

Lab 1 – QuestNest Description

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1 Introduction

Household chores are often unevenly shared, causing parent–child conflict and missed opportunities to build consistency and responsibility. Braun Research found that out of 1,001 U.S. adults, only 28% assigned chores to their children (Society for the Psychology of Women, 2017). Busy families need a structured, motivating system to track and verify tasks.

The solution comes in the form of QuestNest which is a gamified mobile app that turns chores into quests with experience points, levels, collaborative rewards, and caregiver validation. A functional prototype will demonstrate its engaging design, real-time data handling, and potential to improve family cooperation through positive reinforcement.

2 QuestNest Product Description

QuestNest is a cross-platform mobile app that turns household chores into engaging quests where kids earn experience points (XP), level up, and unlock real-world rewards. Caregivers can assign and customize chores, verify completion through photos or videos, and set XP values. The app features a shared family calendar, reminders, and a collaborative rewards system that encourages teamwork. By combining gamification with practical task management, QuestNest helps families build responsibility, improve communication, and reduce household stress. The app is built with simplicity in mind so kids can independently use it as shown in, Figure 1.

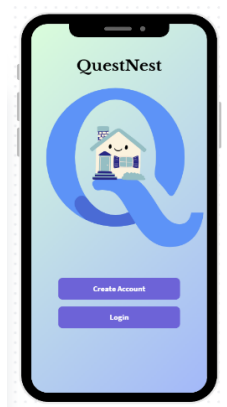


Figure 1: Login Screen

2.1 Key Product Features and Capabilities

QuestNest is a cross-platform mobile app that turns household chores into engaging quests where kids earn experience points (XP), level up, and unlock real-world rewards. One feature that sets QuestNest apart from the competition is the tiered leveling system that tracks progress through XP. This structure reinforces long-term engagement by linking progression with goal setting. Caregivers can assign and customize chores, verify completion through photos or videos, and set XP values. The app features a shared family calendar, reminders, and a collaborative rewards system that encourages teamwork to claim more enticing rewards.

2.2 Major Components (Hardware / Software)

QuestNest will be developed as a cross-platform mobile application using Python 3.13.5, adopting the Model-View-Controller (MVC) architectural pattern to ensure an organized codebase. The app will use Google Firestore for business logic and database interactions, via the Python Admin SDK. The user interface will be developed with Flet, a Python framework built on Flutter. The controller will be FastAPI, which will connect all the components. Last but not least, Uvicorn will serve as the web server for QuestNest. All the following components were chosen with careful consideration to ensure the best user experience.

3 Identification of Case Study

QuestNest is aiming to get rid of outdated and traditional chore charts that simply do not work anymore. QuestNest is designed to make chores fun and engaging while promoting consistency and accountability for kids growing up. The application is built to include every person in the family, from the parent or caregivers having to approve the chores to children who have to earn XP points to level up and claim rewards. QuestNest is different from the rest of the competitors in its class due to having collaborative rewards. This feature combines everyone's efforts in the family to earn a bigger and more enticing reward. This collaboration fosters mutual accountability and helps strengthen familial bonds. The purpose of QuestNest is to help families build responsibility, improve communication, and reduce household stress.

4 Glossary

Experience Points (XP) - points awarded as a progression indicator.

Collaborative Family Reward - collaborative custom chores awarded if all members of the family complete their assigned tasks.

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

5 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
- Society for the Psychology of Women. (2017). Research on Household Chores. [household-chores.](https://www.apadivisions.org/division-35/news-events/news/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/>