

**Team Ruby**

“QuestNest- Gamifying Chores to beat unproductivity”

Professor Kennedy

CS 410 - Professional Workplace Development I

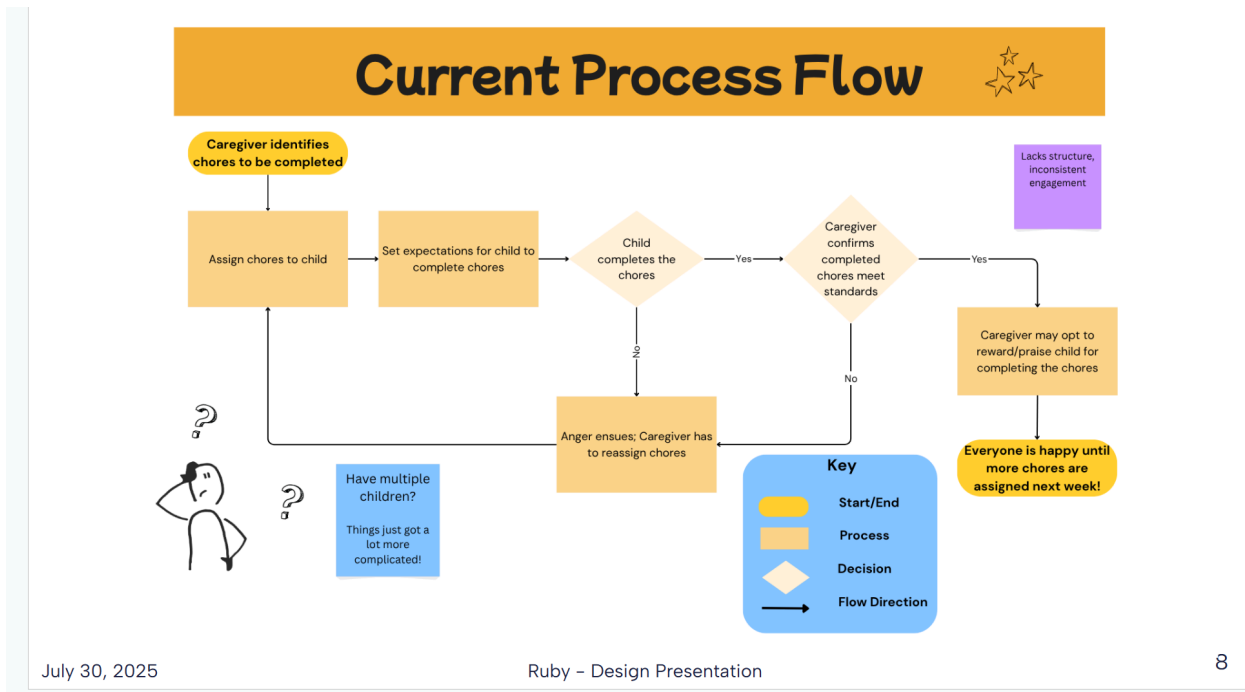
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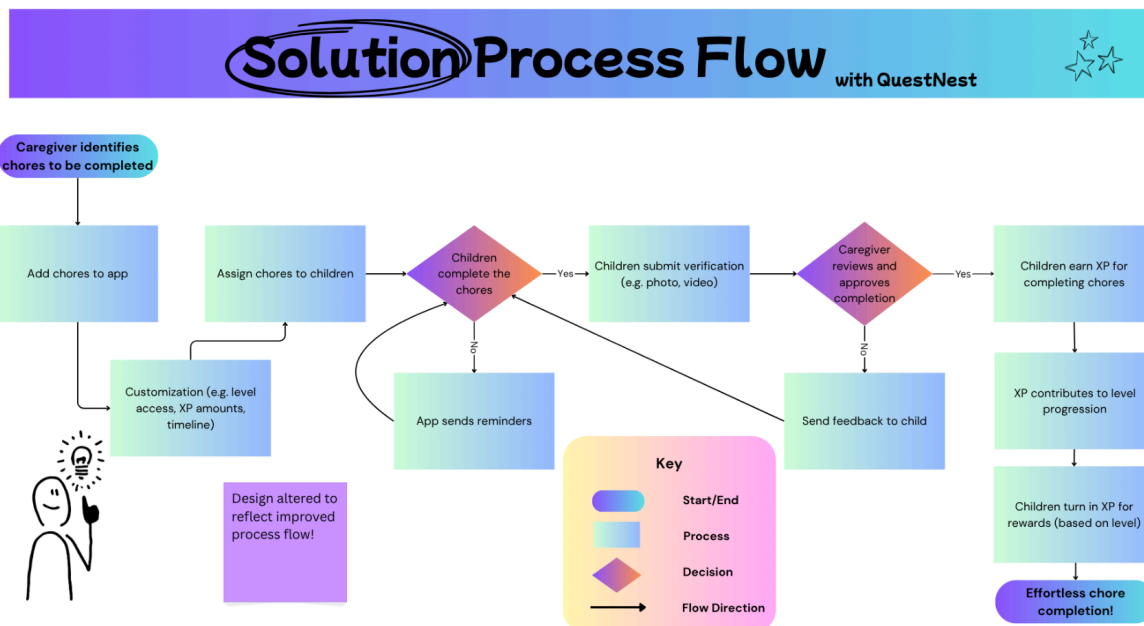
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Current Process Flow (taken from Team Ruby Design Presentation)



Solution Process Flow (taken from Team Ruby Design Presentation)



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Competition Matrix (taken from Team Ruby Design Presentation)

Competition Matrix					
FEATURES	QUESTNEST	OURHOME	COZI	NEATKID	HOMIEY
Gamified XP	✓	✗	✗	✓	✗
Child-Centric UI	✓	✓	✗	✓	✗
Tiered Leveling System	✓	✗	✗	✗	✗
Collaborative Family Rewards	✓	✗	✗	✗	✗
Customization	✓	✓	✓	✓	✓
Validation/Verification	✓	✓	✗	✓	✓
Cross Platform (ios/Android)	✓	✓	✓	✓	✓
Shared Calendar	✓	✓	✓	✗	✗
Paywall			✓	✓	✓
Track and Manage Chores	✓	✓	✓	✓	✓
Special Features	Collaborative family rewards	Shopping lists	Shopping lists and recipes		Chore completion linked to cash allowances; family chat

Minimalistic UI with some animations

Goal setting system to unlock certain rewards

TOC of Design Presentation

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## 1. Introduction

Across households, a common challenge faced by parents is motivating children to consistently complete chores, while also encouraging responsibility and collaboration within the family unit. Research has shown that children who regularly participate in household chores develop stronger executive function skills, better time management, and higher self-efficacy (Tepper et al., 2022). However, traditional methods of chore assignment—such as verbal reminders or paper checklists—often fail to engage children, especially in today’s digital-first environment.

The problem lies in the lack of a structured, engaging, and trackable way to assign chores, monitor their completion, and provide meaningful incentives. Families need a solution that not only assigns and verifies chores but also integrates motivation through gamification and collaborative goals.

**QuestNest** is designed to meet this need by combining gamification with household management. The app allows parents to assign chores, children to complete them and submit photographic evidence, and parents to approve tasks for points (XP) toward rewards. The solution will be demonstrated through prototyping to showcase how it addresses chore management inefficiencies, improves engagement, and fosters teamwork in the household.

## 2. QuestNest Product Description

QuestNest is a mobile application designed to streamline household chore management through gamification. It enables parents to create and assign chores, track completion through photographic verification, and reward children with experience points (XP) and customizable family rewards. By integrating features like push notifications, collaborative family goals, and a progression system, QuestNest turns daily chores into engaging “quests” that promote responsibility and teamwork.

The primary objectives of QuestNest are to:

- Increase children’s motivation to complete chores.
- Provide parents with an easy-to-use platform to assign, monitor, and reward household tasks.
- Foster collaboration among family members through shared rewards and group challenges.

### 2.1 Key Product Features and Capabilities

- **Chore Assignment and Tracking** – Parents can create chores, set deadlines, and assign them to specific children.
- **Photographic Verification** – Children submit a picture as proof of chore completion.
- **Approval System** – Parents approve or reject completed chores based on submitted evidence.
- **Experience Points (XP)** – Awarded for each approved chore, allowing children to progress toward rewards.
- **Collaborative Family Rewards** – Group incentives that unlock when all family members complete their assigned chores.
- **Push Notifications** – Alerts to remind users of pending chores, approvals, or unlocked rewards.

These capabilities make QuestNest unique by combining real-time task verification with gamified progress tracking, resulting in higher engagement and more consistent chore completion.

## 2.2 Major Components (Hardware/Software)

### Hardware:

- Smartphones or tablets with camera capability (for photographic proof submission).
- Internet connectivity for real-time updates and cloud storage.

### Software:

- **Mobile Application (Front-End):** Developed for iOS and Android, featuring a user-friendly interface for chore assignment, completion, and approval.
- **Backend Server:** Manages user accounts, stores chore data, processes image submissions, and maintains reward progress.
- **Notification Service:** Sends real-time push notifications to users.

- **Database:** Stores chore details, images, XP points, reward configurations, and user profiles.

### **3. Identification of Case Study**

QuestNest is developed for families seeking to improve chore completion rates and foster responsibility among children. The initial target audience includes parents with children ages 6–17, with features adaptable for various household structures. Potential future users include educators, after-school program coordinators, and childcare facilities that could leverage the platform for group task management.

## **Glossary**

**Experience Points (XP).** Points awarded as a progression indicator.

**Collaborative Family Reward.** Collaborative custom rewards 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.



## References

Federal Trade Commission. (2000). *Children's Online Privacy Protection Rule ("COPPA")*.  
<https://www.ftc.gov/legal-library/browse/rules/childrens-online-privacy-protection-rule-coppa>

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*.  
<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/>