

Lab 2

Junsen Huang,

CS 411W

Professor T. Kennedy

29 October 2025

Sections 1 & 2

## Table of Contents

<b>Listing of Figures.....</b>	<b>1</b>
<b>Listing of Tables.....</b>	<b>1</b>
<b>1 Introduction.....</b>	<b>2</b>
<i>1.1 Purpose.....</i>	2
<i>1.2 Scope.....</i>	2
<i>1.3 Definitions, Acronyms, and Abbreviations.....</i>	2
<i>1.4 References.....</i>	3
<i>1.5 Overview.....</i>	3
<b>2 Overall Description.....</b>	<b>4</b>
<i>2.1 Product Perspective.....</i>	4
<i>2.2 Product Functions.....</i>	4
<i>2.3 User Characteristics.....</i>	5
<i>2.4 Constraints.....</i>	5
<i>2.5 Assumptions and Dependencies.....</i>	5

## Listing of Figures

No figure entries found.

## Listing of Tables

No table entries found.

## 1 Introduction

### 1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to define and describe the functional and nonfunctional requirements for the QuestNest application. The SRS provides a detailed reference for developers, testers, and stakeholders to ensure a mutual understanding of system functionality, design constraints, and objectives. It serves as a baseline for project planning, development, and validation.

### 1.2 Scope

QuestNest is a gamified mobile application designed to make household chore management engaging and structured. The goal of the project is to assist families—particularly caregivers and children—in building consistency, responsibility, and collaboration through a reward-based system. By turning daily chores into quests, QuestNest motivates children through experience points (XP), levels, and customizable rewards managed by caregivers. The system promotes healthy family communication, reduces household stress, and supports long-term positive habit formation.

### 1.3 Definitions, Acronyms, and Abbreviations

- Experience Points (XP): Points awarded as a progression indicator.
- Collaborative Family Reward: Custom chores or rewards unlocked when all family members complete their assigned tasks.

## Lab 2

- Push Notification: Alerts sent from the application to notify users of upcoming tasks, reminders, or updates.

### 1.4 References

Lam, C. B., Greene, K. M., & McHale, S. M. (2016). Housework Time from Middle Childhood through Adolescence: Links to Parental Work Hours and Youth Adjustment.

<https://pmc.ncbi.nlm.nih.gov/articles/PMC5125879/>

Rende, R. (2015). The developmental significance of chores: Then and now.

[https://www.researchgate.net/publication/269578645\\_The\\_developmental\\_significance\\_of\\_chores\\_Then\\_and\\_now](https://www.researchgate.net/publication/269578645_The_developmental_significance_of_chores_Then_and_now)

Society for the Psychology of Women. (2017). Research on Household Chores.

household-chores.

<https://www.apadivisions.org/division-35/news-events/news/household-chores>

Tepper, D. L., Howell, T. J., & Bennett, P. C. (2022). Executive functions and household chores: Does engagement in chores predict children's cognition?

<https://pmc.ncbi.nlm.nih.gov/articles/PMC9796572/>

Ruby-Lab 1-Version 1. CS 410, Old Dominion University, 2025.

[Ruby-Lab 1-Version 1.docx - Google Docs](#)

### 1.5 Overview

The remainder of this SRS is organized according to the IEEE 830-1998 standard.

Section 2 provides an overall description of the system, including its context, major features, and target users.

## 2 Overall Description

### 2.1 Product Perspective

QuestNest is a cross-platform mobile application built using Python 3.13.5 and designed under the Model-View-Controller (MVC) architecture. The system leverages Google Firestore for cloud data storage, FastAPI for backend communication, and Flet (a Python framework based on Flutter) for the user interface. The application connects caregivers and children within a shared digital environment, where caregivers can assign and validate chores while children complete quests and earn experience points (XP). QuestNest's primary focus is to foster accountability, communication, and motivation within families through gamified interactions.

### 2.2 Product Functions

- Gamified Chore Tracking: Converts chores into interactive quests, rewarding children with XP for completion.
- Tiered Leveling System: Tracks progress through levels that unlock higher-value rewards, encouraging long-term engagement.
- Collaborative Family Rewards: Allows families to set collective goals that require all members to participate in completing chores.
- Customization Tools: Enables caregivers to define, edit, and assign chores and rewards based on family needs.
- Validation and Verification: Requires children to submit proof (e.g., photos/videos) of completed chores for caregiver approval.

## Lab 2

- Shared Family Calendar and Notifications: Keeps family members informed of upcoming tasks and events through synchronized reminders.

### 2.3 User Characteristics

QuestNest serves two primary user groups:

- Caregivers/Parents: Adults responsible for creating, assigning, and approving chores and rewards. They manage the system's settings, monitor children's progress, and reinforce engagement through reward customization.
- Children/Dependents: Users who complete assigned chores, earn XP, and unlock rewards. The interface emphasizes simplicity and engagement to encourage positive habit development.

### 2.4 Constraints

N/A

### 2.5 Assumptions and Dependencies

N/A