Survival Draft Final Project Summary

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Project Overview

This project proposes a mobile app that blends the excitement of fantasy sports with real-time wildlife tracking. Users draft teams based on real wild animals, which is powered by data from conservation organizations, and compete in weekly matchups based on the animals' actual behaviors, such as hunting, eating, sleeping, and traveling. Daily updates give users insight into each animal's activity, while an AI model provides performance projections to help with team decisions. The app also features an interactive map that visualizes animal movement and behavior in real time.

The app is designed to be fun and accessible for all ages, and aims to bridge generations (for example, parents who enjoy fantasy sports and children who love animals) while engaging wildlife enthusiasts, fantasy-draft experts, and casual users. Beyond gameplay, the project's larger purpose is to raise awareness and support for wildlife conservation by giving users the ability to view the lives of animals from a different perspective and encouraging donations to conservation efforts.

Requirements

The system's core use cases follow a complete user journey, from account creation to end-of-season gameplay. Users begin by registering or logging in, then set up games with custom rules before drafting teams of real animals using live tracking data and AI-generated score projections. Games can be shared through invite codes, enabling friends to play together. During each weekly round, the system automatically updates animal activity and fantasy points, while users can adjust their team with bench or swap actions. Weekly reports summarize results, and a final season report concludes gameplay. Additional features include donation options that award profile badges and fault-tolerant handling of invalid inputs, outages, and API failures.

System requirements emphasize secure authentication, structured fantasy-league mechanics, and proper data handling. Key functions include registration, drafting, match progression, invitations, donations, and reporting. Reliable external animal-tracking and AI services support data-driven gameplay, while performance, fault tolerance, and backup requirements ensure stability under increased load. The design prioritizes strong security, encrypted storage, privacy controls, and detailed logging. Usability requirements focus on accessibility, thematic consistency, tutorials, and customization. Operational standards ensure internet reliability, smooth installation, proper versioning, and legal compliance. The acceptance test suite, having 53 tests covering 61 requirements, validates all major systems, with several multi-requirement tests targeting complex areas such as database reliability, AI calculations, accessibility, and map functionality.

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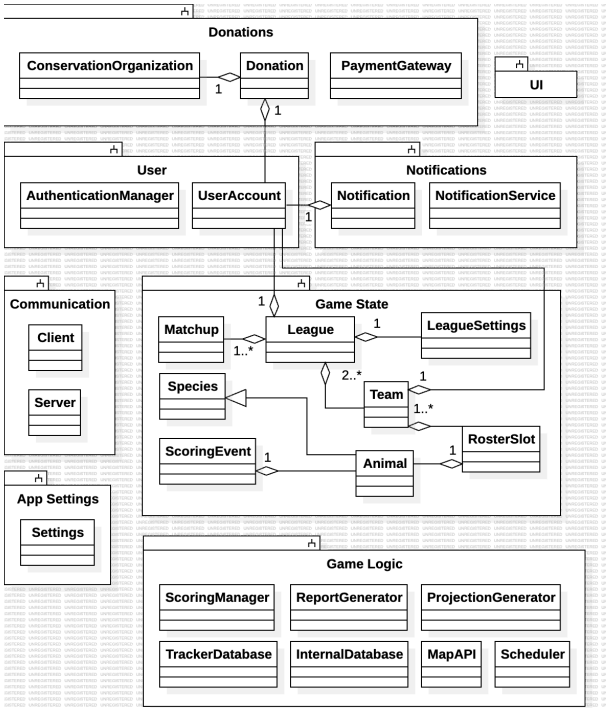

Figure: Final System Design

Design

The proposed system is designed to create a fun, intuitive, and educational experience by abstracting backend processes behind a user-friendly interface. It follows a client–server architecture in which the mobile app handles user interaction, while the server manages core data, gameplay logic, and communication with external systems. Subsystems such as Users, Donations, Notifications, Game State, and Game Logic divide responsibilities cleanly to allow for better organization. Persistent game and account data is stored securely in an SQL database, thus allowing the app to remain lightweight and accessible to lower-end devices. Design patterns like Singleton and Proxy support efficient resource access and clear separation of responsibilities, and a dedicated Scheduler component automates matchup progression.

The design also incorporates robust security, access control, and error-handling strategies to protect user data, payment information, and external API interactions. The system is structured for maintainability and future growth, allowing later additions such as AI-powered commentary, public leagues, AR features, trading systems, and expanded tournaments. Overall, the design emphasizes scalability, modularity, and sustainability while supporting an engaging competitive conservation-focused fantasy sports experience.

Project Issues

There remain several open issues, such as the reliability or granularity of wildlife data, API costs, scaling requirements, ethical considerations, and network limitations. Off-the-shelf solutions like Flutter, Firebase, and APIs for accessing pre-trained AI models have been proposed to reduce development effort.