Quiz & Earn: A Dual-Mode Quiz App with Real-Time Rewards and Competitive Leaderboard

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Abstract

The Quiz Application supports both online and offline modes. The application is designed to address the challenges of inconsistent internet connectivity while providing a seamless experience for quiz creation, participation, and evaluation. The system integrates a user-friendly interface, secure data management, and real-time synchronization for online functionality, while ensuring offline usability through local storage. The app aims to benefit educational institutions, students, and quiz organizers by offering an efficient and reliable solution.

Introduction

This project proposes the development of a mobile-based application, Quiz & Earn, design to test users' knowledge across a variety of categories, including International, Science, Math, Islam, General Knowledge, History, Bangle, Sports etc.

The app will be developed using Java programming language for the only Android platform, with PHP for backend operations. It will incorporate Lottie animations to provide an engaging and visually appealing user experience, utilize Card View for creating smooth and responsive layouts, and include a secure payment and withdrawal system to handle cash rewards efficiently.

Problem Domain

The current landscape Many existing quiz applications focus primarily on entertainment, lacking meaningful reward systems and a strong educational foundation. These apps often limit users to online quizzes without providing a comprehensive, competitive, and rewarding experience. Additionally, most fail to create a platform that effectively combines education, competition, and tangible rewards, leaving users with an experience that is enjoyable but ultimately financially unrewarding.

Motivation

- **Learn and Earn**: Empower yourself by turning your knowledge into real money, making education a rewarding experience.
- **Competitive Edge**: Challenge yourself in tournaments, improve critical thinking, and rise as a winner among peers.
- **Personalized Learning**: Choose topics you love and excel in areas that truly interest you.
- **Inclusive and Motivating**: Connect education with financial incentives, inspiring users to learn, compete, and succeed in a dynamic, fun-filled environment.

Objective

- **To create an intuitive and user-friendly quiz app** that makes learning fun, engaging, and accessible to users of all ages.
- **To introduce competitive tournament modes** where users can participate for real money rewards, adding excitement and motivation.
- **To provide premium, high-quality quizzes** for subscribers, ensuring a deeper and more rewarding learning experience.
- **To implement a secure and seamless payment system** for effortless deposits, withdrawals, and transactions.
- **To foster continuous learning and personal growth** through gamified experiences with challenging and thought-provoking questions.

Literature Review & Compare Table

Name	Key Findings	Offline	Online	Learn & Earn	Category
QuizGiri	Focuses on entertainment and earning but lacks [1] offline functionality, limiting flexibility.	No	Yes	Yes	Yes
QuizMaster	Similar to QuizGiri but also lacks offline functionality [2]	No	Yes	Yes	Yes
Existing Quiz Application	Focus on entertainment, lacking earning. [3]	Yes	No	No	No
Quiz & Earn	Offers earning, a competitive leaderboard, offline and online modes, an advanced user interface, and subscription options.	**Yes**	**Yes**	**Yes**	**Yes**

Table 1.0: Literature Review & compare
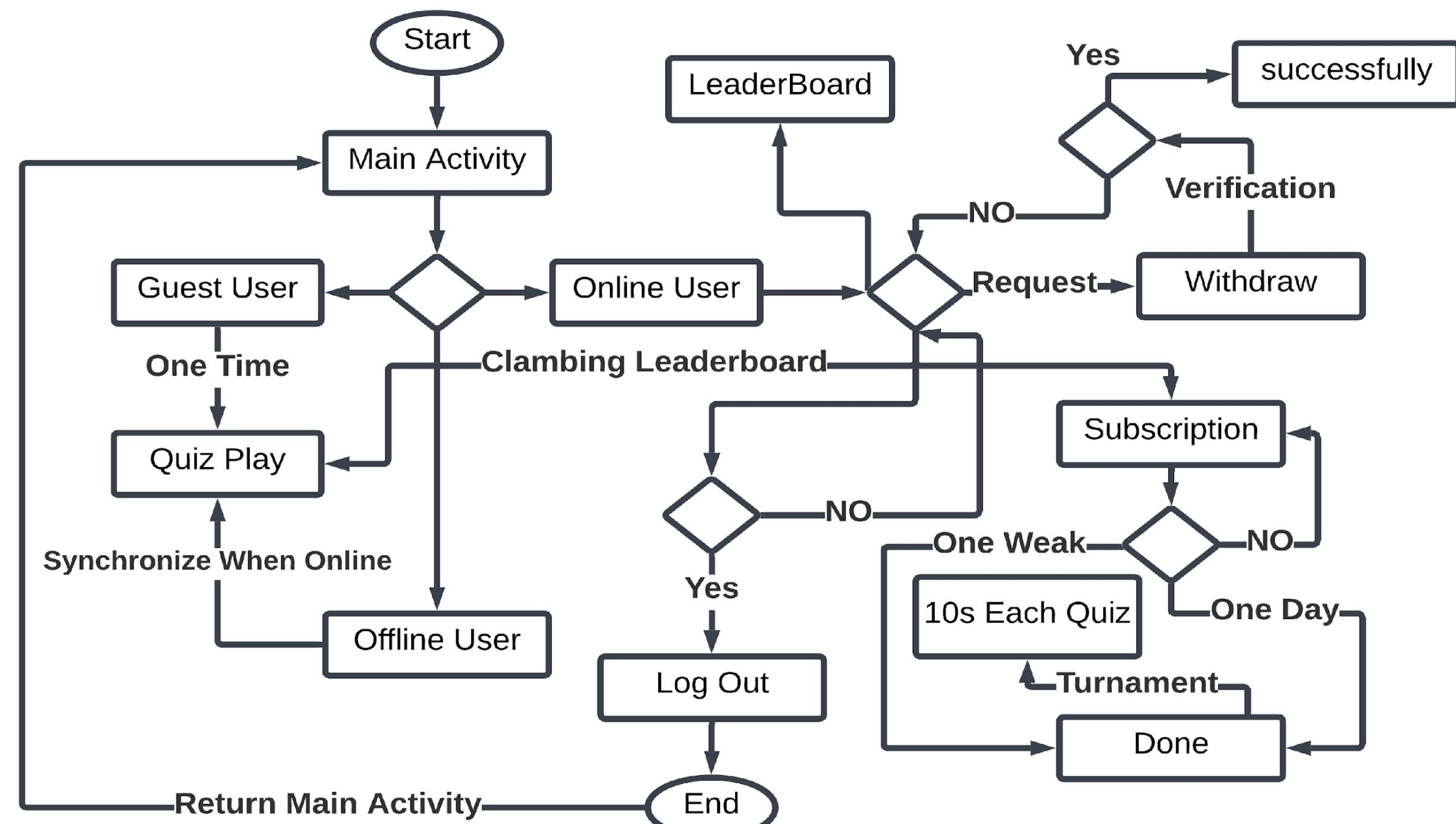
Methodology

Figure 1.0: Block Diagram

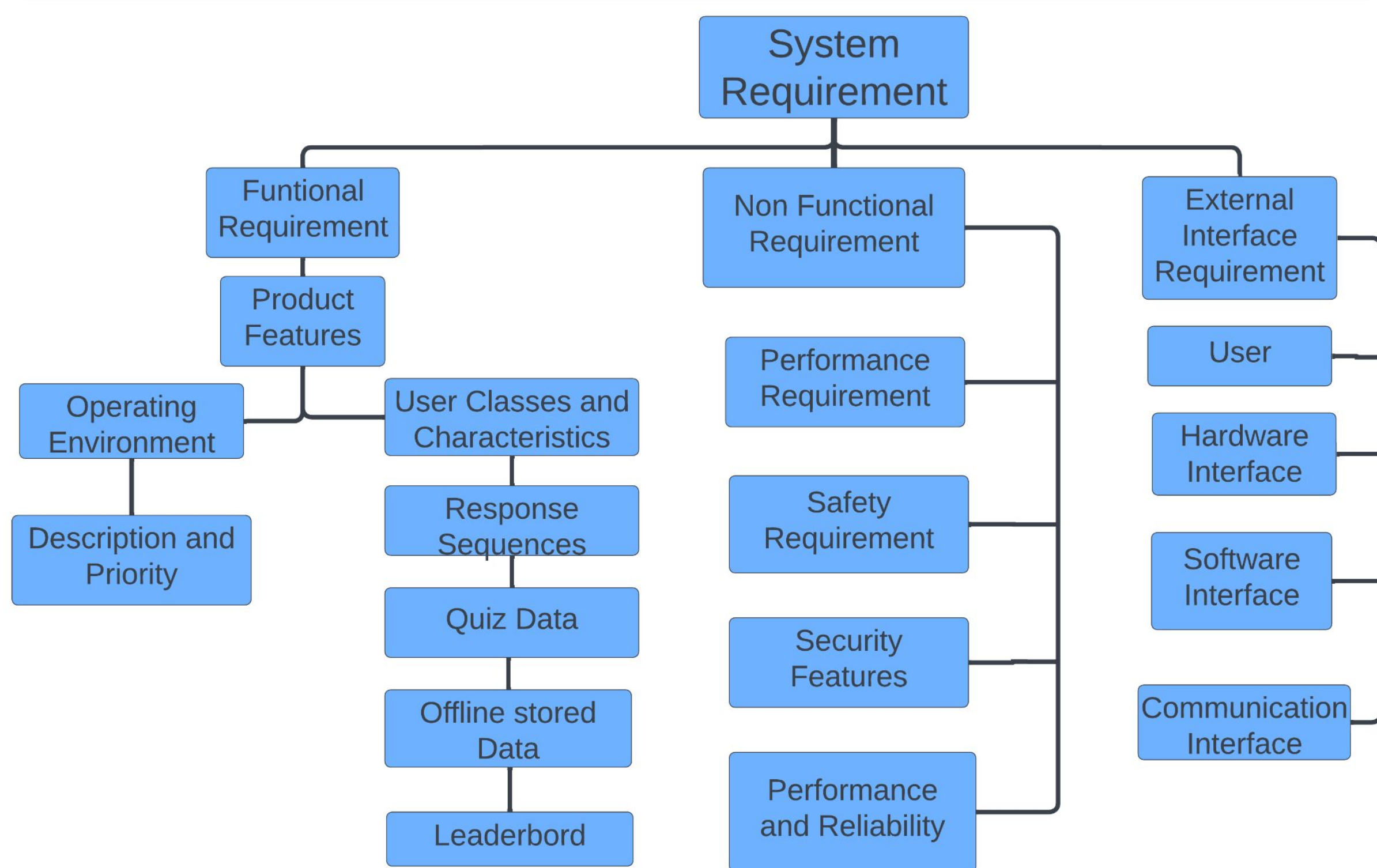## Software Requirement Specification

Figure 2.0: Software Requirement Specification

SDLC Model Selection

Priority	Criteria	Waterfall	V-Shape	Iterative	Spiral	Agile	Prototype
5	Well known requirement	No	No	Yes	Yes	Yes	Yes
3	Technological knowledge	Yes	Yes	No	No	No	No
5	Efficiency	Yes	Yes	Yes	No	Yes	No
6	Risk analysis	No	Yes	No	Yes	Yes	No
3	User testing ability	No	No	Yes	Yes	Yes	Yes
5	Dependability and Security	Yes	Yes	No	No	Yes	No
3	Time consuming	Yes	Yes	Yes	Yes	No	No
Total 30	Over all	16	22	16	17	24	08

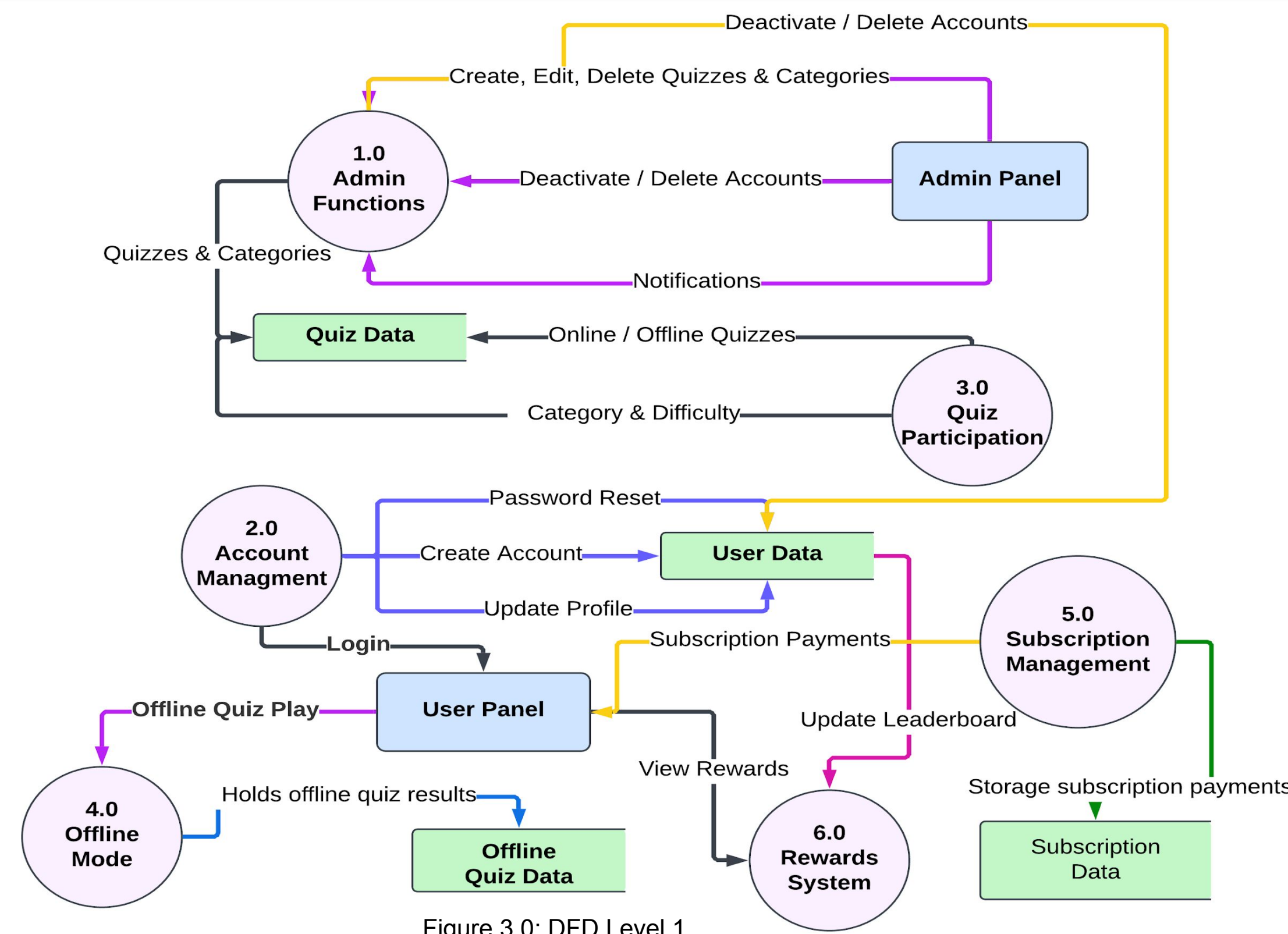Table 2.0: SDLC Model Selection

DFD Level 1

Figure 3.0: DFD Level 1
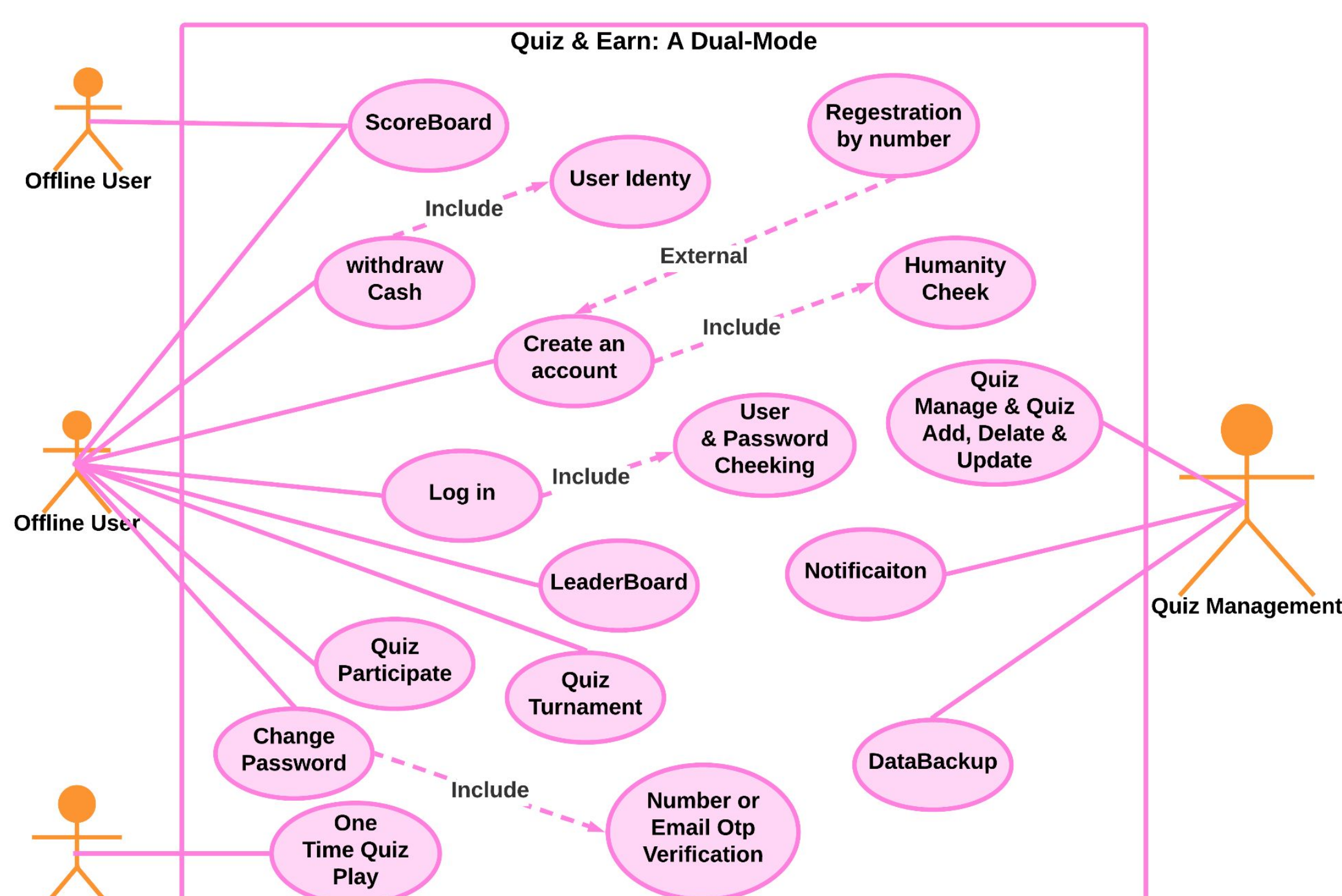
Use Case Diagram

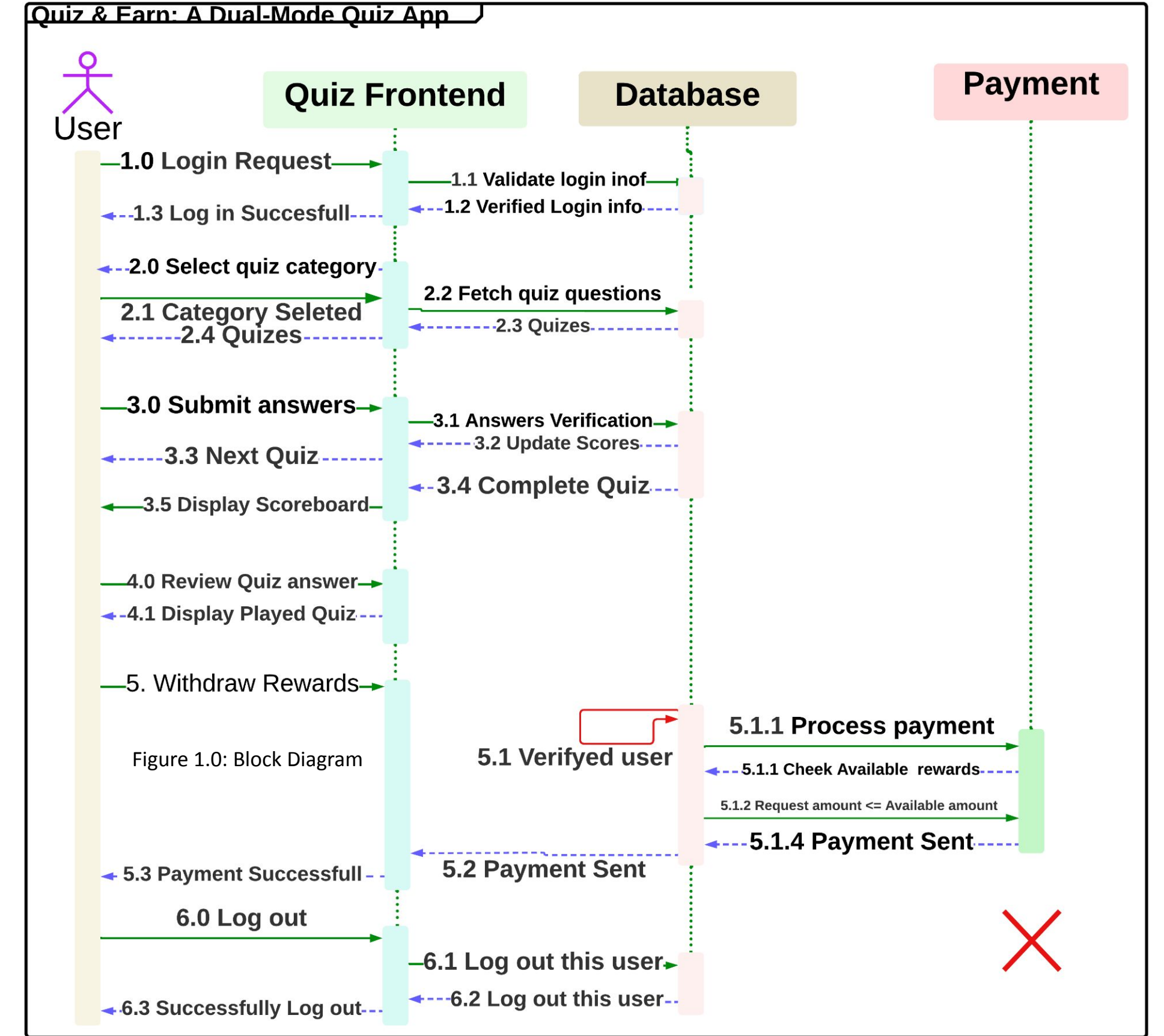Figure 4.0: Use Case Diagram

Sequence Diagram

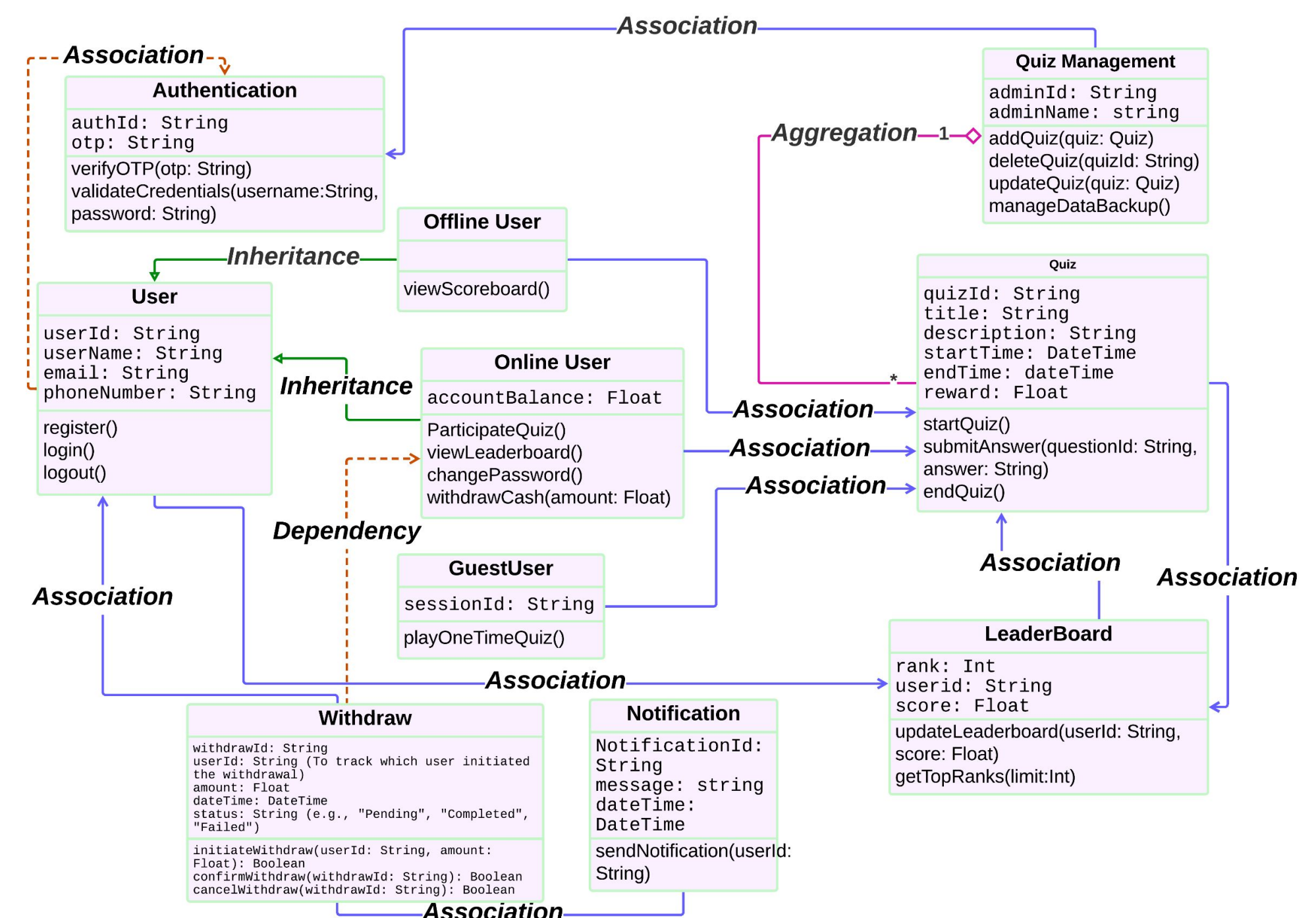Figure 5.0: Sequence Diagram

Class Diagram

Figure 6.0: Class Diagram

UI Design

Figure 7.0: Figma Design

Social Impact

- **Offline Accessibility**: Ensures students in villages or low-internet areas can learn without connectivity limitations.
- **Educational Alternative**: Offers an engaging and educational experience as an alternative to addictive games like PUBG and Free Fire.

Conclusion

The **Quiz & Earn** app transforms learning by combining education, entertainment, and financial rewards. With offline access, dual-mode functionality, real-time rewards, and competitive leaderboards, it ensures inclusivity and engagement for users in all areas. By offering an educational alternative to addictive gaming, the app fosters intellectual growth and continuous learning, making a lasting impact on education and entertainment.

Reference

[1] Quiz Master, "Game Rules," *Shabox*, [Online]. Available: https://quizmaster.shabox.mobi/Landingpage/GameRules. [Accessed: Dec. 16, 2024].

[2] QuizGiri, "QuizGiri on bKash," [Online]. Available: https://bkash.quizgiri.com.bd/. [Accessed: Dec. 16, 2024].

[3] ProProfs Quizzes, "Fun Quizzes, Questions & Answers" [Online]. Available: https://www.proprofs.com/quiz-school/topic/fun. [Accessed: Dec. 16, 2024].