responsive and interactive user interface. The back-end is developed using JSP and Servlets with MySQL for secure data storage and efficient system operations. These widely used technologies make development and maintenance straightforward.

c. **Operational feasibility**

The platform is easy to operate, requiring only basic computer and internet knowledge. Students can browse tasks, apply for projects, and track progress with ease, while clients can post tasks, review applications, and provide feedback. The admin dashboard allows simple management of users, tasks, and platform operations, ensuring smooth operation for all stakeholders.

d. **Schedule feasibility**

The project is achievable within the given timeframe using an iterative development model. Development is divided into manageable cycles, with each iteration focusing on refining specific features. This approach ensures organized, flexible progress and timely completion of the SkillQuest platform.

Table 3. 2 Gantt Table

Task	Start Date	End Date	Duration
Requirement Gathering	2/5/2082	23/5/2082	21
Design & Development	23/5/2082	19/6/2082	26
Implementation	20/6/2082	20/7/2082	30
Testing	21/7/2082	20/8/2082	29
Documentation	21/7/2082	11/9/2082	20

Table 3. 2 Gantt Chart of SkillQuest

3.1.3 Data Modeling

Data modeling is a crucial step in planning how information will be organized and managed within the SkillQuest system. It involves identifying the types of data the platform will store, defining relationships between students, clients, tasks, and administrators, and establishing rules for how this data interacts. Data models provide a blueprint that guides developers in building a well-structured and efficient system by offering a clear conceptual representation of the platform. These structures are often visualized using tools like Entity-Relationship Diagrams (ERDs), which help stakeholders understand and communicate the flow of data effectively. A robust freelancing platform like SkillQuest relies on a well-designed data model to ensure accuracy, consistency, and reliability of all task, user, and transaction information.

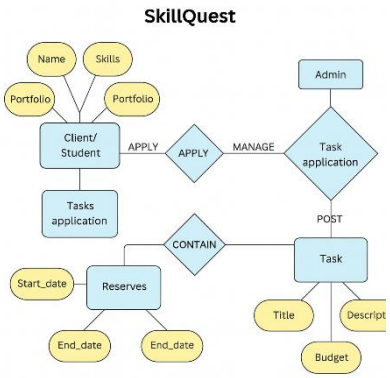

Figure 3. 3 Entity Relationship Diagram of SkillQuest

Figure 3.3 ER Diagram for the SkillQuest System presents a visual representation of the relationships and interactions among key entities such as Student, Client, Task, Application, Payment, and Admin. The diagram illustrates how students and clients can register and log in, how clients can post tasks, and how students can browse tasks, submit applications, and track progress. It also shows how tasks are associated with details like budgets, deadlines, and status, and how applications and payments are linked to specific students and tasks.

Additionally, the ER diagram represents the feedback and rating process, where clients can provide ratings and reviews for completed tasks, and admins can manage users, tasks, and feedback. By clearly mapping entities, attributes, and their relationships, the ER diagram provides a comprehensive understanding of the database structure and supports efficient system development and maintenance of the SkillQuest platform..

3.1.4 Process Modeling

Process modeling graphically represents how data flows between students, clients, admins, and the SkillQuest system. Data Flow Diagrams (DFDs) are used to show interactions between users and internal components, as well as connections to data storage. DFDs help simplify complex workflows, improve system understanding, and guide efficient design and development of the platform.

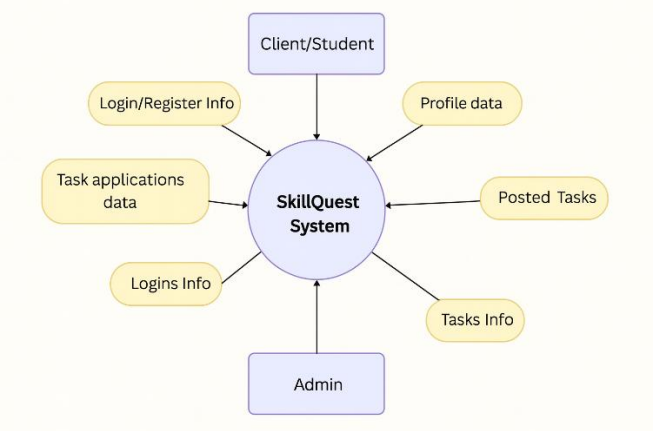

Figure 3. 4 Context level Diagram of SkillQuest

The structure of the SkillQuest system and its interactions with external entities are shown in the Level 0 Data Flow Diagram. The two primary external entities are Students and Clients, which interact with the core process labeled "0.0 SkillQuest System."

Students interact with the system by registering or logging in, browsing available tasks, applying for projects, tracking task progress, and receiving payments. The system provides task details, application status, and payment confirmation. Clients interact with the system to post tasks, review student applications, hire students, and provide feedback or ratings for completed tasks.

The Level 0 DFD presents the overall flow of data between students, clients, and the SkillQuest platform without detailing internal processing, offering a clear high-level view of how the system operates.

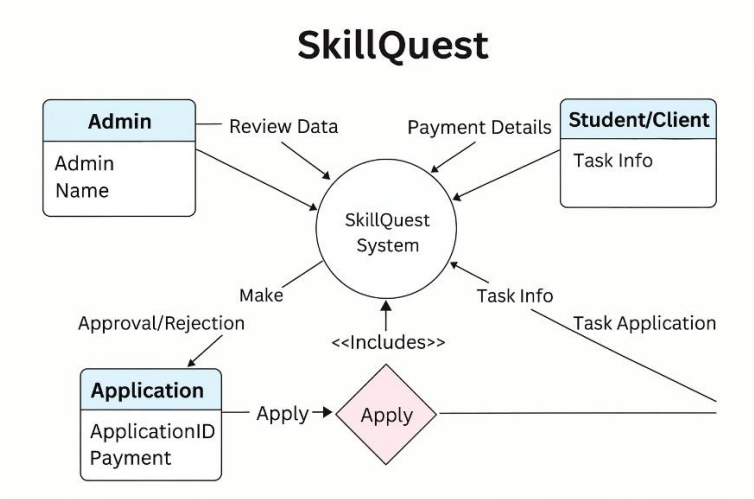

Figure 3. 5 Customer and Admin Level 1 Data Flow Diagram of SkillQuest

The Level 1 Data Flow Diagram provides a more detailed view of SkillQuest's internal operations. The main process is broken down into subprocesses such as Manage Authentication, Manage Tasks, Manage Applications & Payments, Manage Feedback, and Manage Users.

The Manage Authentication process verifies login and registration details using the user database. Manage Tasks allows students to browse available tasks and enables clients to post, edit, or delete tasks stored in the tasks database. Manage Applications & Payments handles student task applications, tracks progress, and processes payments using the applications and payments data stores. Manage Feedback tracks client ratings and reviews for completed tasks, while Manage Users allows the admin to manage student and client profiles.

Overall, the Level 1 DFD offers a detailed understanding of SkillQuest's core operations, clearly showing how data flows between students, clients, administrators, system processes, and data storage.

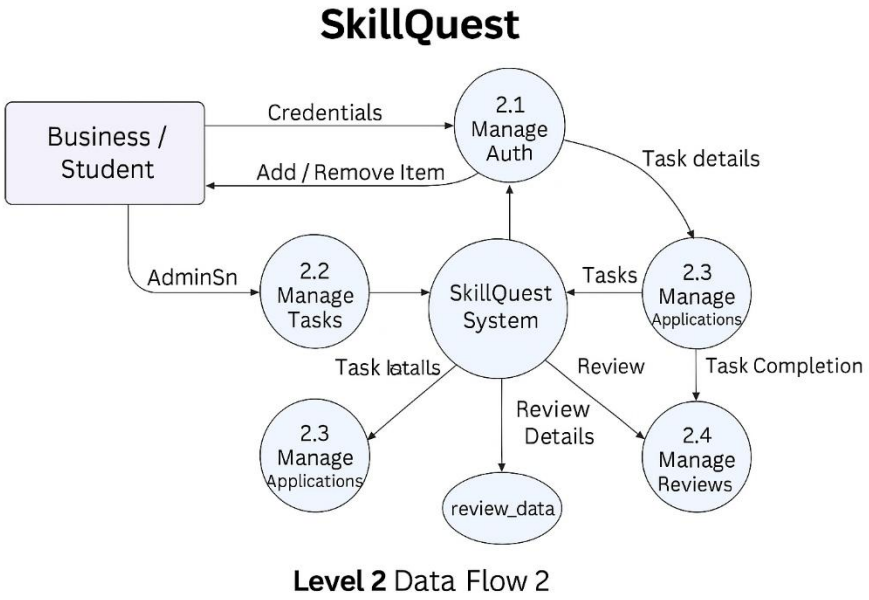

Figure 3. 6 Customer Level 2 Data Flow Diagram of SkillQuest

Figure 3.6 Data Flow Diagram for SkillQuest illustrates how Students interact with the SkillQuest platform to complete tasks efficiently and conveniently. The first step is “Register and Login” to gain access to the system. Once logged in, students can “Browse, search, and view tasks” posted by clients, reducing the need for informal or unorganized freelancing methods.

The next step is “Apply for tasks”, allowing students to submit applications for projects they are interested in. “Receive payments” is the subsequent crucial step, ensuring secure and timely compensation upon task completion. Students can also “Provide feedback” for completed tasks to help improve platform quality. This structured workflow ensures that students can efficiently find and complete projects while clients receive reliable support and services.

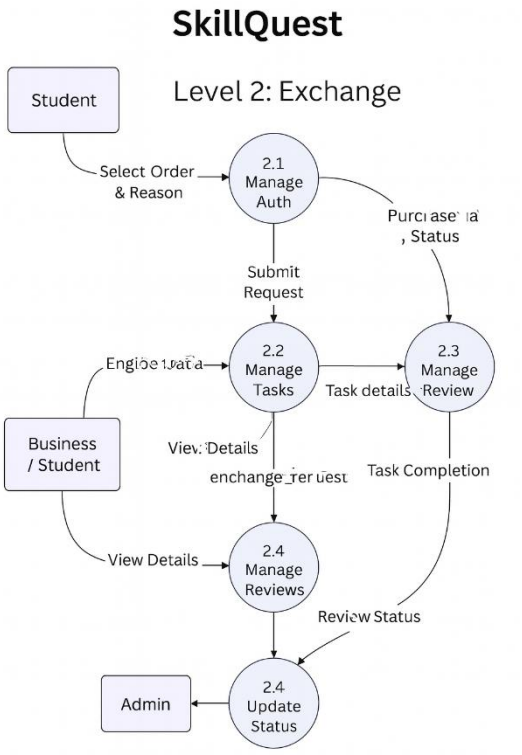

Figure 3. 7 Exchange Request Level 2 Data Flow Diagram of SkillQuest

Figure 3.7 Data Flow Diagram for SkillQuest illustrates how a student initiates the process by submitting a task application. The 5.1 Validate Eligibility procedure checks the student's profile, task requirements, and eligibility criteria stored in the applications database. Once validated, the 5.2 Submit Application procedure records the application in the applications data store.

The process then moves to the admin side, where pending applications are accessed through the 5.3 Review Application procedure. The admin evaluates the submission and decides whether to "Approve/Reject" the application. Finally, the 5.4 Update Status procedure updates the applications data store with the result, which can be viewed by the student, ensuring a smooth and transparent task application and approval process.

3.2 System Design

System design is the process of defining the components of a system, including modules, architecture, interfaces, and data structures, based on the identified requirements. It serves as a bridge between system analysis and implementation by transforming requirements into a clear and actionable blueprint. During the design phase of the SkillQuest project, several design artifacts were created, including the system architecture, database schema, user interface design, interface structure diagrams, and physical Data Flow Diagrams (DFDs). These designs provide a comprehensive understanding of how the platform operates and how the various components—students, clients, tasks, applications, and admin functions—interact effectively.

3.2.1 System Architecture

The SkillQuest system is structured into three main layers: presentation, application, and database, each serving a specific role to ensure smooth and secure platform operations.

Presentation Layer: This layer handles interactions between students, clients, and the system through a web browser. Built with HTML for structure, CSS for styling, and JavaScript for interactivity, it provides a responsive and intuitive interface. Users can browse available tasks, submit applications, track progress, and manage their profiles efficiently.

Application Layer: Also called the logic layer, it processes requests from the presentation layer, implementing the platform's core functionality. Using JSP and Servlets, this layer manages student applications, task postings, feedback, and payments securely. It communicates with the database to retrieve or update data and prepares information for display on the interface.

Database Layer: his layer stores and manages all SkillQuest data, including student and client profiles, tasks, applications, and payments. MySQL ensures secure, efficient, and reliable data storage and retrieval to support platform operations.

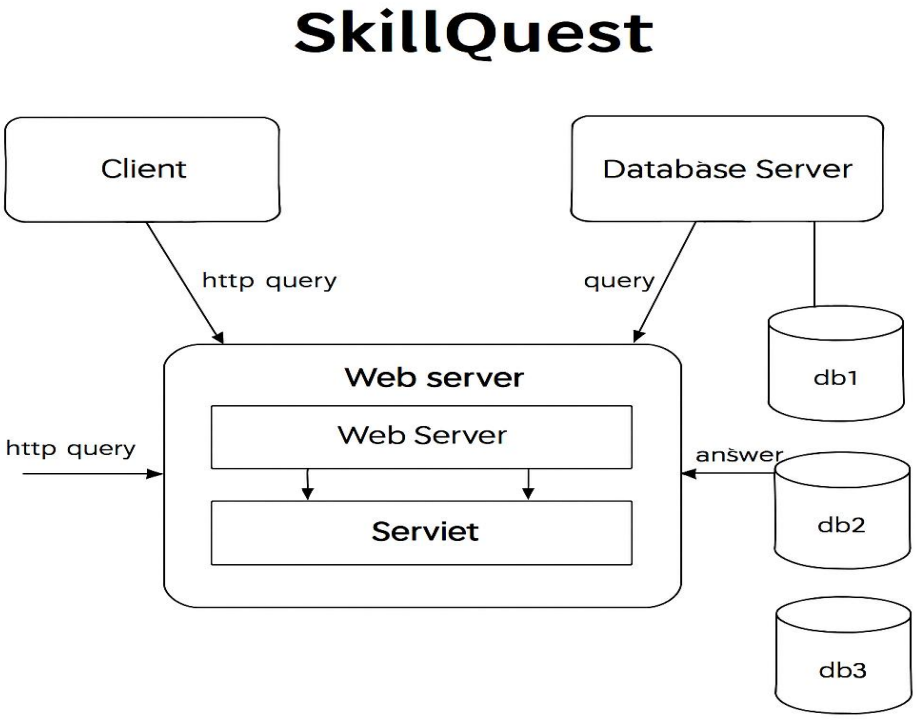

Figure 3. 8 System Architecture of SkillQuest

CHAPTER 4 IMPLEMENTATION AND TESTING

4.1 Implementation

4.1.1 Tools Used (CASE tools, Programming Languages, Database Platforms)

The main tools used in the SkillQuest application are HTML, CSS, JavaScript, JSP/Servlets, and MySQL.

4.1.1.1 Front End Tools

HTML:

HTML is the standard markup language used to define the structure and content of the SkillQuest platform. It displays text, images, forms, and other elements on web pages, forming the foundation of the user interface where students browse and claim tasks and clients post tasks.

CSS:

CSS is used to style and enhance the visual appearance of the web pages. In SkillQuest, it ensures a consistent and appealing layout by controlling fonts, colors, spacing, and overall design, improving usability and user experience.

JavaScript:

JavaScript adds interactivity and dynamic behavior to the system. It enables features such as client-side input validation, dynamic task lists, interactive dashboards, real-time updates, and smooth navigation, making the platform more responsive and user-friendly.

4.1.1.2 Backend Tools

JSP/Servlet: JSP and Servlets are used for server-side processing, handling core functionality like student authentication, task claiming, client task management, feedback, and secure communication with the database. They ensure dynamic content generation and efficient business logic processing.

MySQL: MySQL is an open-source relational database management system used to store and manage data for students, clients, tasks, claims, and payments. It allows secure and efficient data storage, retrieval, updating, and deletion, ensuring smooth and reliable platform operations.

4.1.2 Implementation Details of Modules (Description of Procedures/ functions)

There are different modules descriptions. They are described below:

- **Login Module:** The login module verifies the identity of students and clients before they access the system. It ensures that only authorized users can log in by validating credentials such as email, username, and password. This module is crucial for maintaining secure access and protecting user data.

- **Admin Module:** The admin module allows administrators to manage and oversee the platform efficiently. It handles tasks such as managing student and client profiles, monitoring claimed tasks, updating task status, handling payments, and managing feedback. This ensures smooth operations and maintains the integrity of the platform**.**
- **Student Module:** This module enables students to register, log in, browse available tasks, claim tasks, track progress, and receive payments upon task completion. It ensures organized interaction between students and the platform while providing easy access to their task history and account details.

- **Client Module:** The client module allows clients to post tasks, manage task details, track claimed tasks, provide feedback, and make payments to students. It streamlines communication and ensures tasks are managed efficiently from posting to completion.

- **Email Module:** The email module automates communication with students and clients. It sends notifications such as task claim confirmations, payment alerts, and feedback requests to keep users informed and engaged.

4.2 Testing

Testing is the process of identifying and correcting errors in the system. It ensures the quality, reliability, and correct functioning of SkillQuest. Testing also supports future maintenance and enhancements by detecting flaws early.

4.2.1 Unit Testing

Unit testing is a process of testing the smallest functional parts of the SkillQuest system independently to ensure each works correctly. Each module is tested separately to verify its intended functionality. For example, the claim task button is tested to confirm that students can claim tasks properly, while the task posting form is tested to ensure clients can submit tasks successfully. Unit testing helps detect errors early, ensuring each module functions reliably.

Table 4.1: User Registration & Login

S.no.	Action	Input	Expected Outcome	Actual Outcome	Test Result
1	Login	Enter valid email and password	User is successfully logged in	User is successfully logged in	Pass
2	Login	Enter invalid email/password	Error message displayed;	Error message displayed;	Pass

S.no.	Action	Input	Expected Outcome	Actual Outcome	Test Result
			login unsuccessful	login unsuccessful	

3	Registration	Enter valid registration details	User account is successfully created	User account is successfully created	Pass
4	Password Confirmation	Enter matching passwords	Passwords match and validation passes	Passwords match and validation passes	Pass
5	Email Validation	Enter valid email format	Email format is valid and passes validation	Email format is valid and passes validation	Pass
6	Password Verification	Enter password with special characters	Password meets validation criteria	Password meets validation criteria	Pass

Table 4.2: Task Management (Student)

S.no.	Action	Input	Expected Outcome	Actual Outcome	Test Result
1	Claim Task	Click "Claim Task"	Task is assigned to student	Task assigned successfully	Pass
2	Submit Task	Upload completed task	Task submitted successfully	Task submitted successfully	Pass
3	View Claimed Tasks	Navigate to "My Tasks"	List of claimed tasks displayed	List displayed successfully	Pass
4	Claim Task without login	Click "Claim Task"	Redirect to login page	Redirected to login page	Pass

Table 4.3: Task Management (Client)

S.no.	Action	Input	Expected Outcome	Actual Outcome	Test Result
1	Post Task	Enter task details	Task added successfully	Task added successfully	Pass
2	Update Task	Edit task details	Task updated successfully	Task updated successfully	Pass

4.2.2 System testing

System testing evaluates the complete SkillQuest platform to ensure all modules work together correctly and meet the specified requirements.

Table 4.5 User Interface Testing

S.no.	Action	Input	Expected Outcome	Actual Outcome	Test Result
1	Access Login Page	Navigate to login page	Login page displayed	Login page displayed	Pass
2	Enter Valid Credentials	Input valid username & password	User logged in	User logged in	Pass
3	Enter Invalid Credentials	Input invalid username/password	Error message displayed	Error message displayed	Pass
4	Access Dashboard	Navigate to dashboard	Dashboard page displayed	Dashboard page displayed	Pass
5	View Tasks	Navigate to task list	Tasks displayed	Tasks displayed	Pass

6	Claim Task	Click "Claim Task"	Task assigned to student	Task assigned	Pass
7	Submit Task	Upload completed task	Task marked complete	Task completed	Pass

Table 4.6 Admin Interface Testing

S.no.	Action	Input	Expected Outcome	Actual Outcome	Test Result
1	Admin Login	Enter valid admin credentials	Admin logged in successfully	Admin logged in	Pass
2	View Tasks	Navigate to task management page	List of all tasks displayed	List displayed	Pass
3	Approve Task Completion	Click "Approve"	Task status updated	Task approved	Pass
4	Manage Users	Add/edit/delete student or client	User management successful	User updated successfully	Pass

CHAPTER 5

CONCLUSION AND FUTURE RECOMMENDATIONS

5.1 Lesson learnt/ Outcome

Developing the SkillQuest system provided several valuable lessons. It became clear that having a user-friendly platform is crucial so that students can easily find and claim tasks, while clients can post and manage their projects efficiently. Features such as clear task categorization, progress tracking, and proper notification systems significantly improve user experience. The development process also highlighted the importance of secure authentication, reliable data storage, and proper handling of task assignments to ensure smooth operations. These insights enhanced the overall quality, usability, and reliability of the platform.

5.2 Conclusion

This project focused on creating an online freelancing platform connecting students with clients for small projects. The main goal was to develop a simple, intuitive, and effective system using JSP, Servlets, HTML, CSS, and MySQL. SkillQuest allows students to claim tasks, submit completed work, and gain practical experience, while clients can post tasks, monitor progress, and provide feedback. The system includes user authentication, task management, progress tracking, and notification features to ensure a smooth interaction between users. Overall, the project demonstrates the successful application of web development technologies to build a functional and user-centric platform.

5.3 Future Recommendation

To further improve the SkillQuest platform and adapt to user needs, several enhancements can be considered:

- **Use Enhanced User Feedback:** Implement a robust feedback and rating system so students and clients can share experiences, improving trust and guiding future task assignments.

- **Expanded Payment Options:** Integrate multiple payment gateways and

digital wallets to allow clients to pay securely and conveniently, catering to various user preferences.

- **Mobile Optimization:** Ensure the platform is fully responsive and performs well on different devices and screen sizes, providing seamless access for all users.
- **Multi-Language Support:** Introduce multi-language support to make the platform accessible to a broader audience and accommodate users from diverse regions.
- **Framework Integration:** Consider adopting modern frameworks like React for the frontend and Spring Boot for the backend to enhance system interactivity, scalability, and maintainability in future versions.
- **Advanced Task Matching:** Use recommendation algorithms to suggest tasks to students based on their skills and past performance, improving efficiency and engagement.

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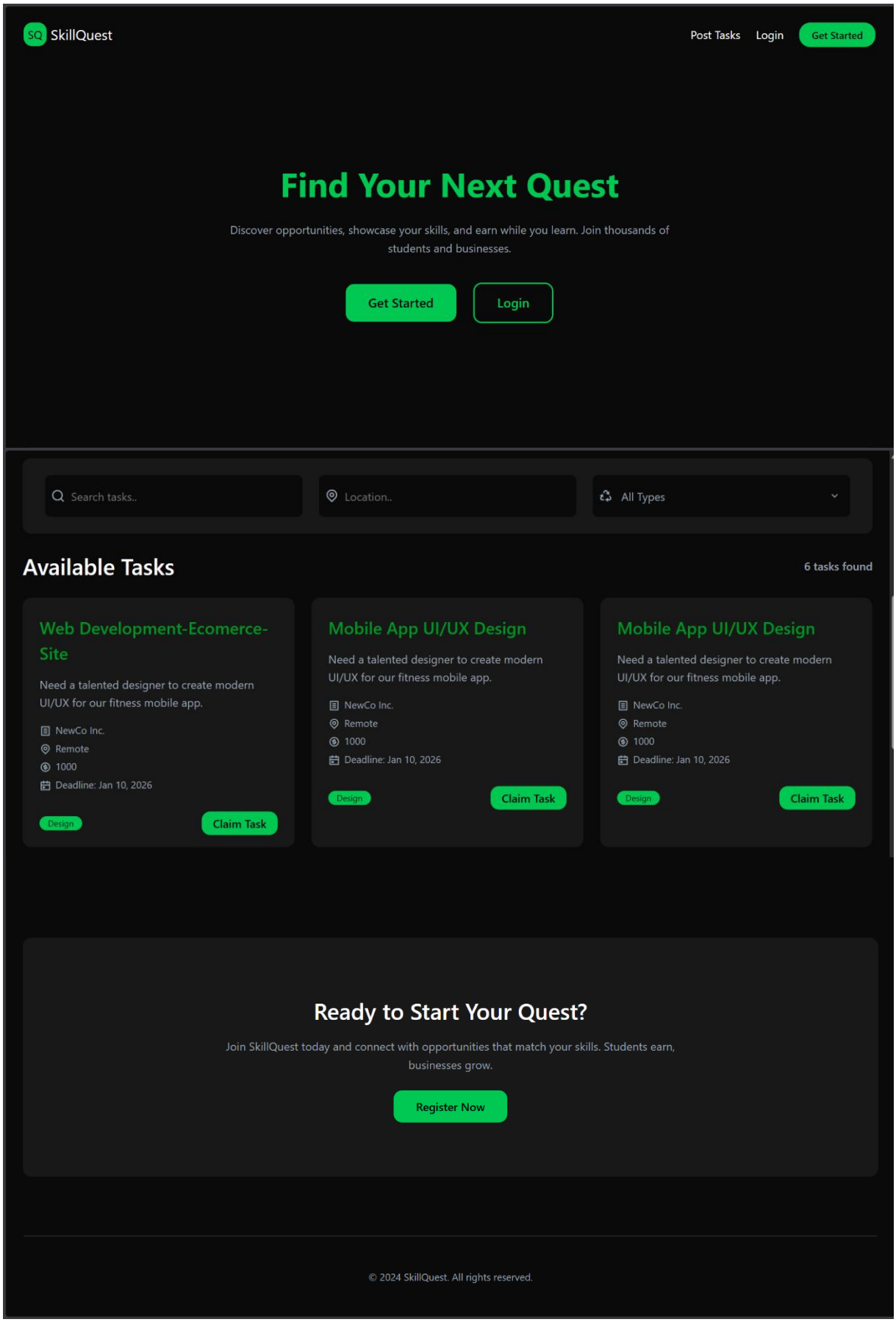
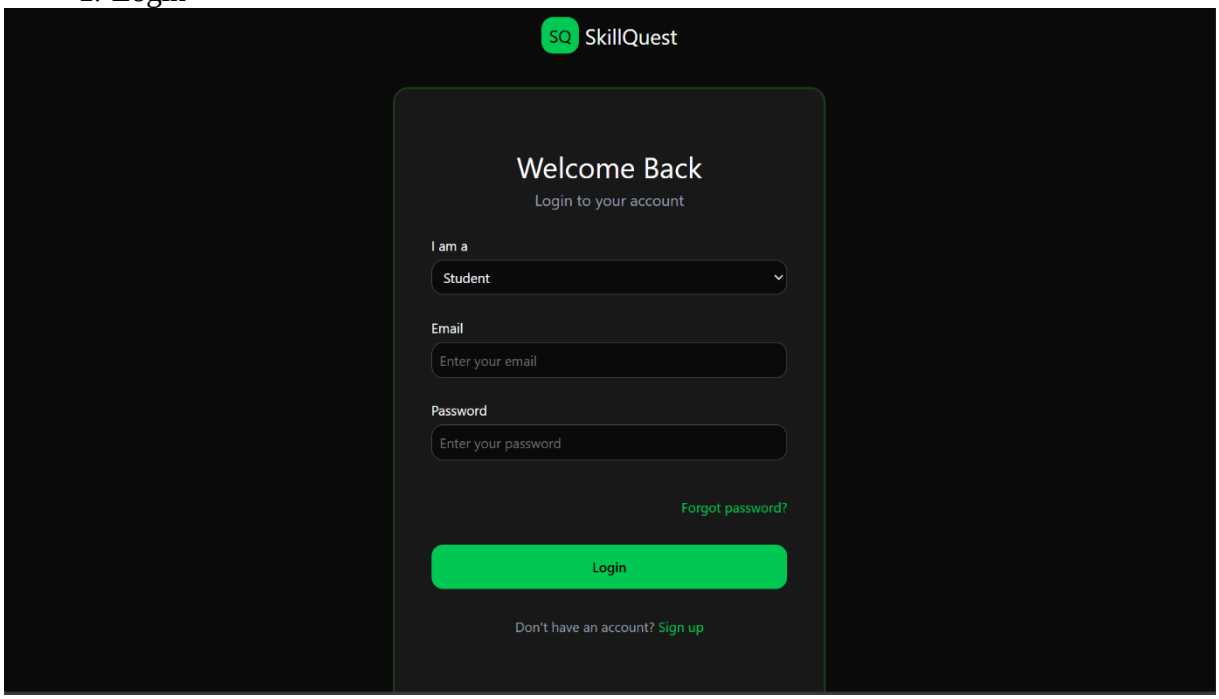
APPENDIX

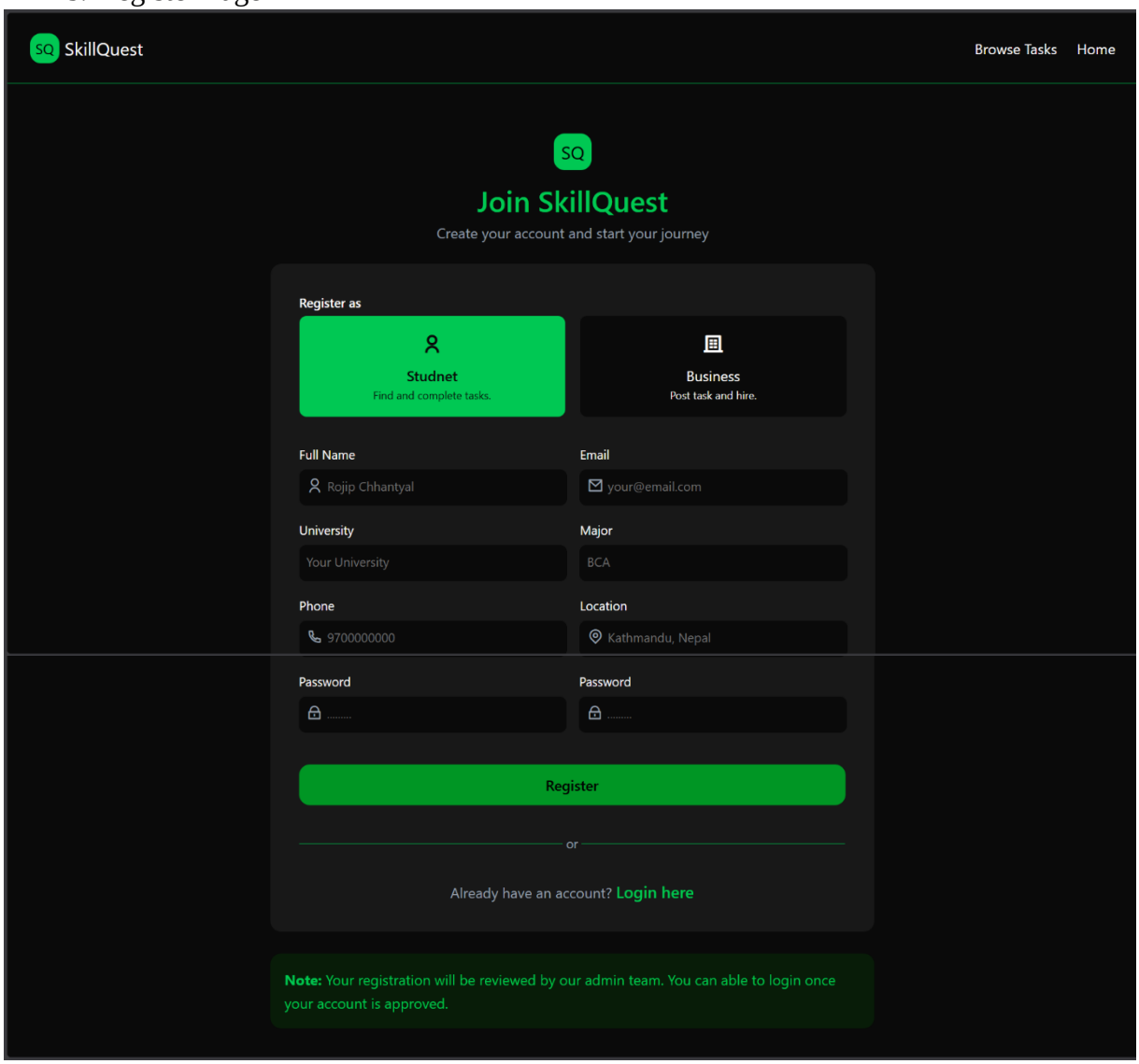
1. Home Page



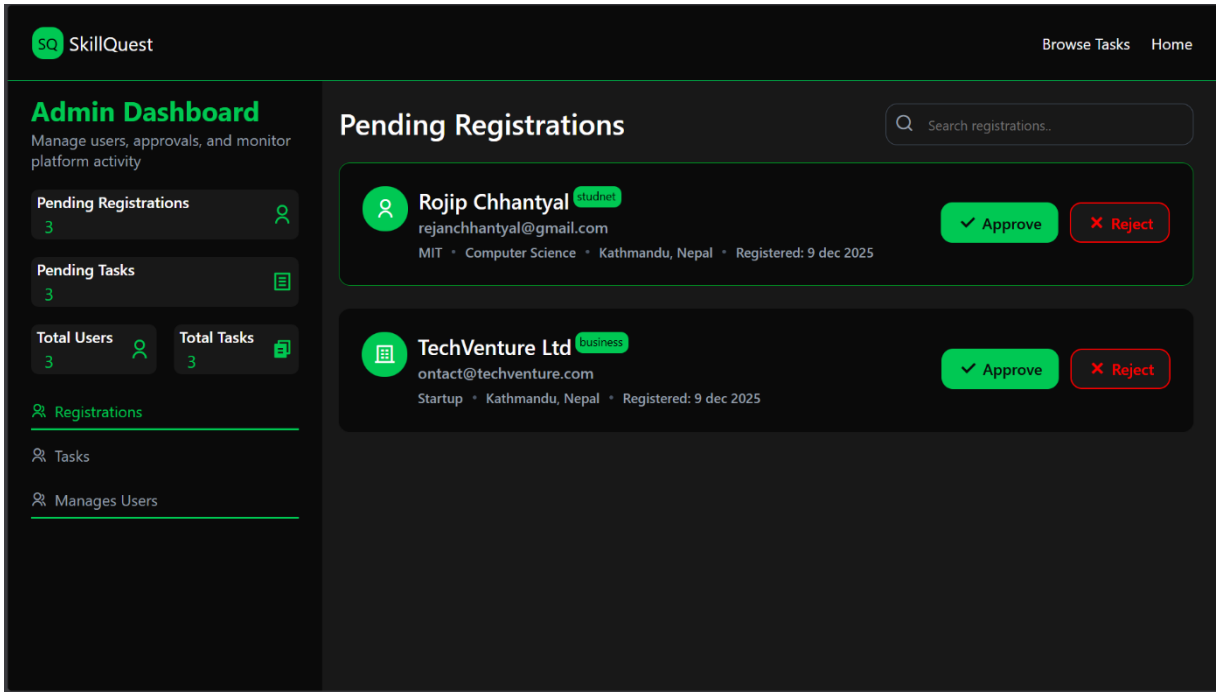
2. Login



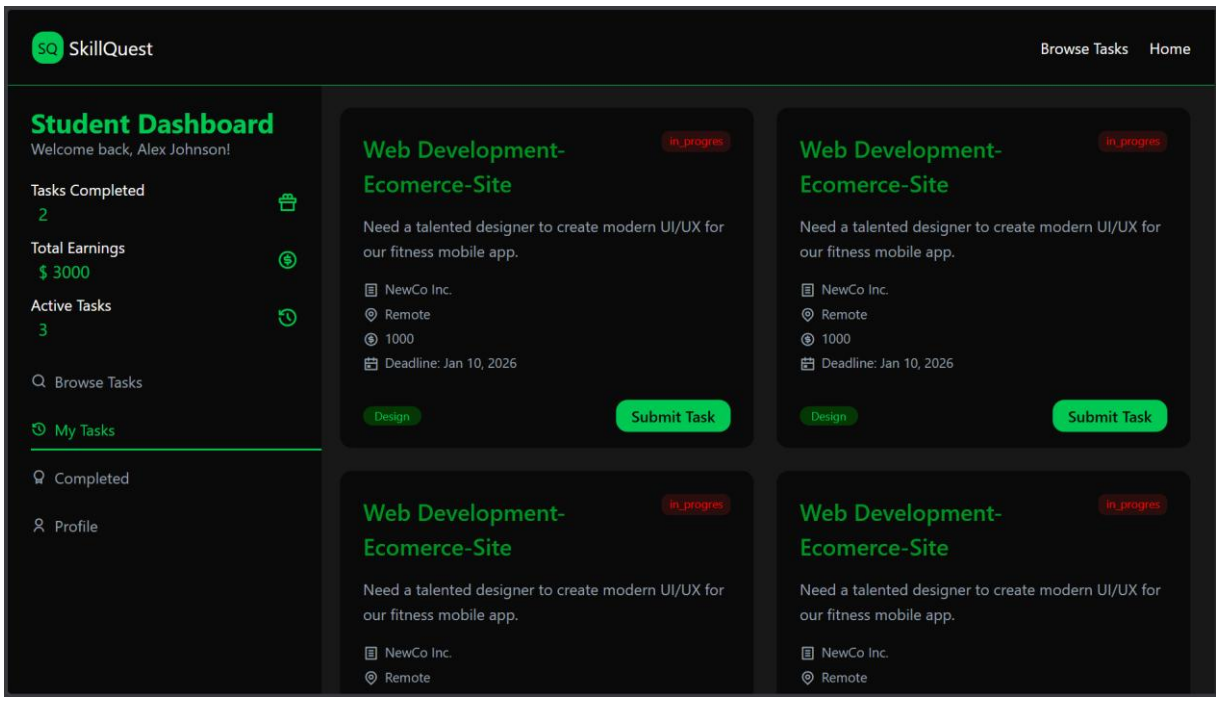
3. Register Page



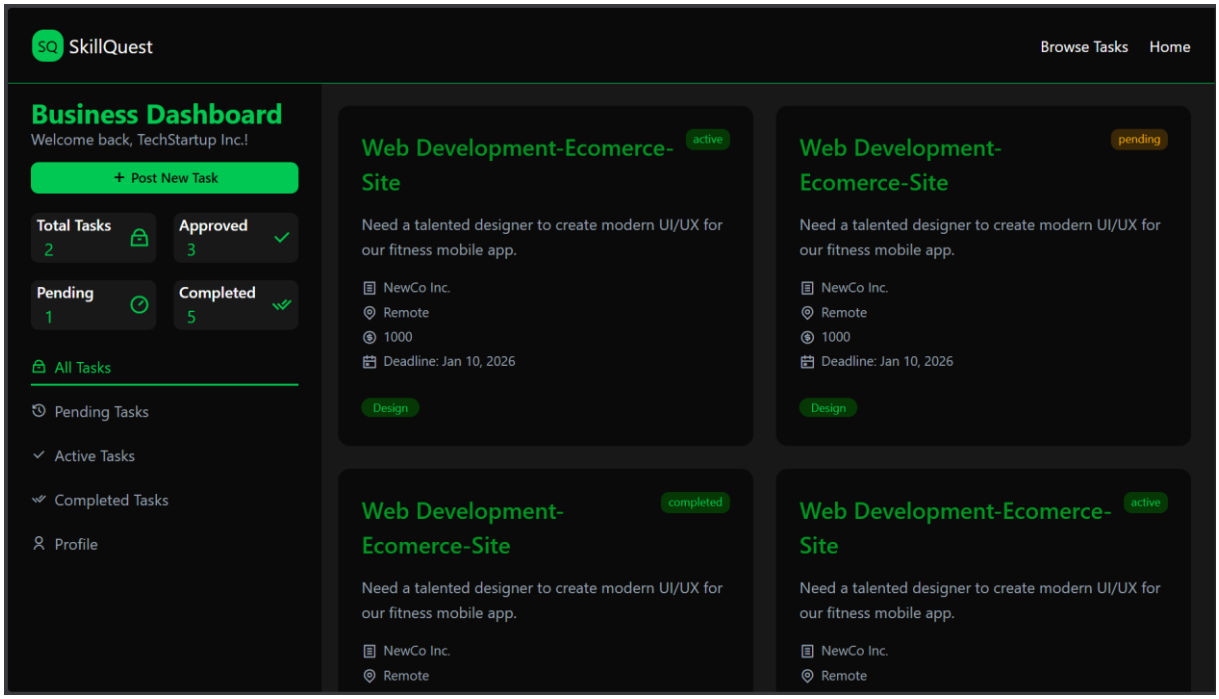
4. Admin Dahboard



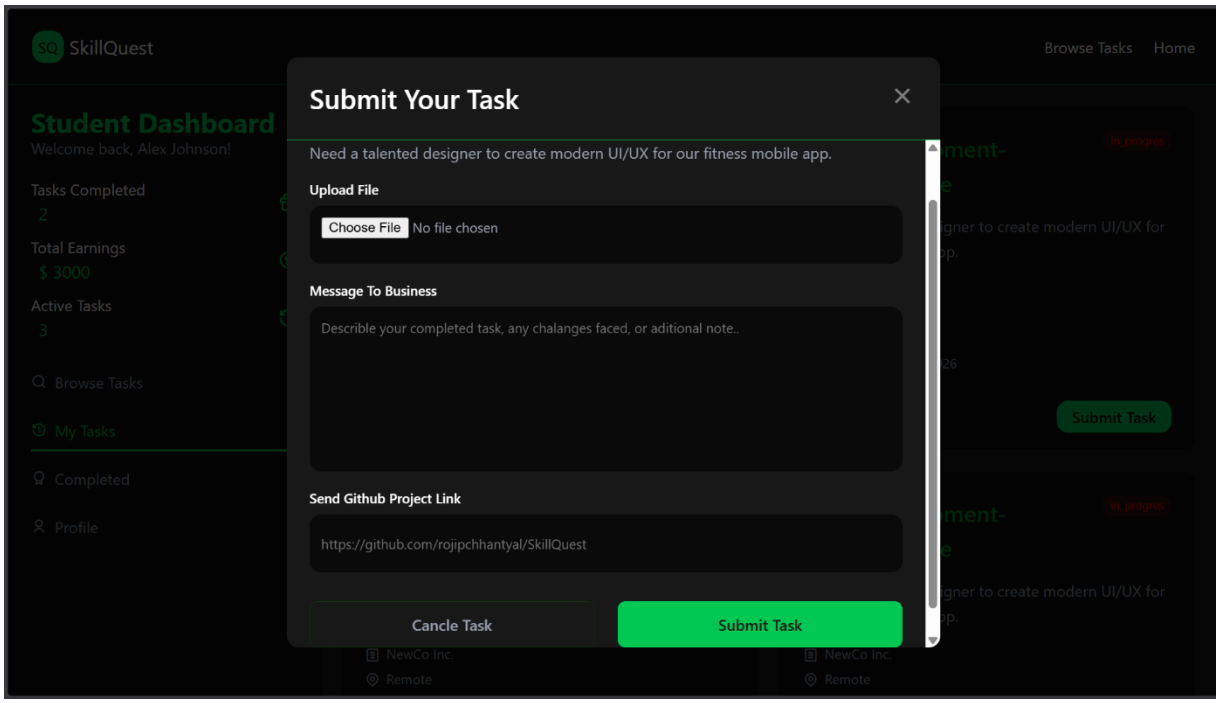
5 .Student dashboard

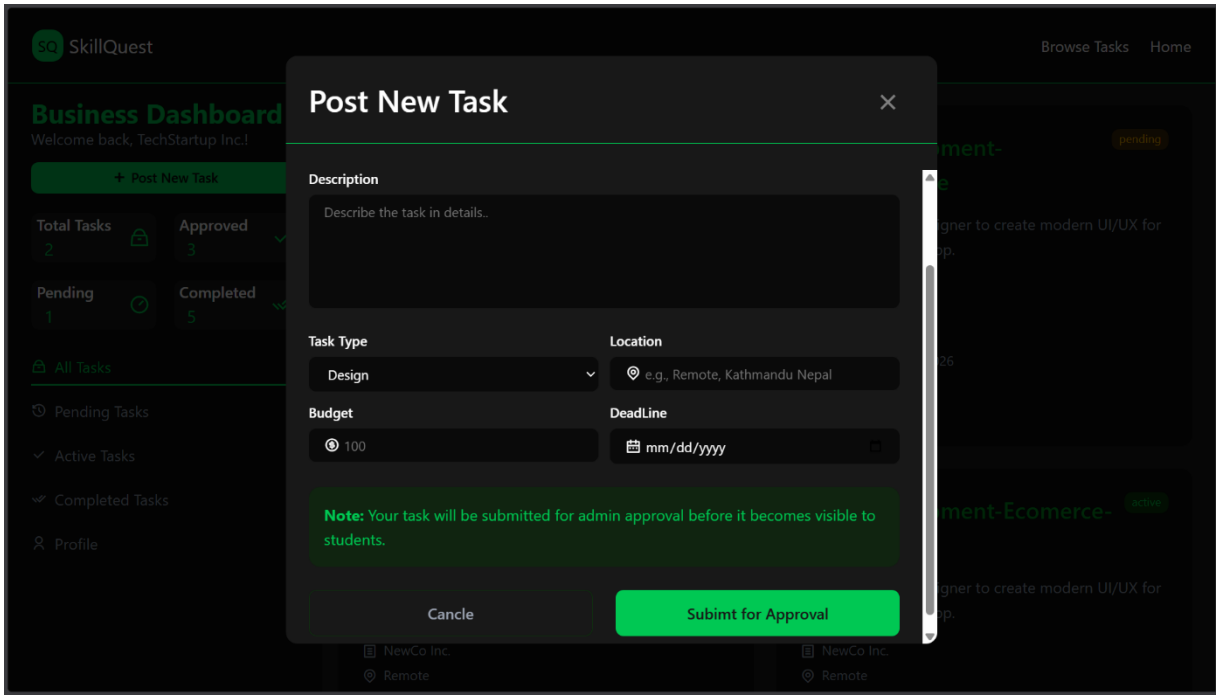


6. Business Dashboard



7. Task Upload / Submit




SkillQuest
Browse Tasks
Home
Business Dashboard
Welcome back, TechStartup Inc.!
+ Post New Task
Total Tasks
2
Approved
3
Pending
1
Completed
5
All Tasks
Pending Tasks
Active Tasks
Completed Tasks
Profile
Post New Task
Description
Describe the task in details..
Task Type
Design
Location
e.g., Remote, Kathmandu Nepal
Budget
100
DeadLine
mm/dd/yyyy
Note: Your task will be submitted for admin approval before it becomes visible to students.
Cancle
Subimt for Approval
pending
active
NewCo Inc.
Remote