SYSTEM ANALYSIS
AND DESIGN (E)

# JIGGASHA

Learn through play

# SRS REPORT

Presented to

**Tasnim Sanjida**

# Jiggasha: A Gamified Learning Platform

Submitted By

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# Abstract

Jiggasha is an online platform made to help students from Class 6 to university level study better and do well in exams. It gives students a fun and competitive way to learn through a battle-royale-style exam system, where they can take part in live exams and see how they rank against others.

The platform includes features like performance tracking, ranking systems, and subject-wise challenges. It is built using Next.js, Node.js, and PostgreSQL, which makes it fast and easy to use on any device.

Jiggasha is made to be a smart and helpful tool for students who want to improve their learning. It gives them a new way to study, practice, and grow through regular challenges and feedback. With a clean design and useful features, Jiggasha hopes to become a daily study partner for students all over Bangladesh.

# Acknowledgement

We express our heartfelt gratitude to everyone who supported the creation of Jiggasha, our platform designed to empower students from Class 6 to university level through a unique battle-royale-style exam system. Inspired by the need to provide a competitive and engaging alternative to traditional coaching centers like Udvash, Uttoron, Medico, and Retina, Jiggasha stands as a symbol of innovation in education.

From performance-based ranking to personalized progress tracking and interactive contests, Jiggasha aims to reshape the way students learn, compete, and grow. Special thanks to our mentors for their invaluable guidance, our peers for their active collaboration, and all the students who participated in our survey and testing phases—your feedback helped shape this platform.

This endeavor represents not just a technical solution, but a vision for the future of student-focused learning in Bangladesh. We hope Jiggasha serves as a trusted companion and motivator for every student striving to improve.

Sincerely,
**Team Connection Lost**
(Mueen Ishraq Ananta, Nahin Intesher, Md. Nurul Alam Siddiqei Ador, Md. Abu Bakar, Md. Ali Arman Jayed)

# Chapter 1

# Introduction

## 1.1 Purpose

Imagine a world where learning feels like playing a game, where every lesson is a challenge, and every victory is a step forward in your education. In a traditional classroom, learning can sometimes feel boring or stressful, but we believe that education can be exciting, dynamic, and competitive. What if students could learn by competing, challenging their friends, and testing their skills in a fun and engaging way? That is exactly what Jiggasha is about. Yes, you heard correctly. This is our project name – Jiggasha.

Jiggasha is an online educational platform that makes education fun and interactive. Instead of traditional studying, we use games to help students learn. Our goal is to keep students excited and motivated while they learn new things in a fun way.

## 1.2 Problem Statement

### 1.2.1 Problem Background

Traditional education often feels monotonous and stressful, with students struggling to stay engaged amidst the pressures of exams and assignments. The current learning methods lack interactive and competitive elements, making it difficult for students to stay motivated and excited about their studies.

Students today need a more dynamic approach to learning—one that combines education with fun and competition. Jiggasha addresses this need by turning learning into an interactive game, where students can compete, challenge friends, and track their progress, making education more engaging, rewarding, and motivating.

### 1.2.2 Problem Description

Maximum students faces some similar problems while studying. We try to unditified these problems:

- **Lack of Engagement in Learning:** Traditional education can feel boring and uninspiring, leading to disengagement and lack of motivation to study.

- **Limited Social Interaction:** Students miss out on collaborative and competitive experiences that make learning more fun and dynamic, leading to a sense of isolation during their educational journey.
- **Inconsistent Learning Progress:** Students often struggle with tracking their progress and understanding which areas need improvement, resulting in stagnant learning or uneven academic growth.
- **Difficulty in Staying Consistent:** Without interactive and gamified experiences, sticking to study routines and forming consistent learning habits becomes difficult. Self-paced learning lacks the excitement needed to sustain engagement over time.
- **Lack of Peer-to-Peer Collaboration:** The educational system often doesn't encourage students to work together in a competitive and friendly environment. Without collaboration, students may miss out on valuable feedback and knowledge sharing.
- **Limited Access to Instant Help:** When faced with challenges, students lack immediate resources or guidance. Having to wait for teachers or peers can leave students frustrated, which may deter them from seeking help.

### 1.2.3 Problem Reasoning

We identified some reasons that mainly cause these problems:

- **Outdated Learning Methods:**
  Many academic environments still rely on one-way teaching approaches, which fail to capture the interest and curiosity of today's digital-native students.
- **Lack of Motivation Mechanisms:** Without interactive or rewarding elements, students often struggle to stay focused and enthusiastic about learning, especially outside of the classroom.
- **Limited Real-Time Support:** Students frequently face doubts or questions during self-study, but immediate help isn't always available, which can disrupt the flow of learning and reduce confidence.
- **Minimal Peer Interaction:** Most e-learning platforms lack social features that encourage friendly competition and collaborative learning, making education feel like a solo journey.
- **Fragmented Learning Experience:** Tools for learning, tracking progress, getting help, and social interaction are scattered across platforms, making it harder for students to have a smooth and holistic educational experience.

## 1.3 Goal

To make learning exciting, dynamic, and competitive.

- **Make Learning Fun and Competitive:** Through battle modes like Battle Royal, Pair to Pair, and Friendly Battles, students can test their knowledge while enjoying a game-like environment.

- **Personalize Education:** With AI-powered course support and a personal AI assistant, students receive guidance tailored to their learning pace, interests, and academic needs.
- **Encourage Consistent Progress:** Daily quizzes, progress tracking, and quests keep students motivated to build strong learning habits over time.
- **Foster a Learning Community:** Features like blogs, discussion communities, and friend challenges help students connect, collaborate, and share knowledge with their peers.
- **Academic Support for All Levels of Students:** Courses are available for students from class 6 to undergraduate level, including university admission topics, ensuring wide accessibility.

## 1.4 System Development Life Cycle (SDLC)

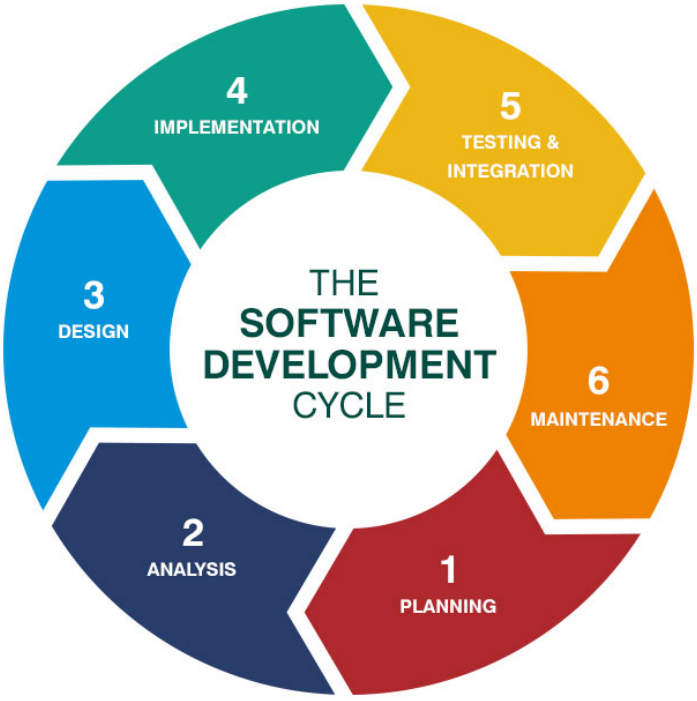


Figure 1.1: Steps of SDLC (Software Development Life Cycle)

SDLC (System Development Life Cycle) is used by software development teams to developing, testing and deploying any software or systems. The steps of the SDLC for our project **Jiggasha** has been written below:

- **Planning:** We will identify the need for an engaging, game-based learning platform and define goals and key features like battle modes, AI assistant, and progress tracking.
- **Requirement Analysis:** We will gather detailed requirements from students and educators to understand desired functionalities such as topic-based battles, interactive courses, and community features.

- **Design:** We will create the system architecture and UI/UX layouts, including designs for battle screens, course modules, leaderboards, and the AI chat interface.
- **Development:** We will develop the platform with core functionalities — including user authentication, game logic, AI integration, course delivery, and progress tracking.
- **Testing:** We will test all modules to ensure they function correctly, checking quiz accuracy, elimination logic, battle matching, and AI assistant responses.
- **Deployment:** We will deploy Jiggasha for public use, making it accessible to students through web and mobile platforms.
- **Maintenance:** We will perform regular maintenance to fix bugs, enhance features, and update content based on user feedback to ensure long-term engagement and performance.

# Chapter 2

# System Study or Information Gathering

## 2.1 Introduction

The effectiveness of **Jiggasha** lies in its revolutionary approach to competitive learning, combining education with engaging features like Battle Royale and Pair-to-Pair Battles. Designed to cater to school and university-level students in Bangladesh, Jiggasha offers AI-assisted learning, affordable pricing, and an inclusive platform that integrates game mechanics with academic rigor. This chapter outlines how the system was designed through careful internal and external information gathering to meet the real needs of today's learners.

## 2.2 Information Sources

### 2.2.1 Internal Sources

Internal sources of information shape the backbone of Jiggasha by collecting insights from team research, testing, and user feedback:

- **User Data & Preferences:** Initial survey results, feature requests, and learning habits of students from classes 6–12 and undergraduate levels inform the platform design and feature development.
- **Beta Testing & Internal Pilots:** Early pilot testing with school and university students helps validate gameplay modes like Battle Royale and assess the usefulness of AI query solving.
- **Team Brainstorming Sessions:** Insightful internal discussions among core developers and education consultants guided the system architecture, gamification model, and platform UI/UX.

### 2.2.2 External Sources

External sources enhance the robustness and innovation of Jiggasha by offering industry-wide knowledge, technological resources, and academic research:

- **Competitor Analysis:** Studying leading platforms like 10 Minute School, Udvash, and Shikho helped identify gaps in personalization, gamification, and affordability.
- **Educational Research:** Articles and white papers on student engagement, motivation through gamification, and digital learning effectiveness provided crucial design frameworks.
- **Open-Source Tools & APIs:** Integration of AI chat modules, leaderboard systems, and progress tracking tools was achieved using available open-source technologies.
- **Expert Consultations:** Teachers, competitive exam mentors, and educational psychologists were consulted to ensure relevance, inclusivity, and cognitive efficiency of each feature.

## 2.3 Information Gathering

### 2.3.1 Internal Sources

- **Survey Results & User Needs:** Gathered from over 500 students, identifying preferences for gamified learning, instant feedback, and subject-specific challenges. Highlighted dissatisfaction with traditional platforms that offer static videos without real-time interaction.
- **Usage Metrics from Pilot Version:** Engagement statistics (average session duration, click-through rates on battles, quiz performance) help refine UI and challenge dynamics. AI chat logs revealed common academic queries, helping prioritize content development.
- **Feedback from Demo Sessions:** In-person feedback from students and parents provided insights into accessibility, affordability, and initial reactions to competitive features.

### 2.3.2 External Sources

- **Market Trends and Ed-Tech Reports:** Analysis of the growing online learning market in Bangladesh and the popularity of platforms with gamified learning interfaces. Reports highlighted a rising demand for personalized, exam-centric apps in regional languages.
- **Technology Integration:** Leveraged NLP-based AI models to develop a Bengali-friendly, fast-response academic chatbot. Used scalable backend solutions compatible with high student traffic during exam seasons.
- **Competitor Features Study:** Evaluated platforms like 10 Minutes Schools, Shikho, Bondi Pathshala, Udvash, and Amar Pathshala to integrate leaderboard, streak systems, and quick rewards—tailored for academic engagement rather than language or skill development.

## 2.4 Similar Websites

Here's an expanded description of each platform, emphasizing how their features relate to Project Jiggasha's objectives:

### 2.4.1 10 Minute School

10 Minute School is a widely recognized platform in Bangladesh that provides short, engaging video lessons in subjects ranging from school-level education to competitive exams. It stands out for its affordability and high-quality content in Bangla. For Jiggasha, 10 Minute School serves as an inspiration for delivering quick, bite-sized lessons with interactive features such as quizzes and assessments. Jiggasha could leverage similar methods for offering short, exam-focused lessons while integrating its unique battle-royale and pair-to-pair competitive features.

### 2.4.2 Udvash

Udvash is a popular local platform offering video tutorials and live sessions for various subjects, including school curriculum and coaching for competitive exams. Its strengths lie in delivering structured, live learning sessions and well-organized course materials. For Jiggasha, Udvash can serve as a reference for content delivery quality and integration with live interactions. Jiggasha can adapt these elements, providing not only live sessions but also incorporating AI-powered quizzes, progress tracking, and gamified challenges to boost engagement.

### 2.4.3 Bondi Pathshala

Bondi Pathshala is a relatively new but growing platform that offers online coaching, particularly for academic subjects and professional exams. The platform emphasizes personalized tutoring and mentorship. Jiggasha could learn from this approach, offering more personalized learning experiences through AI chatbots, adaptive assessments, and customizable learning paths, while integrating competitive features to enhance the overall learning experience.

### 2.4.4 Amar Pathshala

Amar Pathshala focuses on providing affordable, accessible education to a wide range of students in Bangladesh. The platform provides structured learning paths for subjects and exam preparation. Jiggasha could take inspiration from Amar Pathshala's approach to accessibility, ensuring that all students have access to affordable education. Jiggasha can also innovate by adding its own competitive elements, like Battle Royale and Pair-to-Pair Battles, to make learning more interactive and motivating.

### 2.4.5 Shikho

Shikho is an online learning platform designed for school and university students. It offers a structured learning system with video lectures, practice quizzes, and mentorship. Shikho's major strength lies in its interactive video lessons and user-friendly interface.

Jiggasha can draw from Shikho's user experience and engagement strategies while combining it with its own unique features like gamification, AI integration, and real-time competitive learning.

These platforms collectively offer a variety of features that could inspire Jiggasha. For instance, Jiggasha could take elements from 10 Minute School's short-form content, Udvash's live session interactions, Bondi Pathshala's personalized coaching, Amar Pathshala's accessibility, and Shikho's interactive lessons to enhance its own educational offerings.

By integrating these references and combining them with Jiggasha's own innovative features like AI-powered learning, gamification, and competitive elements, Jiggasha has the potential to provide an all-encompassing, engaging, and effective learning experience for students in Bangladesh.

## 2.5 Define and Desired State

### 2.5.1 Define (Current State)

- Students often juggle between multiple apps for academic quizzes, notes, and mock tests.
- Platforms rarely provide real-time competitive features tailored to Bangladeshi students.
- Content is either too expensive or lacks interactivity.
- Limited awareness among guardians and students about advanced, game-based academic systems.

### 2.5.2 Desired State

- A single, interactive platform combining academic rigor with real-time competitive elements like Battle Royale and Pair Battles.
- AI-assisted guidance, helping students solve problems instantly in Bangla and English.
- Affordable and engaging courses, spanning Class 6–12 and university levels.
- A thriving online student community—motivated by fun, progress, and competition.

# Chapter 3

# System Analysis

## 3.1 Introduction

System analysis is a critical phase in the development of **Jiggasha**, aimed at ensuring the platform effectively meets the needs and expectations of current generation learners. The goal is to create an interactive and engaging educational experience by aligning key features such as **Battle Royal Mode**, **Pair to Pair Battle**, **Friendly Battle**, **AI Assistant**, and **Leaderboards** with the learning preferences of students.

This phase involves understanding user behaviors, challenges, and academic goals to design a system that keeps students motivated through gamified learning. It also examines the relationships between different platform modules, ensuring seamless data flow and integration for optimal performance and scalability.

In addition, system analysis evaluates the technical feasibility and usability of the platform's features, such as progress tracking, community engagement, and AI-driven support. By thoroughly analyzing these aspects, system analysis lays the foundation for a user-centric platform that blends education with entertainment, encouraging continuous learning and competition.

## 3.2 Gap Analysis

In the current landscape of educational platforms, there are several gaps in the way learning is delivered to current generations students. Although there are various platforms that provide education, many fail to engage users in a way that aligns with their interests and learning behaviors. These gaps include:

- **Lack of Gamified Learning:** Many educational platforms still use traditional, non-interactive methods, which fail to maintain student engagement over time.
- **Limited Social Interaction:** Most platforms do not offer a strong social element where students can compete or collaborate with peers, diminishing the opportunity for motivation through friendly competition.
- **Generic Learning Paths:** Current platforms tend to offer a one-size-fits-all approach, where learning paths are rigid and do not cater to the individual preferences and academic goals of students.

- **Absence of Real-Time Feedback:** Many platforms do not offer real-time feedback or personalized assistance, leaving students without guidance during critical learning moments.
- **High Course Fees:** Many educational platforms charge high fees for access to courses, which can be unaffordable for students.

**Targeted Gap Analysis: What Others Lack That Jiggasha Offers**

**Jiggasha** fills the gaps left by other platforms by offering the following unique features:

- **Gamified Learning Experience:** Through features like **Battle Royal Mode** and **Pair to Pair Battle**, students can learn in a fun, competitive environment, making education more exciting and interactive.
- **Community Interaction and Engagement: Jiggasha** allows students to create communities, join discussions, and share knowledge through its **Blogs** and social features, fostering collaboration and peer support.
- **Personalized Learning Paths:** With options like the **AI Assistant for Courses**, **Daily Progress Quizzes**, and customizable battle topics, **Jiggasha** adapts to the individual learning style and needs of each student.
- **Real-Time Feedback and Assistance:** The **AI Assistant** provides instant feedback and answers to students' questions, ensuring they receive help when needed and stay on track.
- **Comprehensive Progress Tracking:** With features like the **Leaderboard**, **Quest**, and **Daily Progress** system, students can see how they're performing over time, keeping them motivated and focused on continuous improvement.
- **AI-Powered Personal Support: Jiggasha** offers a **Personal AI Assistant**, which not only tracks academic progress but also provides personalized suggestions for improvement, both academically and in other aspects of life.
- **Affordable Courses:** Unlike many other platforms that charge high fees for access to courses, **Jiggasha** offers its learning modules at an efficient price, making education more accessible to students from different financial backgrounds.

## 3.3 Benchmark

The benchmark for **Jiggasha** provides a thorough comparison of its features, functionalities, and performance metrics against other educational platforms. This evaluation focuses on key elements such as user engagement, gamification, personalization, social interactions, and course affordability.

The benchmark helps ensure that **Jiggasha** stands out by meeting and exceeding industry standards in delivering an engaging and interactive learning experience. It highlights the following points:

| Features | 10 Minute School | Udvash | Bondi Patshala | Shikho | Amar Pathshala | Jiggasha |
|---|---|---|---|---|---|---|
| Battle Royal Mode | × | × | × | × | × | ✓ |
| Pair to Pair Battle | × | × | × | × | × | ✓ |
| Friendly Battle | × | × | × | × | × | ✓ |
| Course | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| AI Assistant In Course | × | × | × | × | × | ✓ |
| Blogs | ✓ | × | × | × | × | ✓ |
| Offline Programs | × | ✓ | ✓ | ✓ | ✓ | × |
| Class 6-12 & Admission | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| University Level | × | × | × | × | × | ✓ |
| Student Communities | × | × | × | × | × | ✓ |
| Personal AI Assistant | × | × | × | × | × | ✓ |

## 3.4 Survey

To ensure ongoing enhancement and to align our service with user needs, we conducted a User Satisfaction Survey. The purpose of this survey was to gather feedback and insights from our users, helping us understand their experiences and expectations. By analyzing their responses, we aimed to identify key areas for improvement and determine how well our service meets their needs.

### 3.4.1 Survey Methodology

1. **Survey Type:** Online questionnaire.
2. **Sample Size:** 70+ respondents.

### 3.4.2 Survey Questions, Results and Analysis

**What is your age group?**

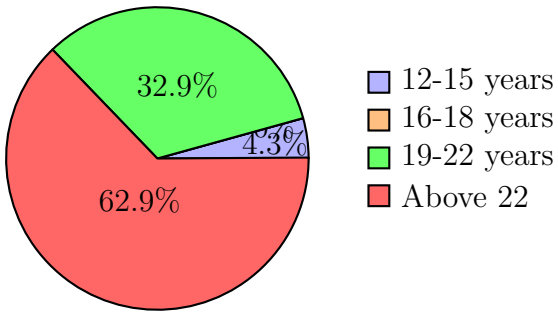


Figure 3.1: Age group distribution

**What is your gender?**

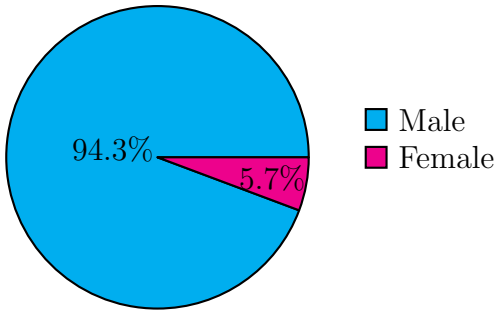


Figure 3.2: Gender distribution

**What is your current position?**

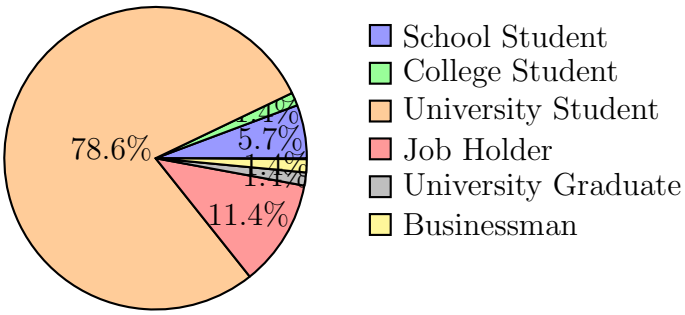


Figure 3.3: Current Position of Respondents

**Which sector do you prefer more for education in recent time?**

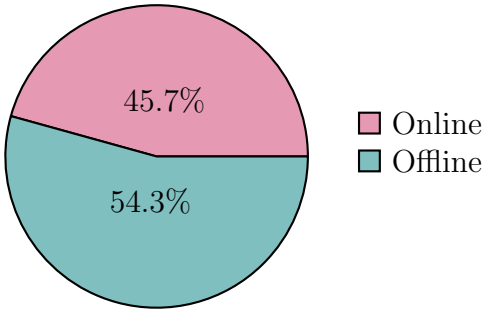


Figure 3.4: Education Sector Preference

**Which of the following best describes your learning style?**

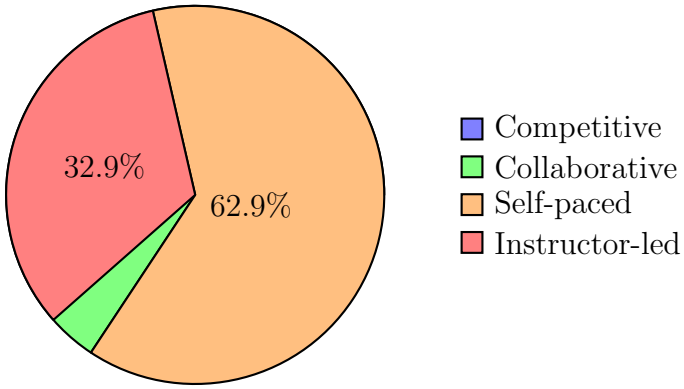


Figure 3.5: Preferred Learning Style

**What motivates you the most in learning?**

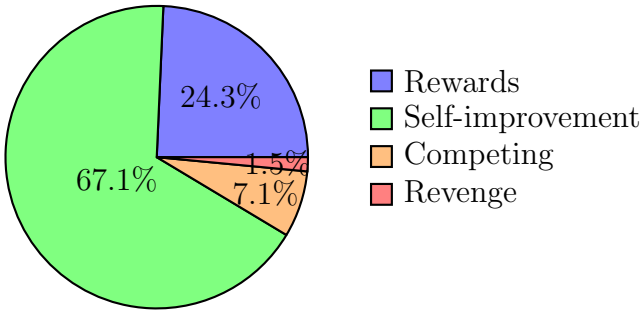


Figure 3.6: Motivational Factors in Learning

**What do you think about Battle Royal competition format for learning?**

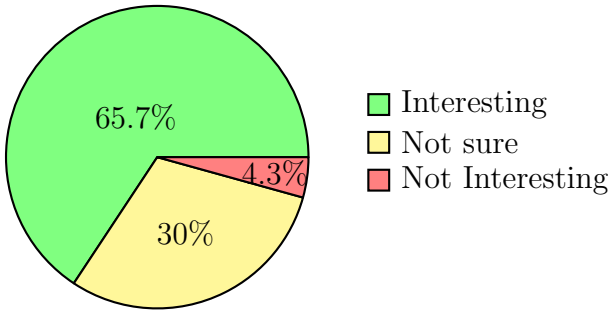


Figure 3.7: Battle Royal Format for Learning

**Feature Preferences for Platforms**

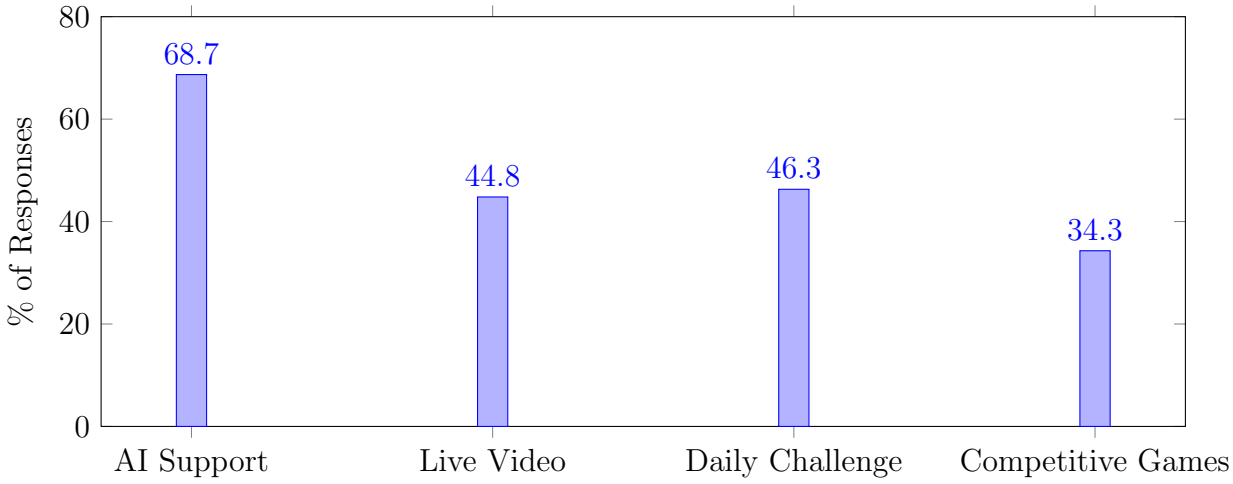


Figure 3.8: Preferred Additional Features

## Analysis on Survey

By analysing servey, we determined to keep the following fetures:

### Battle Royal Mode

In this mode, 10 or 12 players will compete with each other in any academic subject. There will be several rounds, and in each round, some of the lowest-performing players will be eliminated. The last player standing after all rounds will be declared the winner.

### Pair to Pair Battle

Two players will be selected to compete against each other. There will be four rounds in total—each player will choose the topic for two of those rounds.

### Friendly Battle

Any player can create a private room and challenge their friends to compete on a specific academic topic of their choice.

### Courses with AI Assistant

Courses will be available for subjects from class 6 to 12, university admission tests, and undergraduate level. An AI assistant will be available alongside the video content to answer instant queries and solve problems on the spot.

### Daily Progress and Quiz

Users can view their progress based on the last 24 hours of study activity. They can also participate in quizzes based on the topics they studied in the last 24 hours.

**Quest**

New quests will become available after specific time intervals. Users can complete these quests by achieving defined learning goals or tasks.

**Blog**

Students can share their knowledge via blog posts, including notes, guidelines, and more. Other students can search, read, and find helpful posts. Each blog post will support a voting system (upvote and downvote), and posts will be sorted based on votes.

**Leaderboard**

Players can earn points by winning in Battle Royal Mode and Pair to Pair Battles. Points cannot be earned through Daily Quizzes or Friendly Battles. Users will be ranked on the leaderboard based on the points accumulated.

**Personal AI Assistant**

A personal AI assistant will monitor each user's progress and provide personalized suggestions. Users can ask the assistant for academic help or any type of life guidance and improvement tips.

**Communities**

Students can create or join communities based on class level or subject interests. Within these communities, members can ask questions, share knowledge, and collaborate to solve academic problems.

### 3.4.3 SWOT Analysis

SWOT Analysis for **Jiggasha** has been written below:

**Strengths:**

- **Innovative Features:** Unique offerings like *Battle Royale* and *Pair-to-Pair Battles* enhance engagement.
- **AI-Powered Learning:** Instant query-solving through *AI-driven course assistance.*
- **Affordable Pricing:** Lower course fees compared to other platforms.
- **University Level:** We have also focus on *undergraduate-level courses.*

**Weaknesses:**

- **Initial User Base:** A smaller starting community may impact online gaming experiences.
- **Limited Content:** Fewer courses compared to established platforms in the early stages.

- **Brand Awareness:** Less recognition among students and parents.
- **Marketing Constraints:** Limited budget for promotions, making it harder to compete with larger competitors.

**Opportunities:**

- **User Engagement:** Features like *Battle Royale* and *Pair-to-Pair Battles* can drive a highly active user base.
- **Global Expansion:** Success in the local market can pave the way for international reach.
- **Growing Ed-Tech Industry:** The rapid rise of online learning provides a favorable market landscape.
- **Revenue Potential:** A strong active user base can lead to *significant revenue generation.*

**Threats:**

- **Competition & Imitation:** Larger platforms may replicate our unique features.
- **User Retention Risks:** Without continuous improvement, students may return to traditional platforms.
- **Profitability Challenges:** Lower course fees may impact long-term sustainability if user growth is slow.
- **Content Piracy:** Increasing risks of *unauthorized distribution* of course materials.

## Strategy

To build a strong foothold in the ed-tech space, **Jiggasha** will capitalize on its strengths—such as gamified features like Battle Royale, AI-powered assistance, and affordable course pricing—to engage and retain users, especially at the undergraduate level. We will address our initial limitations by building partnerships to expand content, promoting brand awareness through low-budget digital campaigns, and growing our user base through referral incentives and community-driven engagement. With the rise of online learning, **Jiggasha** will aim for local dominance before expanding globally, while continuously innovating to stay ahead of competitors. To ensure long-term sustainability, we will introduce premium services, maintain high user engagement, and implement strict content protection measures.

# Chapter 4

# Design of the System

## 4.1 Introduction

This chapter outlines the overall design plan for the system, covering both the big picture and the finer details of how each feature will work. It defines the core components of the platform and how they will interact within the system's structure. The aim is to build a system that is scalable, user-friendly, and capable of handling data efficiently.

The design will be illustrated through diagrams that capture both functional and non-functional requirements. These visuals will serve as a roadmap for developers during implementation, ensuring a smooth experience for users—from interactive quizzes and AI-guided learning to community engagement and progress tracking.

## 4.2 Context Diagram

The Context Diagram illustrates the interaction between the system and external entities. It outlines the system's boundaries and offers a clear snapshot of how information flows between the system and users or other connected systems.

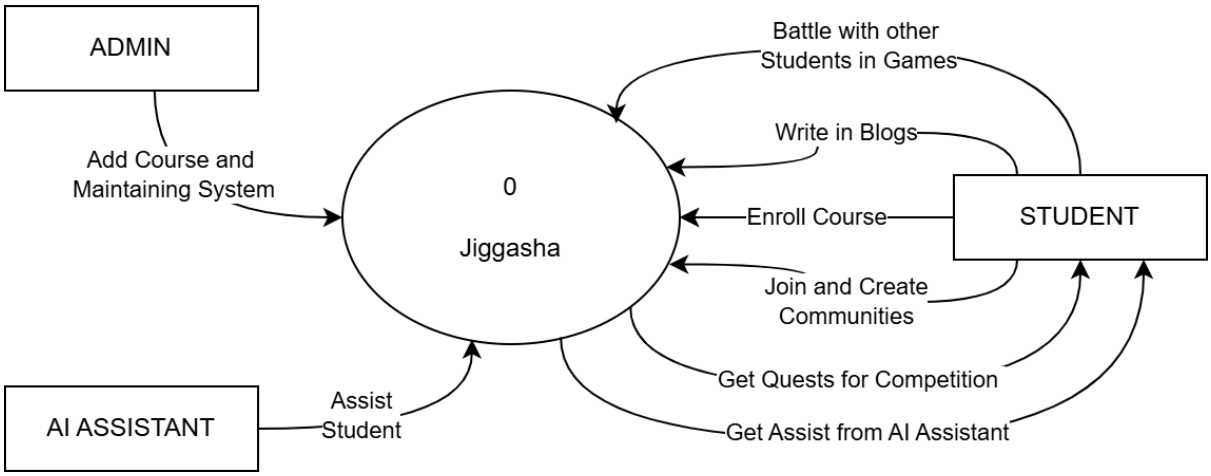


Figure 4.1: Context Diagram for Jiggasha

### External Entities

- **Student:** Primary actor of the system.
- **Admin:** Maintain system and resources.
- **AI Assistant:** Provide various services.

### System Functions

- Students can enroll and access the courses.
- Students can play Battle Royal, Pair-to-Pair, or Friendly Battle with other users.
- Community and blogs for social interaction.
- The student can assist with AI.
- Admin can add resources and maintain the system.
- Students can complete the quest and keep tracking the daily activity.

## 4.3 Use-Case Diagram

The Use-Case Diagram illustrates the major functionalities of the system and how different types of users interact with them. It identifies the primary actors, such as students and administrators, and showcases their interactions with features like quizzes, battles, course access, and community forums. This diagram helps visualize the system's scope and user-system relationships at a high level.

### 4.3.1 Use-Case Descriptions

**UC-001: Battle With Others**

**Description:**
This use case allows users to participate in a real-time quiz battle against other users. It is designed to enhance engagement through competitive learning, where users compete by answering questions within a time limit.

**Actors:**
Student
Opponent (Another Student)

**Primary Actor:**
Student

**Pre-conditions:**

- The user must be logged into the Jiggasha platform.
- A stable internet connection must be available.
- There must be at least one other active user available to battle.

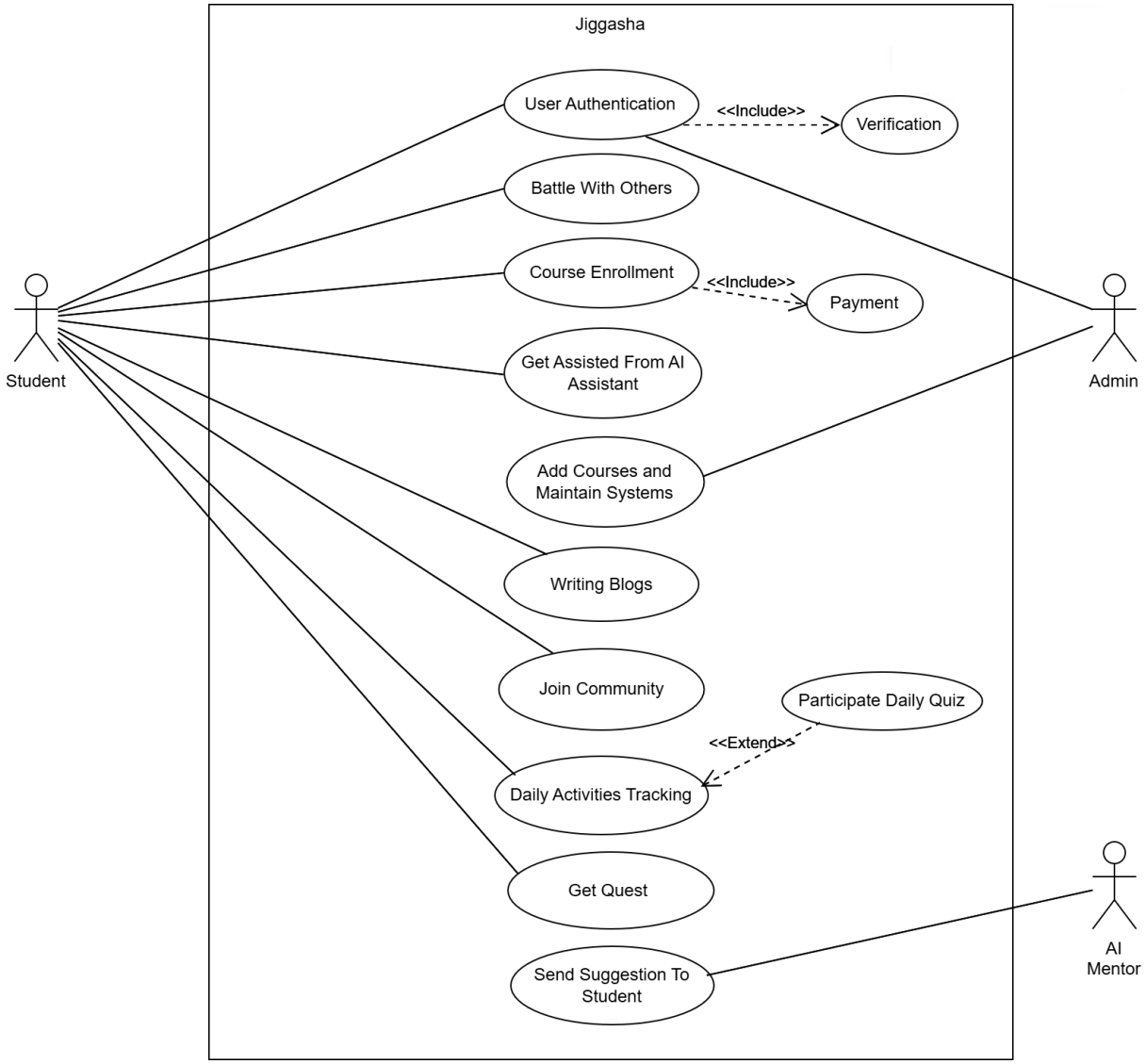


Figure 4.2: Use-Case Diagram for Jiggasha

**Main Flow of Events / Success Scenario:**

1. The user selects the *"Battle with Others"* option from the dashboard.
2. The user selects a subject or topic for the battle.
3. The system matches the user with an available opponent.
4. A set of questions is delivered to both players simultaneously.
5. Users answer the questions within a limited time frame.
6. After all questions are completed, the system calculates the score.
7. The winner is announced based on performance.
8. Both users receive performance feedback and analytics.

**Alternative Flow of Events:**

- **A1:** No opponent is available → User may wait in a queue or exit.
- **A2:** Opponent disconnects mid-battle → System either declares the user as winner or reassigns a new match.
- **A3:** User exits mid-battle → The battle is marked as forfeited.

**Post-conditions:**

- User's battle history and score are updated.
- Points and rankings are adjusted based on the outcome.
- Analytics are available for self-evaluation.

**UC-002: Course Enrollment**

**Description:**
This use case describes the process by which a student enrolls in a course on the Jiggasha platform by completing a payment. The system ensures secure handling of payment and grants access to course materials upon successful enrollment.

**Actors:**
Student
Admin
Payment Gateway

**Primary Actor:**
Student

**Pre-conditions:**

- Admin should add the course.
- The student must be logged into their Jiggasha account.
- A valid payment method must be available.
- The selected course must be open for enrollment.

**Success Scenario:**

1. The student navigates to the course catalog.
2. The student selects a course and clicks on "Enroll".
3. The system displays course details and payment amount.
4. The student confirms and proceeds to payment.
5. The system redirects the user to a secure payment gateway.
6. The student completes the payment successfully.
7. The system verifies the transaction and enrolls the student.

8. Access to the course content is granted.

**Alternative Flow of Events:**

- **A1:** Payment fails → The system notifies the student and prompts to retry.
- **A2:** Student cancels payment → Enrollment is aborted, and no charges are applied.
- **A3:** Course becomes unavailable during payment → The system informs the student and refunds if charged.

**Post-conditions:**

- The student is enrolled in the course.
- Course content becomes accessible.
- Transaction details are stored for record and reference.

### 4.3.2 Activity Diagram

The Activity Diagram represents the dynamic flow of actions within the system. It outlines the step-by-step sequence of activities that occur when a user interacts with features like joining a quiz battle, accessing a course, or tracking progress. This diagram helps in understanding the logic, decision points, and user navigation paths, ensuring smooth and efficient user experiences.

Activity Diagram for Jiggasha has been attached below.

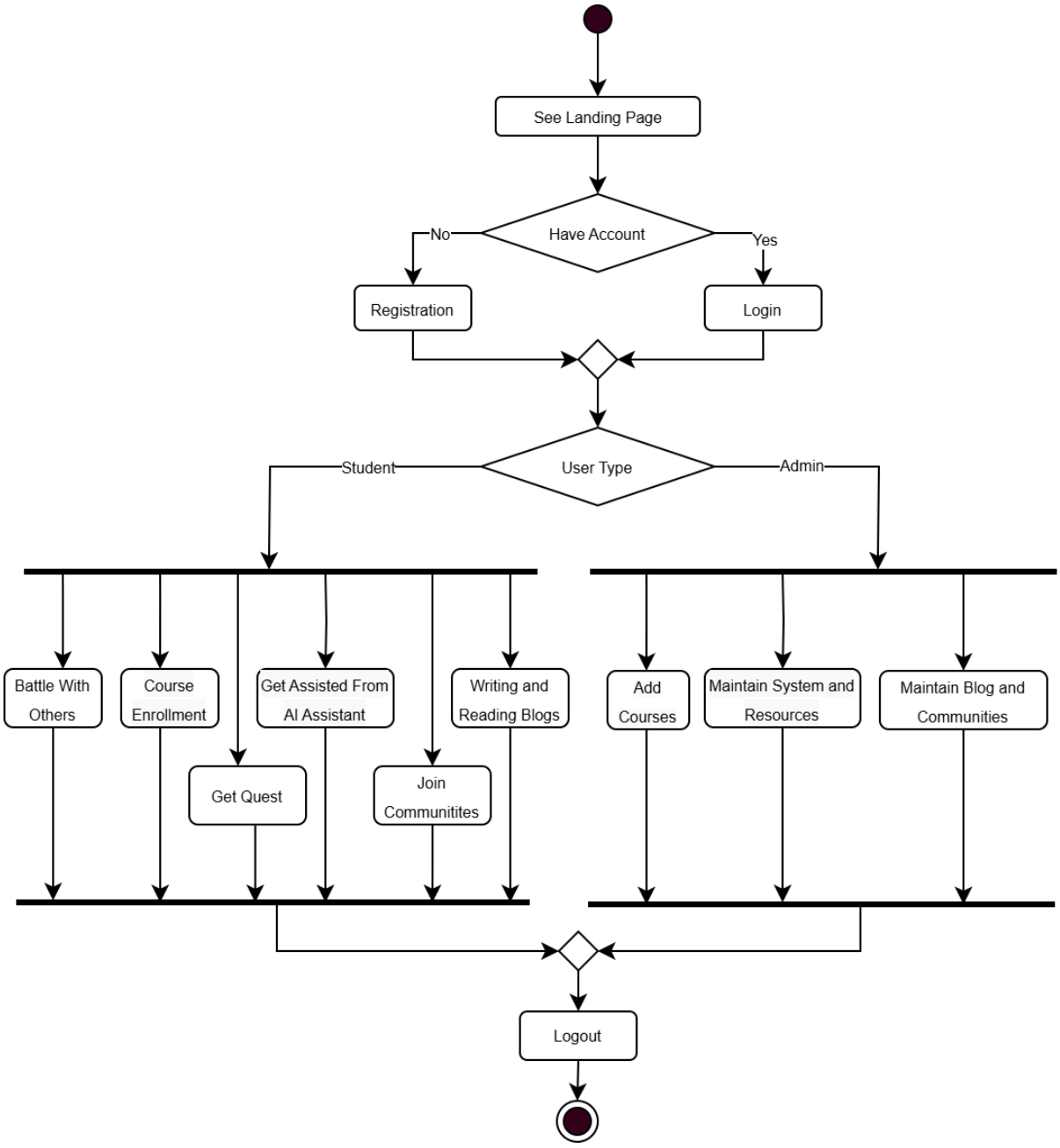


Figure 4.3: Activity Diagram for Jiggasha