

StudyQuest

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PROBLEM	CURRENT SYSTEM	REQUIREMENTS
The lack of a unified social networking platform that integrates gamified elements (XP bars, achievements, profile customization, etc.) along core features such as friend requests, messaging, profile management, post engagement, and user retention. Many platforms fail to provide the integration of these features with modern authentication and backend services	Current Solutions for Profile Include: Avatar Select: A selector that allows the user to pick their profile avatar. XP level up system: Based on study progress, completing tasks and earning achievements. Item Inventory: Users obtain items when they gain achievements. Achievements & Badges: Earn badges for completing challenges in courses and quizzes. User data sync: All data is synchronized in the system with Firebase	Functional Requirements - User Authethication & Profile Management - XP and Leveling System - Achievements & Badges - Inventory System: Virtual Items - Profile Synchronization Non-Functional Requirements: - Scalable backend using FireBase - Responsive Design and visually engaging interface - Secure authentication and real-time updates. - User data synchronization.
SYSTEM DESIGN	OBJECT DESIGN	IMPLEMENTATION
System Design is structured as: - FrontEnd: Built using Next.js for dynamic routing and client side interactivity. - BackEnd / Database: Firebase (Firestore) for real-time database, authentication and storage (Very Important for Profile Syncing) - UI Design: Navigation leading to features.Gamified visual elements such as XP bar, achievement badges.	Key Components include: - User Profile UI: Interacts with the Avatar to customize the user’s avatar and track their progress (XP, level). - XP & Leveling System: Calculates XP based on the completion of Achievements, which is then added to the User Profile UI. - Achievements: Unlock new achievements based on user milestones and updates the User Profile UI. - Inventory: Stores items that are earned as users progress, and these items can be used to customize avatars or unlock features (Avatar Costumization IP). - Firebase Sync: Ensures that user data (XP, level, achievements) is synced with Firebase in real-time across devices.	Implementation as follows: - FrontEnd: Designed with React components (Avatar Customization) and styled using CSS. Integrated with Next.js for routing and rendering pages. - BackEnd: FireBase FireStone for database operations (storing profile achievements, XP and leveling, avatars, etc.) - Unit Testing: Components and backend interactions were tested to ensure functionality (e.g., avatar updates, XP and leveling logic).
VERIFICATION	SUMMARY	REFERENCES
- Integration Testing: Ensured that different components (such as the user profile, inventory, and achievements) worked seamlessly together.Verified that the XP and leveling system accurately reflected user progress and that achievements were awarded correctly. - Functional Testing: Tested core functionalities including: - Avatar Customization: Confirmed that the avatar customization system worked, even with the limited options available (character selection and basic outfits). - XP and Leveling: Validated that XP was earned correctly based on completed tasks, and users leveled up as expected. - Achievements and Inventory: Ensured that badges and inventory items were awarded appropriately after completing study tasks.	This project presents an innovative social learning platform that combines gamification with educational tools to boost user engagement and motivation. By incorporating features like customizable avatars, XP progression, achievements, and virtual rewards, the platform creates an interactive learning experience. Utilizing Firebase’s powerful backend for real-time data synchronization and Next.js for dynamic, responsive frontend design, the application is optimized for scalability and cross-device use. The result is a seamless, engaging, and user-centric platform that fosters continuous learning and growth. Suitable for scalable deployment..	Profile Fonts : (https://fonts.google.com/specimen/Cinzel) CSS & Animations : https://css-tricks.com/almanac/properties/a/a-animation/ Firebase Documentation: firebase.google.com/docs Next.js Documentation: nextjs.org/docs