VIRINCHI COLLEGE

Project Proposal

On

Sajilo Kaam

Freelance Management System

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ABSTRACT

Sajilo Kaam, meaning "easy work" in Nepali, is a web-based platform designed to streamline freelance interactions in Nepal's ICT sector. Despite growing digital adoption, many freelancers rely on fragmented systems, causing inefficiencies in bidding, project management, collaboration, and task creation. Sajilo Kaam addresses these issues by enabling admins to manage users, freelancers to bid and track projects, and clients to collaborate seamlessly. Built with React JS for a responsive frontend, Spring Boot for a scalable backend, and MySQL for data management, Sajilo Kaam integrates role-based dashboards, secure authentication, and robust reporting tools. It leverages Nepal's increasing internet penetration to enhance freelance workflows, ensure accurate project tracking, and foster collaborative work.

Keywords: Sajilo Kaam, Freelance Management, Bidding System, Project Collaboration

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LIST OF ABBREVIATIONS

Terms	**Full Forms**
API	Application Programming Interface
FMS	Freelance Management System
CSV	Comma-Separated Values
ER	Entity-Relationship
JPA	Java Persistence API
REST	Representational State Transfer
ML	Machine Learning

CHAPTER 1: INTRODUCTION

This chapter provides the context for Sajilo Kaam by outlining the freelance challenges in Nepal, the project's purpose, objectives, scope, and its relevance to the IT field. It also defines limitations to clarify the project's boundaries.

1.1 Background

Nepal's freelance landscape is evolving with increasing digital tool adoption. However, freelancers rely on disparate tools like email, spreadsheets, or generic apps for bidding, project management, and collaboration, leading to inefficiencies in task tracking, client interaction, and coordination. Global evidence suggests integrated digital platforms enhance freelance success (Mourshed et al., 2017). Sajilo Kaam, meaning "easy work" in Nepali, addresses these gaps by providing a customized freelance management system for Nepal's freelancers, creating structured work environments using modern IT solutions.

1.2 Problem Statement

Freelancers in Nepal face inefficiencies due to fragmented systems for bidding, project tracking, collaboration, and task creation. Freelancers often use multiple tools for job bidding, project management, and client collaboration, while clients navigate scattered platforms, causing confusion. Generic systems like email or third-party apps lack tailored freelance features such as integrated bidding, collaboration permissions, or secure user management. The absence of an integrated solution hinders performance reporting and comprehensive assessment of freelance progress. Sajilo Kaam provides a unified, secure, and user-friendly ecosystem suited to Nepal's freelance context.

1.3 Relevance to the IT field

Sajilo Kaam is highly relevant to the IT field, leveraging advanced web development technologies and software engineering principles to address inefficiencies in Nepal's freelance sector. It uses React JS for a dynamic, responsive frontend, enhancing user experience across devices, and Spring Boot with REST APIs for a scalable backend. MySQL with JPA ensures efficient database transactions, while role-based access and encryption align with cybersecurity best practices. By utilizing tools like GitHub and Postman, Sajilo Kaam demonstrates cost-effective innovation, with potential to guide future entrepreneurs in developing user-centric, scalable applications in emerging markets.

1.4 Purpose of the project

The goal of Sajilo Kaam is to develop a digital freelance management system that simplifies processes for Nepal's freelancers. It aims to enhance freelancer-client collaboration by unifying user management, project delivery, and task creation. Rooted in modern freelance design, the platform enables accurate project tracking and provides collaborative tools for performance monitoring, offering an efficient way to work.

1.5 Objectives of the project

Sajilo Kaam aims to deliver a digital platform addressing freelance inefficiencies through specific, measurable objectives:

- Develop a user-friendly freelance management system for seamless freelancer-client interactions.
- Enable secure user management by restricting account creation to admins.
- Facilitate bidding, project creation, and task tracking with centralized management.
- Provide tools for freelancers to export aggregated performance reports.
- Create a scalable, responsive design for cross-device compatibility.

1.6 Scope

Sajilo Kaam is a web-based freelance management system targeting admins, freelancers, and clients in Nepal's freelance sector, with no open user registration for enhanced security. Key deliverables include:

- **User Management:** Admin creates and manages freelancer and client accounts.
- **Project Management:** Freelancers create and manage projects with detailed content.
- **Bidding System:** Clients post jobs; freelancers submit bids.
- **Collaboration Tools:** Task commenting and file sharing for freelancer-client interaction.
- **Document-Based Task Creation:** Extract tasks from documents using ML.
- **Reporting:** Export CSV/PDF reports for performance analytics.
- **Responsive Design:** Compatibility across desktop and mobile devices.

1.7 Limitations and Boundaries

Sajilo Kaam operates within specific constraints:

Limitations:

1. **Geographical Scope:** Initially targets freelancers in Kathmandu Valley, limiting reach due to varying digital infrastructure.
2. **Target Audience:** Focuses on admins, freelancers, and clients, excluding external users or public registration.
3. **Advanced Features:** Excludes AI-driven grading or real-time collaboration tools in the initial phase.
4. **Technology Access:** Assumes users have internet-enabled devices, potentially limiting adoption in low-digital-literacy areas.
5. **Scalability Constraints:** Initial server capacity may face challenges with high user volumes.

CHAPTER 2: LITERATURE REVIEW

This chapter reviews existing freelance management systems, identifies their shortcomings, and positions Sajilo Kaam as a solution tailored to Nepal's freelance needs. It compares Sajilo Kaam with platforms like Upwork and Jira, highlighting its unique features and potential impact.

2.1 Introduction

The complex nature of freelance workflows in Nepal necessitates centralized management software. Disparate tools like emails and generic apps lead to inefficiencies, limiting freelancer engagement. Research indicates that integrated digital platforms enhance workflow development, coordination, and collaboration (Garrison, 2017). Sajilo Kaam offers secure user management, bidding, project tracking, and reporting features using React JS and Spring Boot. This review examines existing systems, identifies gaps, and highlights how Sajilo Kaam addresses Nepal's unique freelance and digital environment.

2.2 Review Of Existing System

This section reviews two popular freelance management platforms, Upwork and Jira, analyzing their attributes, strengths, and limitations to understand market gaps.

2.2.1 Upwork

Upwork is a well-known platform offering job bidding, project tracking, collaboration via messaging, and payment integration. Its mobile compatibility and integration capabilities make it popular among freelancers and clients. However, its customization options can overwhelm users with limited technical expertise. Upwork's user management lacks robust security for sensitive freelance data (Upwork, n.d.).

2.2.2 Jira

Jira provides task management with customizable boards, enabling project tracking and progress monitoring. It supports real-time communication, fostering engagement for freelancers and clients. However, Jira's high subscription fees make it cost-prohibitive for many Nepal-based freelancers. Its complex features can overwhelm users seeking simplicity, and scalability is limited in low-resource contexts (Atlassian, n.d.).

2.3 Gaps in Existing System

Existing freelance management systems like Upwork and Jira have significant limitations:

1. **Complex Customization:** Upwork's customization requires advanced technical skills, challenging for individual freelancers with limited IT support.
2. **High Costs:** Jira's subscription model is cost-prohibitive for many Nepal-based freelancers, restricting adoption.
3. **Limited Admin Control:** Upwork's user management allows broader access, increasing security risks compared to an admin-restricted system.
4. **Scalability Issues:** Both platforms struggle with high concurrent users in resource-constrained environments, leading to performance bottlenecks.
5. **Lack of Localized Context:** Neither platform is designed for Nepal's freelance workflows, ignoring challenges like varying digital literacy, infrastructure limitations, or local payment integration (e.g., Khalti, eSewa).
6. **Limited Collaboration Features:** Platforms like Jira lack robust client-freelancer collaboration tools (e.g., task commenting, file sharing).
7. **Manual Task Creation:** No platforms offer automated task creation from documents, relying on manual input, which is time-consuming.
8. **Lack of Integrated Bidding:** Local platforms like HamroPatro Jobs focus on job listings but lack bidding integrated with project management.
9. **Reporting Limitations:** Upwork's report export capabilities are limited, and Jira's reporting tools are not tailored for aggregated freelance analytics.

2.4 Proposed System

Sajilo Kaam is a web-based freelance management system designed to address these gaps by providing a secure, user-friendly solution for Nepal's freelancers. It empowers admins to manage users, freelancers to bid and track projects, and clients to collaborate seamlessly. Built with React JS, Spring Boot, and MySQL, it ensures scalability, security, and accessibility, tailored to Nepal's freelance context.

2.5 Description of the proposed solution

The short description of proposed system are listed as:

1. **Purpose:** To streamline freelance workflows, enhance freelancer-client collaboration, and ensure efficient project management in Nepal's freelance sector.

2. **Core Features:**
    - User management with admin control for security.
    - Project creation with detailed content and milestones.
    - Bidding system for job posting and submission.
    - Collaboration tools for commenting and file sharing.
    - Document-based task creation using ML.
    - Centralized tracking with feedback mechanisms.
    - CSV/PDF report exports for performance analytics.
3. **Technology Stack:** ReactJS for responsive UI, Java Spring Boot for REST APIs, MySQL with JPA for data management, and Tailwind CSS for styling.
4. **Scalability and Security:** Open-source tools ensure cost-effectiveness, while Spring Security with encryption and role-based access control builds trust.

2.6 Comparison the existing system and proposed system

Table 1 Comparison of Sajilo Kaam with existing apps

Core Functionality	Sajilo Kaam	Upwork	Jira
Admin User Management	Yes	Limited	Yes
Freelancer Bidding Creation	Yes	Yes	No
Client Job Posting System	Yes	Yes	No
Project Tracking and Participation	Yes	Yes	Yes
Aggregated Report Export	Yes	Limited	Yes
Mobile-Friendly Interface	Yes	Yes	Yes
Centralized Collaboration System	Yes	Yes	Yes
Cost-Effectiveness	High	Medium	Low
Localized for Nepal	Yes	No	No

2.7 Conclusion

Upwork and Jira offer robust features but fall short in ease of customization, cost-effectiveness, and alignment with Nepal's freelance needs. Upwork's complexity and Jira's high costs limit their adoption in resource-constrained settings. Sajilo Kaam addresses these gaps with a tailored, scalable platform that leverages modern technologies to streamline freelance workflows, enhance collaboration, and provide localized solutions for Nepal's freelancers.

CHAPTER 3: METHODOLOGY

This chapter outlines the systematic approach to developing Sajilo Kaam, detailing data collection methods, the Agile development methodology, technology stack, system architecture, and design diagrams to ensure a robust and user-centric platform.

3.1 Introduction

Nepal's freelance sector faces challenges with fragmented management systems, inefficient processes, and lack of engagement. Studies highlight the need for cohesive platforms to improve transparency, workflow efficiency, and data-driven decision-making (Garrison, 2017). These insights guide the creation of Sajilo Kaam, a digital freelance management system using React JS, Spring Boot, and MySQL, tailored to address local challenges like digital literacy and infrastructure constraints.

3.2 Data Collection Technique

To define Sajilo Kaam's requirements, I conducted a multi-faceted data collection process:

1 **Literature Review:** Analyzed research on platforms like Upwork and Jira to identify best practices and gaps.
2 **User Interviews:** Conducted informal interviews with few freelancers (including those with full-time jobs) and clients to understand pain points in freelance management, such as scattered tools and complex collaboration processes.
3 **Competitive Analysis:** Reviewed user feedback on Upwork and Jira from online forums and reviews to identify usability issues, customization challenges, and integration barriers.
4 **Market Analysis:** Studied Nepal's digital landscape noting increasing adoption of freelance platforms

This data informed Sajilo Kaam's feature set, prioritizing secure user management, intuitive interfaces, and localized functionality.

3.3 Project Development Approach

Sajilo Kaam adopts the Agile methodology to ensure iterative development, continuous feedback, and adaptability. Key benefits include:

1 Flexibility: Allows refinement of features based on user feedback during sprints.

2 Incremental Delivery: Enables early deployment of core modules (e.g., user management, bidding system) for testing and iteration.

3 Collaboration: Facilitates efficient management of frontend and backend tasks, ensuring seamless integration.

4 The project is divided into two-week sprints, with regular reviews to align with user needs and project goals.

3.4 Tools, Frameworks, Languages & Technologies Used

Sajilo Kaam leverages modern technologies for a robust platform:

Frontend:

- **React JS:** Enables dynamic, component-based user interfaces for seamless interactions.
- **Tailwind CSS:** Provides responsive, utility-first styling for intuitive design.

Backend:

- **Java + Spring Boot:** Facilitates RESTful APIs and scalable backend services.

Database:

- **MySQL with JPA:** Supports structured, relational data management for users, courses, and grades.

Other Tools:

- **GitHub:** Manages version control and code collaboration.
- **Postman:** Validates and tests APIs.
- **VS Code:** Provides a development environment for coding and debugging.

3.5 System Architecture Overview

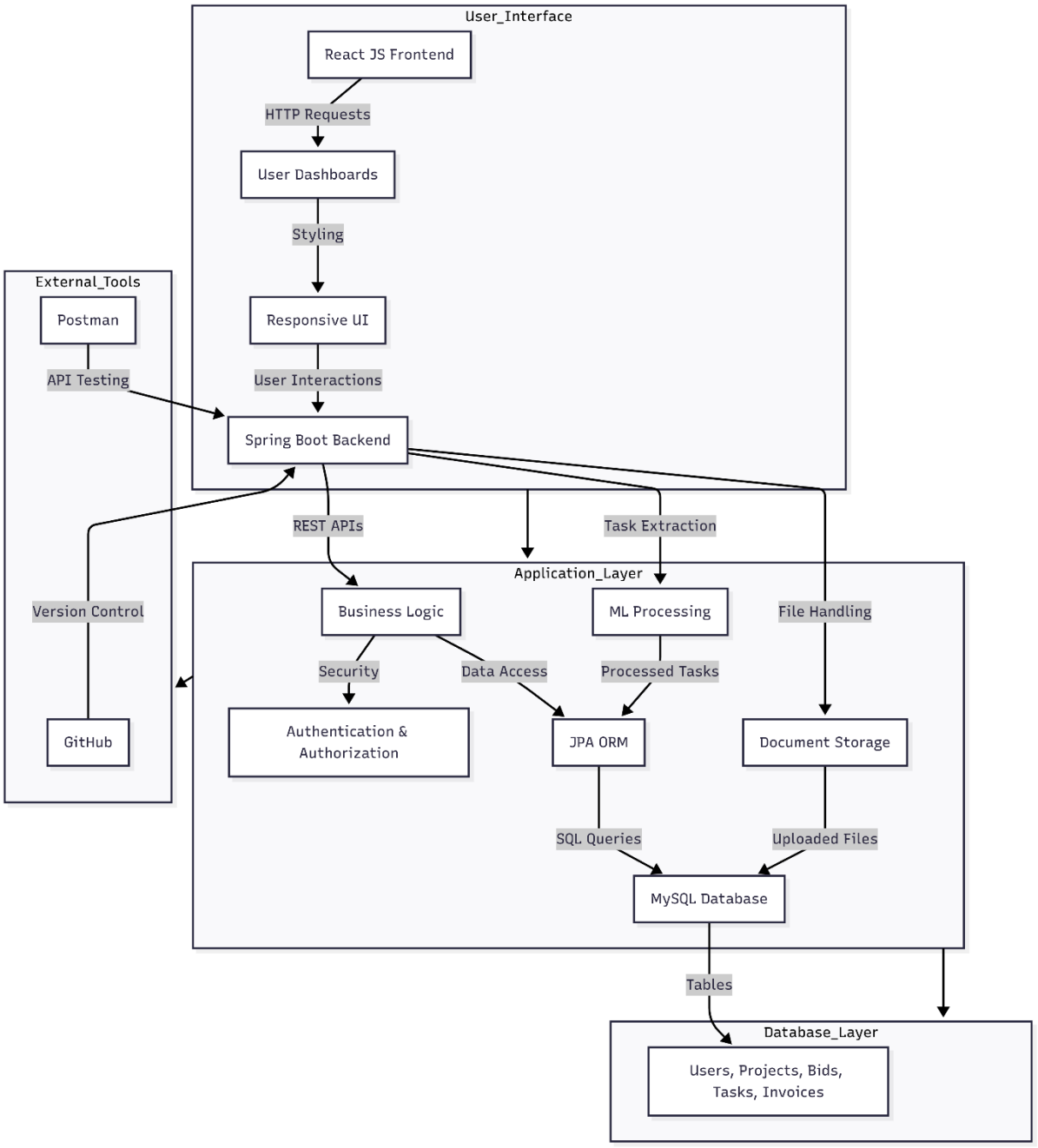

Figure 1 System Architecture of Sajilo Kaam

3.6 Proposed System Design

Sajilo Kaam is designed with three user roles and tailored features:

A. Admin

- Manages freelancer and client accounts.

- Manages system settings and monitors platform activity.

B. Freelancer

- Bids on jobs and manages projects with detailed content.
- Tracks tasks, collaborates with clients, and generates invoice

C. Client

- Posts jobs, views bids, and collaborates with freelancers.

Key Features:

- **User Management:** Secure account creation with role-based access.
- **Bidding System**: Post jobs, submit bids, and filter by type.
- **Project Creation:** Upload details, milestones, and announcements.
- **Collaboration Tools**: Comment on tasks and share files.
- **Document-Based Task Creation:** Extract tasks from documents using ML.
- **Evaluation Tools:** Track progress and provide feedback.
- **Reporting:** Export CSV/PDF reports for performance analytics.

3.7 High Level Diagrams

3.7.1 Class Diagram

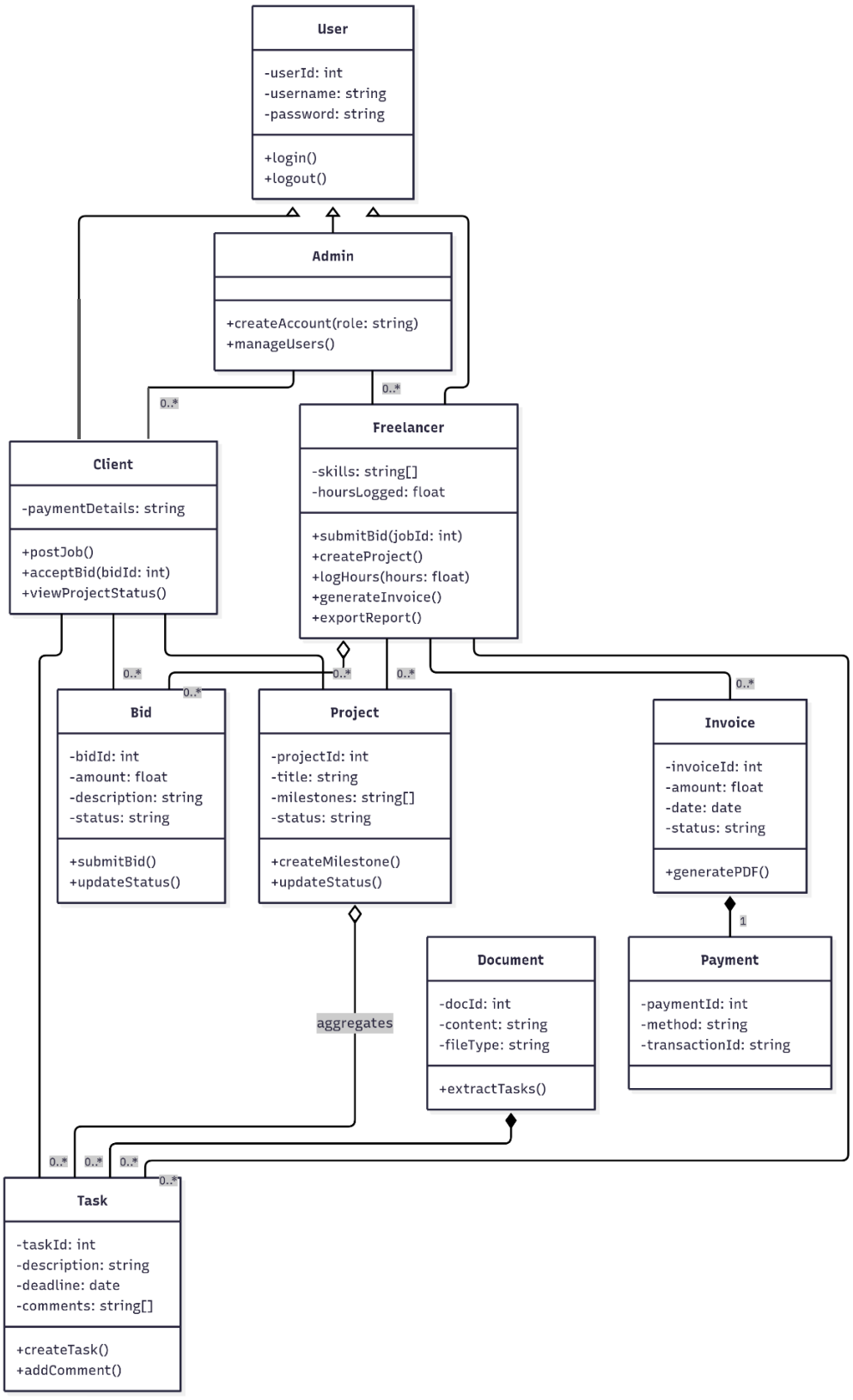

Figure 2 Class diagram

3.7.2 ER Diagram

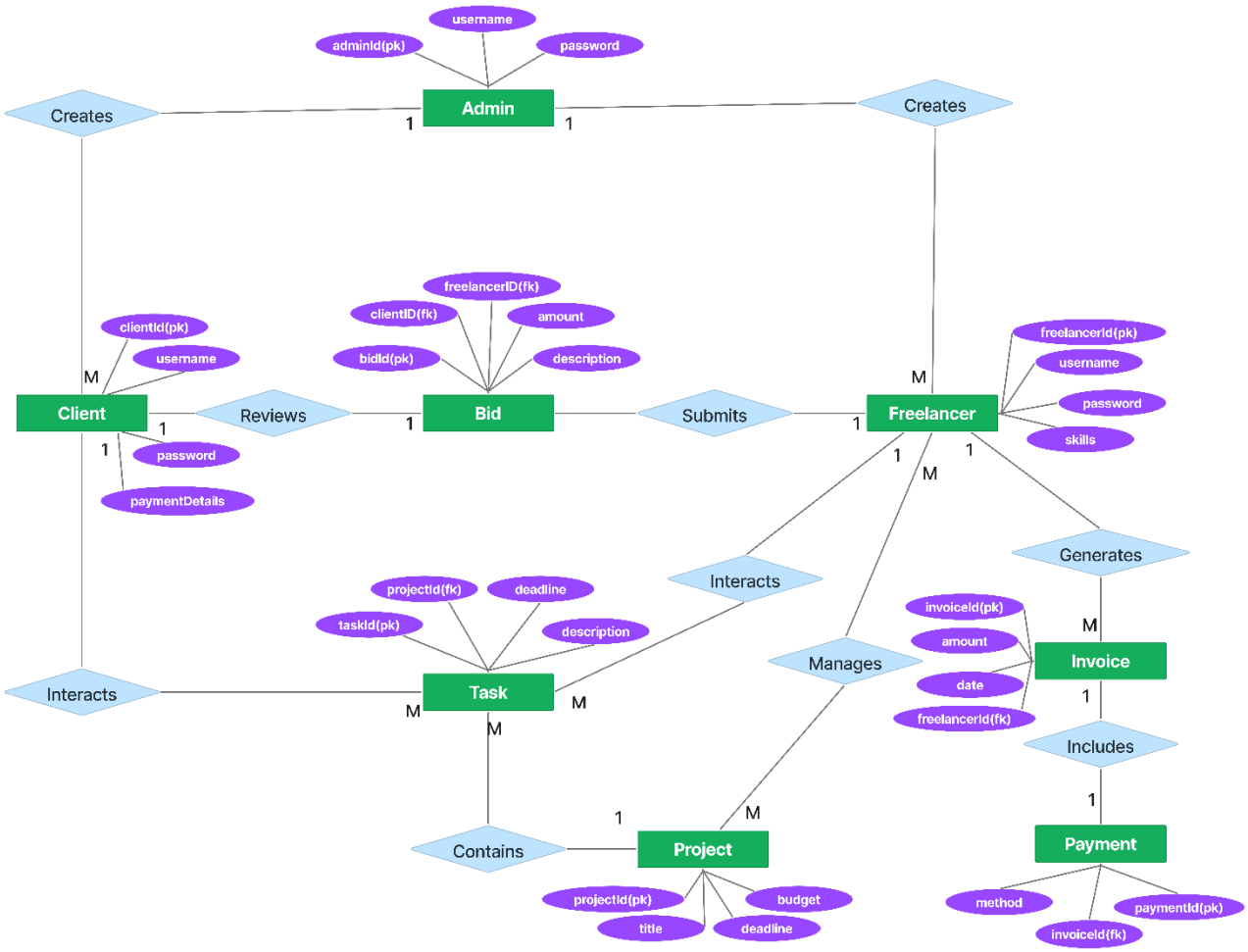

Figure 3 ER diagram

3.7.3 Sequence Diagram

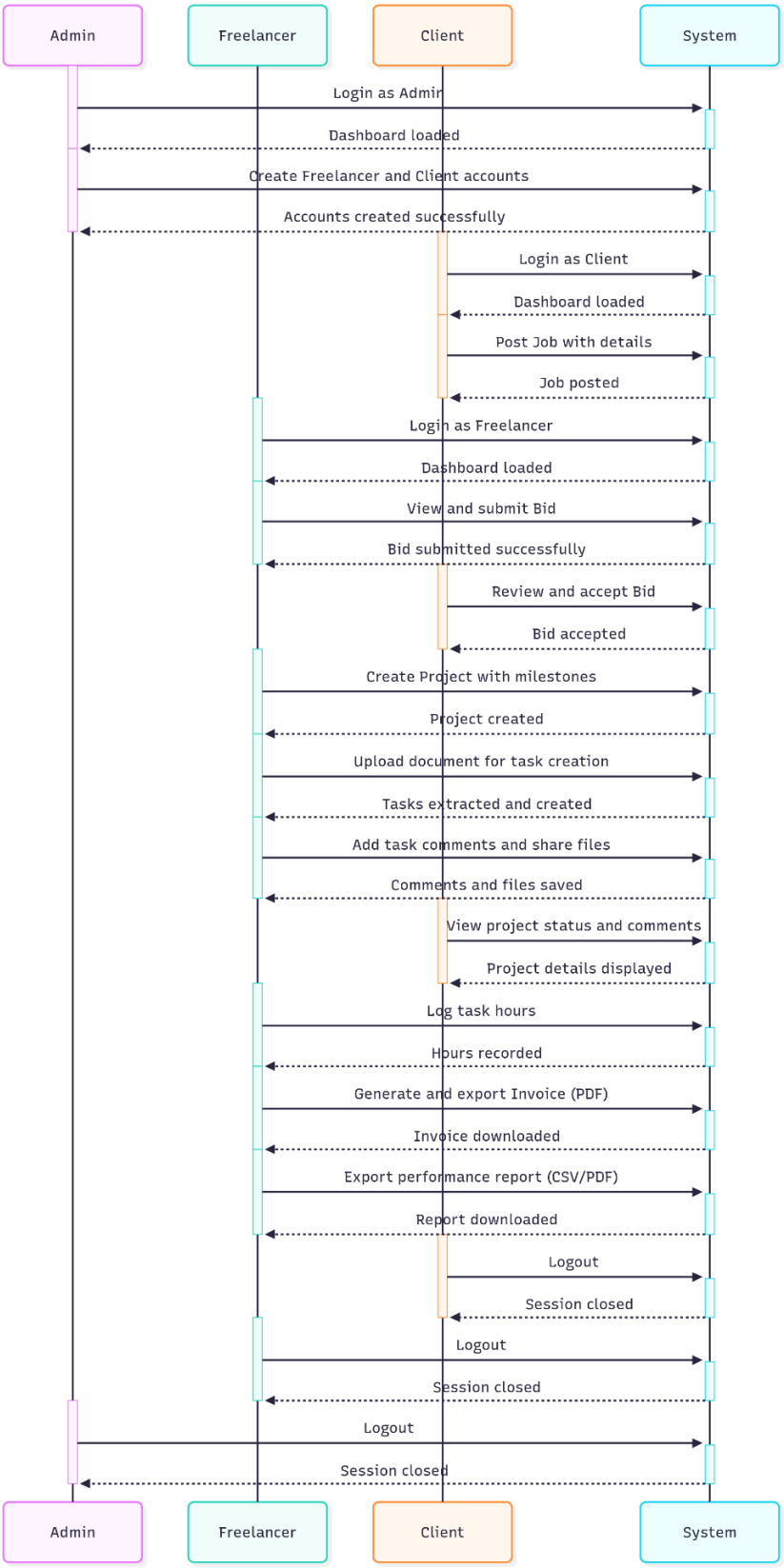

Figure 4 Sequence diagram

CHAPTER 4: IMPLEMENTATION PLAN

This chapter details the implementation strategy for Sajilo Kaam, including a detailed timeline, task breakdown, resource requirements, and tools, ensuring a structured and feasible development process.

4.1 Project Timeline

Sajilo Kaam's development spans August 27 to November 22, structured into phases:

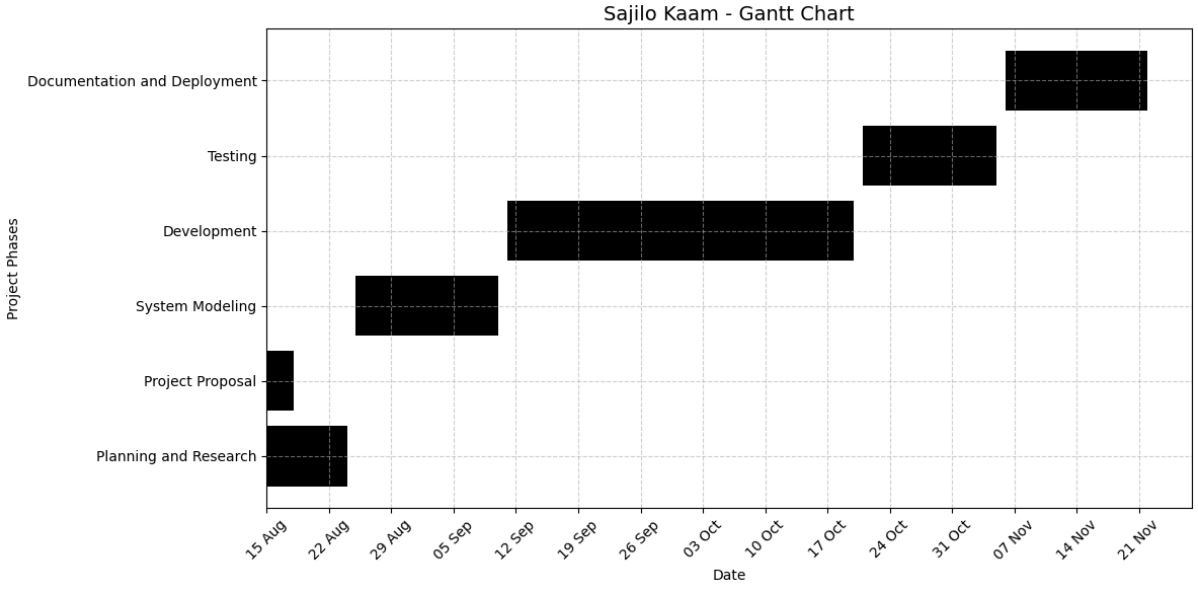

Figure 5 Gantt chart

4.2 Task Breakdown

The system is divided into major modules, with milestone for each:

Table 2 Table of task breakdown

Module	Tasks	Milestone
User Management	Implement admin dashboard, authentication	Secure login system
Bidding Module	Build job creation, bidding, search	Bidding interface
Project Management	Develop project creation, Kanban board	Project tracking workflow
Collaboration System	Create commenting, file sharing	Collaboration functionality
Time Tracking	Implement hour logging, integration	Time tracking tool

Invoicing	Develop invoice creation, PDF export	Invoice generation tool
Document Task Creation	Integrate ML for task extraction	Automated task creation

4.3 Resources Required

Table 3 Table of resources required

Resource	Description	Details
Human Resources	Developer	Full-stack development, UI/UX design
Technical Resources	Laptop, internet access	8GB RAM laptop
Software Licenses	Open-source tools (ReactJS, MySQL, etc.)	No licensing costs

4.4 Hardware/ Software Tools

Table 4 Table of hardware/software tools

Tool	Purpose	Version
VS Code	Code editing	Latest
Postman	API testing	Latest
GitHub	Version control	Free
MySQL	Database management	8.0

CHAPTER 5: EXPECTED OUTCOMES

This chapter outlines the tangible deliverables, anticipated benefits, user impacts, potential risks, and mitigation strategies for Sajilo Kaam, ensuring stakeholders understand the project's value and challenges.

5.1 What deliverables will be produced

The Sajilo Kaam project will generate the following key deliverables:

- A fully functional web-based freelance management system hosted on a server.
- Responsive user interfaces for admin, freelancer, and client roles, built with React JS and Tailwind CSS.
- Secure backend with Spring Boot and REST APIs, implementing business logic and authentication.
- MySQL database with JPA for storing user, project, bid, and task data.
- Admin dashboard for user management and platform analytics.
- Comprehensive testing reports (functional, usability, performance) and user/technical documentation.

5.2 Anticipated results and user impact

Sajilo Kaam is expected to deliver the following outcomes and benefits as:

1. **Enhanced Efficiency:** Centralizes freelance management, reducing administrative time by an estimated 30%.
2. **Improved Collaboration:** Role-based dashboards streamline freelancer-client interactions, increasing engagement.
3. **Accurate Project Tracking:** Aggregated tracking and feedback tools ensure precise evaluations, reducing errors.
4. **Increased Accessibility:** Mobile-friendly design supports diverse users.
5. **Data-Driven Insights:** Report exports enable freelancers to track performance and identify trends.
6. **User Empowerment:** Intuitive interfaces reduce the learning curve, encouraging adoption.

5.3 Risk Analysis

Table 5 Table of risk analysis

Risk	Impact	Likelihood	Severity
Server Downtime	Disrupts access	Low	High
Low User Adoption	Limits impact	Medium	Medium
Technical Bugs	Affects usability	High	Medium
Scalability Issues	Slows performance	Medium	High
Data Security Breaches	Compromises data	Low	Critical

5.4 Potential challenges and mitigation strategies

Table 6 Table of potential challenges and mitigation strategies

Challenge	Mitigation Strategy
Low Digital Literacy	Offer training workshops and user guides
Resistance to Adoption	Conduct demos to showcase benefits
Technical Failures	Implement automated backups, error logging
High Concurrent Users	Use load balancing, caching
Security Vulnerabilities	Regular security audits, encryption updates

CHAPTER 6: CONCLUSION

Sajilo Kaam is a transformative freelance management system addressing inefficiencies in Nepal's freelance sector. It centralizes user management, project delivery, and collaboration using React JS, Spring Boot, and MySQL, offering a secure, scalable, and user-friendly interface for admins, freelancers, and clients. Key features include role-based dashboards, mobile-friendly design, and robust reporting tools. Leveraging Nepal's 51.6% internet penetration in 2023, Sajilo Kaam aligns with technological growth and the demand for digital freelance solutions. Developed over a 6-week period, it ensures technical viability and cost-effectiveness. Sajilo Kaam enhances freelance workflows, fosters collaboration, and demonstrates the impact of strategic IT implementation in improving Nepal's freelance ecosystem.

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APPENDICES

A. UI of Existing System(Upwork)