

# **Software Requirements Specification for QuestNest**

**Lab 2 Sections 1 & 2**

**Version 2**

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## **1 Introduction**

This section provides a high-level overview of the QuestNest Software Requirements Specification (SRS). It defines the document's purpose, scope, glossary and references, and provides an overview for the remaining SRS sections.

### **1.1 Purpose**

The purpose of this Software Requirements Specification (SRS) is to define the functional and non-functional requirements for the QuestNest application. It serves as a reference for the development team and stakeholders by outlining what the system shall accomplish and providing a foundation for its design and implementation.

### **1.2 Scope**

QuestNest is a cross-platform mobile application developed to improve household chore management through structured task organization and positive reinforcement. The system enables caregivers to assign and verify tasks while motivating children to complete them using experience points (XP), leveling, and customizable rewards. By providing structure and accountability, QuestNest aims to balance household responsibilities, reduce caregiver workload, and encourage development of responsibility and lifelong habits in children.

### 1.3 Definitions, Acronyms, and Abbreviations

**Application Program Interface (API)** – a set of protocols that allow different software applications to communicate and interact with each other.

**Collaborative Family Reward** – collaborative custom rewards awarded if all members of the family complete their assigned tasks.

**Cross-Platform Application** – software designed to operate on multiple types of devices (e.g., iOS and Android) from a single codebase.

**Experience Points (XP)** – points awarded as a progression indicator for task completion.

**FastAPI** – a modern web framework for Python that supports the creation of RESTful APIs.

**Firestore** – a cloud-based NoSQL database provided by Google, designed for real-time data synchronization across devices.

**Flet** – a Python framework built on Flutter that enables cross-platform development and user interface design.

**Model-View-Controller (MVC)** – a software architectural pattern that separates data management (Model), user interface (View), and application control logic (Controller).

**Push Notification** – an alert received from an application to notify when there is a new event or message to view.

**Reminder** – a scheduled alert generated by the application to prompt task completion.

**RESTful API** – an interface used to exchange information securely over the internet.

**Tiered Leveling System** – a progression structure where children advance through levels by earning experience points (XP), unlocking higher value rewards as they progress.

**Uvicorn** – a web server for Python, used to run FastAPI applications.

**Validation and Verification** – the process of submitting proof (such as photos or videos) of chore completion for caregiver review and approval.

## 1.4 References

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## **1.5 Overview**

The remainder of this document describes the QuestNest system in detail. Section 2 provides an overall product description, including core functions and user characteristics. Section 3 defines the specific system requirements, performance expectations, and design constraints. These sections present a comprehensive view of the system's objectives and implementation guidelines.

## **2 Overall Description**

This section provides an overview of QuestNest as a software product. It describes the system's purpose, key functions, and intended users.

### **2.1 Product Perspective**

QuestNest is a cross-platform mobile application designed for families. It functions by storing and updating data through Google Firestore, a cloud-based data storage service. The system enables families to manage household chores collaboratively and replaces traditional methods such as paper charts or to-do lists with an interactive, structured platform that tracks progress and rewards participation.

### **2.2 Product Functions**

QuestNest provides caregivers with tools to create, assign, and monitor tasks while giving children a clear view of their responsibilities. Chores are tracked by recording progress and completion, and Experience points (XP) are awarded once tasks are verified, allowing users to advance through levels and unlock customizable rewards. Collaborative family rewards promote cooperation and accountability by linking incentives to the combined efforts of all family members. A shared family calendar synchronizes schedules, reminders, and events, ensuring all members remain informed and engaged in maintaining household routines.

### **2.3 User Characteristics**

QuestNest is designed for family environments and supports two primary user roles: caregivers and children. Caregivers, such as parents or guardians, manage the overall system by creating accounts, assigning chores, approving task completion, defining rewards, and monitoring participation across the household. Children use QuestNest to view and complete assigned tasks, submit photos or video for verification, and track progress through XP and levels as they unlock rewards. These roles create a collaborative environment that fosters communication, shared responsibility, and positive behavioral reinforcement within the family.

### **2.4 Constraints**

N/A

### **2.5 Assumptions and Dependencies**

N/A