

# QuestNest

## Feasibility Presentation

Complete Tasks. Level Up. Earn Rewards.

Teach responsibility with a system kids love and you control



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# Meet the Team



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# Problem Statement

Parents struggle to assign and follow up on chores effectively, especially in busy families. Traditional chore charts often fail to provide the necessary structure or engagement to promote consistency and accountability.



## What is Needed?

Families need a positive and structured system to balance responsibilities and build better habits in an engaging way.

# Problem Characteristics

Chores usually fall on one parent or caregiver, often leading to parent-child conflict when children resist taking on tasks or when there is no shared agreement on how chores should be distributed (Lam, 2016).

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).

## Benefits of Household Chores

Research by Rende (2015) displays an increase of school engagement, positive mental health in adulthood, and family cohesion when children are assigned chores.

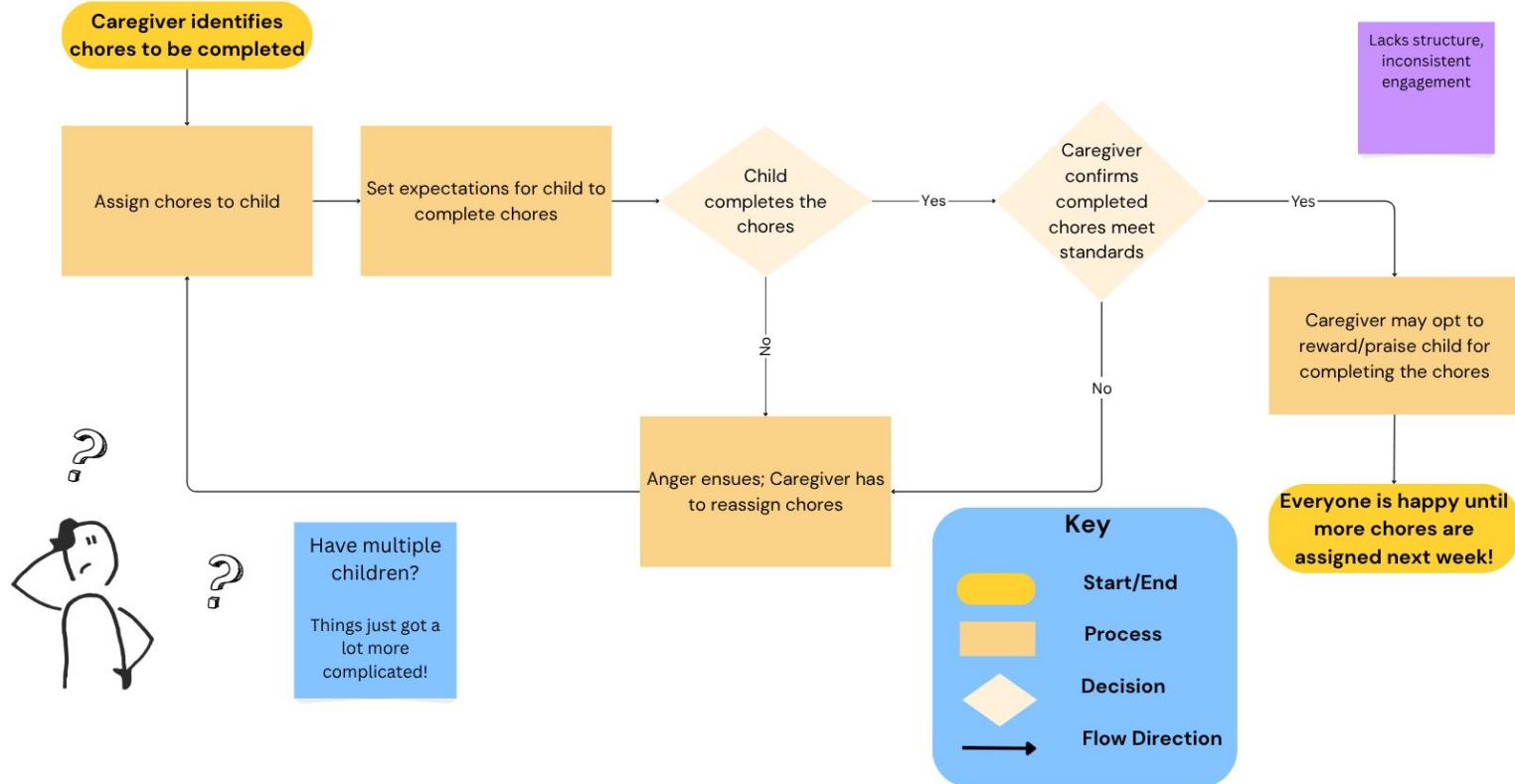


# Elevator Pitch

**QuestNest** is a mobile app that turns household chores into a fun, rewarding system for kids, and a stress reliever for caregivers. Designed for families with children of all ages, the app uses a progression system powered by experience points (XP): kids complete chores assigned by their guardians, earn XP, and level up to unlock custom rewards like game currency, special outings, or screen time.

**QuestNest** helps children build responsibility and feel accomplished, while giving parents a much-needed break and peace of mind.

# Current Process Flow



# Solution Statement

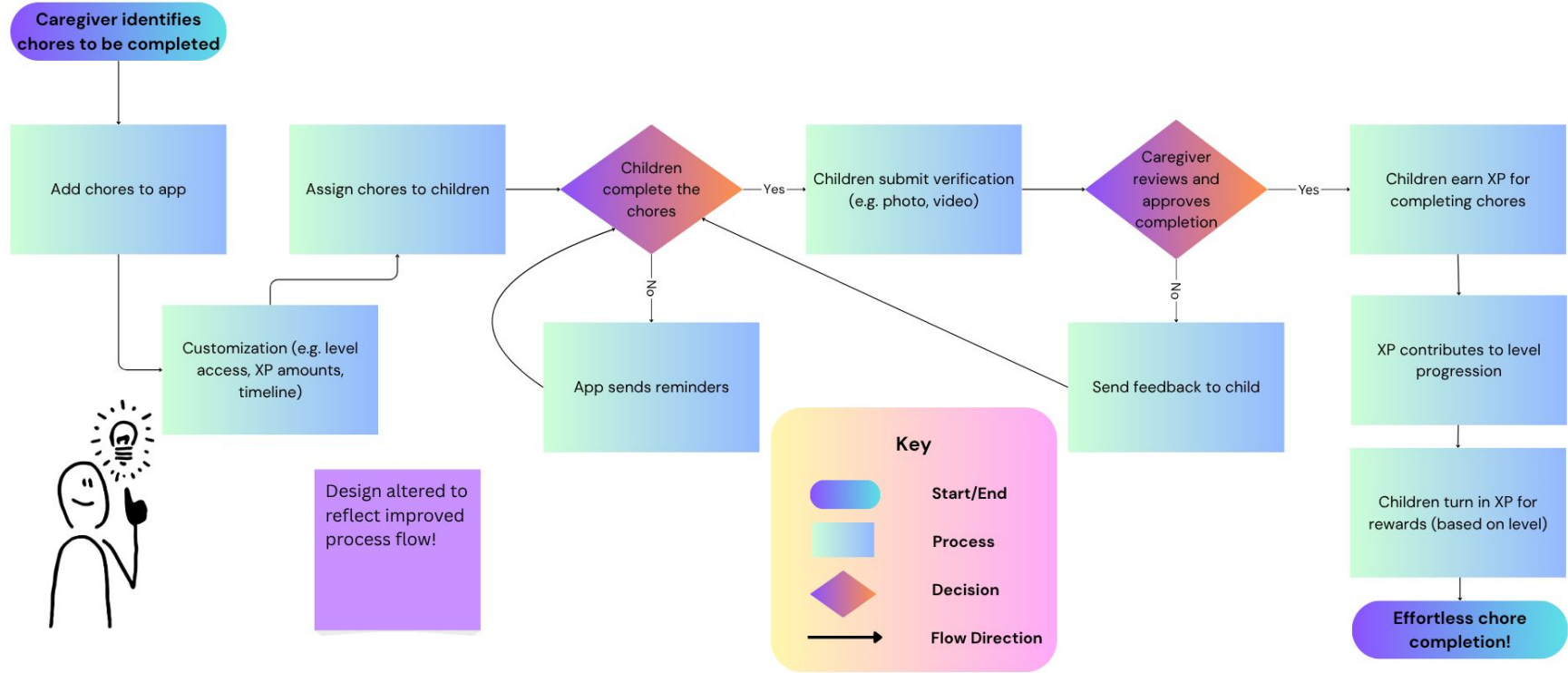
**QuestNest is a gamified mobile application that makes chore tracking engaging and fun through a reward management system. The goal is to transform routine household chores into a rewarding quest, teaching responsibility and healthy habits through positive reinforcement.**





# Solution Process Flow

with QuestNest



# Features and Functionality

(What it will do)



- **Track and manage household chores using a gamified XP and leveling system.**
- **Allow caregivers to assign tasks to multiple children at a time, verify completion (via photos/videos), and approve reward redemptions.**
- **Provide custom rewards, reminders, a shared family calendar, and encourage positive habits through structured incentives.**

# Features and Functionality

(What it will not do)



- **Caregivers must manually assign tasks to each family member. The system does not provide automatic chore suggestions or equitable task distribution.**
- **Chore verification relies on photo or video submissions reviewed by caregivers. The app does not use automated validation to confirm chore completion.**
- **The application tracks rewards like extra screen time but cannot enforce device locks or manage screen time at the system level.**

# Competition Matrix

FEATURES	QUESTNEST	OURHOME	COZI	NEATKID	HOMEY
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

# Development Tools and Software

- **IDE** - Visual Studio Code
- **Version Control** - GitHub
- **CI and CD** - GitHub Actions & Workflows
- **Firestore SDK** - Python Admin SDK
- **Automated Testing** - pytest
- **Documentation** - Swagger UI & pydoc

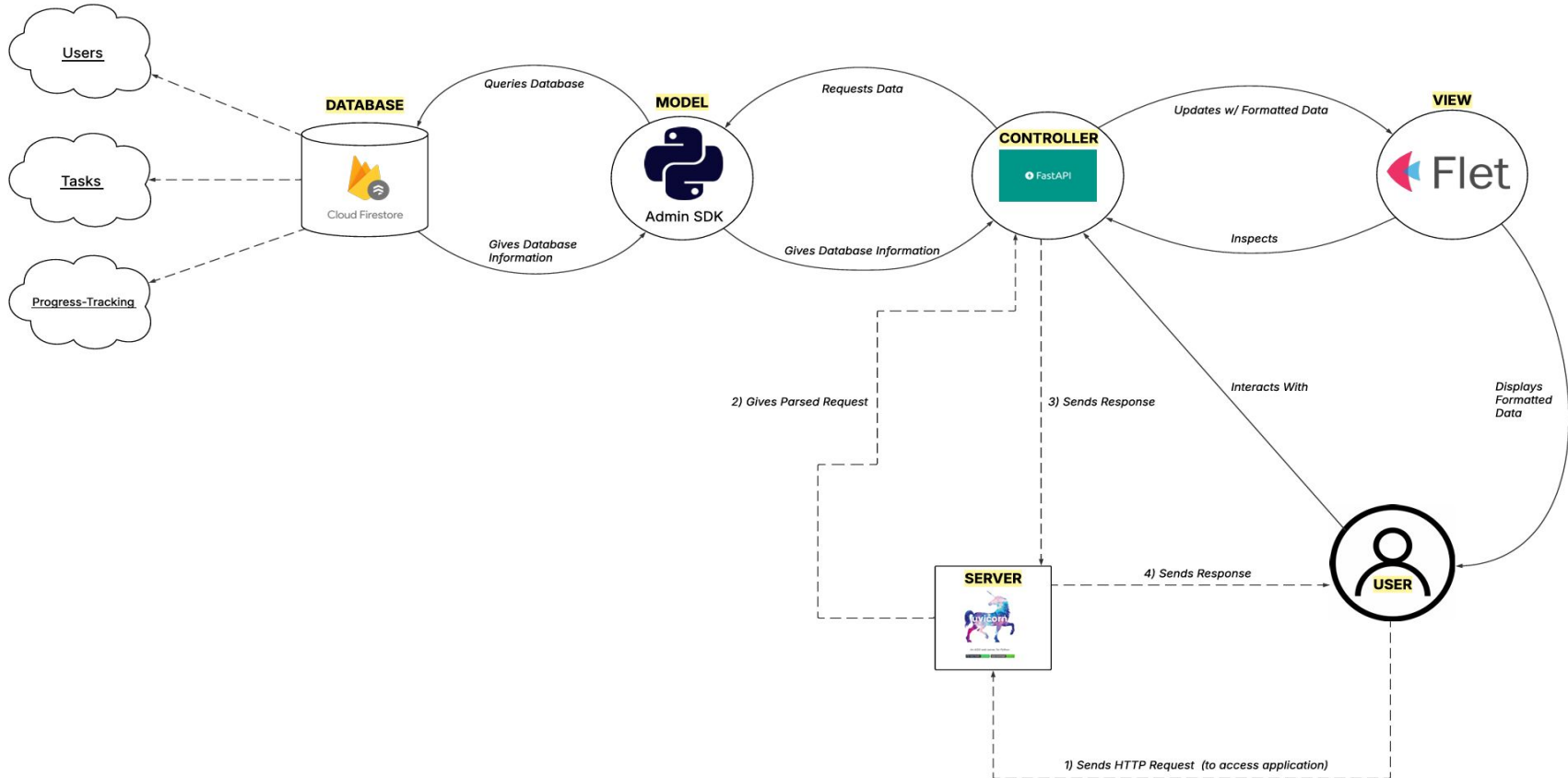


# Major Functional Components

- Operating System - Docker
- Web Server - Uvicorn
- Database - Firebase's Firestore
- Script-Interpreter - Python 3.13.5
- Front-End Framework - flet
- Back-End Framework - FastAPI



# Major Functional Components Diagram



# Legal Risks

Severity		Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)	Risk #	Description & Mitigation
Likelihood	Very High (5)						L1	<b>Risk:</b> Non-compliance with COPPA (Children's Online Privacy Protection Act) <b>Description:</b> The app collects data from users under 18, it could violate child privacy laws.
	High (4)				L1			
	Medium (3)							<b>Mitigation:</b> <ul style="list-style-type: none"> <li>Implement verifiable parental consent mechanisms</li> <li>Clearly disclose data usage policies</li> <li>Allow parents to access and delete children's data</li> <li>Maintain logs of consent</li> </ul>
	Low (2)	L1						
	Very Low (1)							

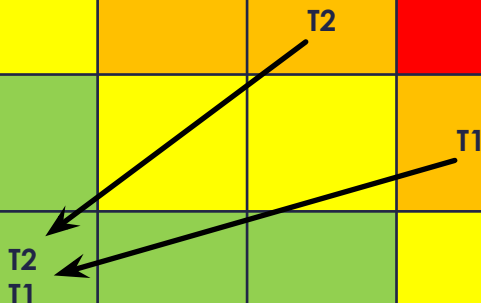


# Customer and End User Risks

Severity		Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)	Risk #	Description & Mitigation
Likelihood	Very High (5)			C1			C1	<b>Risk:</b> Kids find the app “boring” <b>Description:</b> Children may find the app too complex to use or disengaging.
	High (4)				C2			<b>Mitigation:</b> <ul style="list-style-type: none"> <li>Add engaging animations and sounds</li> <li>Send reminders that rewards are available</li> </ul>
	Medium (3)						C2	<b>Risk:</b> Kids try to falsify chore completion <b>Description:</b> Children may try to upload previous photos, or just rush through the chores and do them incorrectly.
	Low (2)	C1	C2					<b>Mitigation:</b> <ul style="list-style-type: none"> <li>Require parent for reward approval</li> <li>Require pictures of completed chore</li> <li>Gamify honesty with a streak offering more XP points or an extra reward</li> </ul>
	Very Low (1)							

# Technical Risks

Severity		Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)	Risk #	Description & Mitigation
Likelihood	Very High (5)						T1	<b>Risk:</b> Data loss due to app crash <b>Description:</b> App crash during chore submission could cause lack of XP or lack of submission.
	High (4)							<b>Mitigation:</b> <ul style="list-style-type: none"> <li>Use offline-first architecture with sync queue; auto-backup every 60 seconds</li> <li>Retry queue after failed syncs or offline connection</li> <li>Backend change log for action verification</li> </ul>
	Medium (3)							
	Low (2)						T2	<b>Risk:</b> Image/video storage overload <b>Description:</b> As users upload photo or video evidence for completed chores, storage usage may exceed capacity or cause lag, especially if files are large or numerous.
	Very Low (1)							<b>Mitigation:</b> <ul style="list-style-type: none"> <li>Use compression before upload</li> <li>Set file size limits</li> <li>Auto-delete older media after reward approval (with user notice)</li> </ul>



# Security Risks

Severity		Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)	Risk #	Description & Mitigation
Likelihood	Very High (5)						S1	<b>Risk:</b> Unauthorized Access to Accounts <b>Description:</b> Weak passwords, lack of multi-factor authentication (MFA), or shared devices could allow unauthorized individuals (e.g., siblings, others) to access a child or parent account.
	High (4)				S1	S2		<b>Mitigation:</b> <ul style="list-style-type: none"> <li>Enforce strong password requirements</li> <li>Optional Multi-Factor Authentication (MFA) for parent accounts</li> <li>Session timeout for inactive users</li> </ul>
	Medium (3)							
	Low (2)		S1 S2				S2	<b>Risk:</b> Exposure of Personal Data <b>Description:</b> Data breaches or insecure data storage could expose sensitive user information, including children's names, progress, or photos.
	Very Low (1)							<b>Mitigation:</b> <ul style="list-style-type: none"> <li>End-to-End encryption for personal data in transit and at rest</li> <li>Strict access control for stored media</li> <li>Regular security audits and vulnerability scans</li> </ul>

# Conclusion

Busy families need more than outdated chore charts. They need structure, motivation, and accountability.

QuestNest is a gamified mobile app that makes chores engaging, rewarding, and habit-building.

It empowers children to take responsibility, and gives parents the support they've been missing.



# References

Federal Trade Commission. (2000). *Children's Online Privacy Protection Rule ("COPPA")*.

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# Appendix



# Real World Product vs. Prototype Table

Features	Real World Product (RWP)	Prototype	Explanation
Child- Centric UI	YES	YES	UI tailored for children from the start.
Verification (e.g., photo/video proof)	YES	YES	Prototype allows image/video submission for proof.
Cross Platform (iOS/Android)	YES	YES	Prototype targets both platforms using Python/flet.



# Real World Product vs. Prototype Table

<b>Gamified XP</b>	<b>YES</b>	<b>YES</b>	<b>Core feature of the system; contributes to habit-building.</b>
<b>Paywall</b>	<b>NO</b>	<b>NO</b>	<b>Prototype will not include paywall.</b>
<b>Shared Calendar</b>	<b>YES</b>	<b>NO</b>	<b>Not included in prototype due to complexity.</b>