Project Overview

Title: Smart Pill Dispenser for Medication Management

Project Purpose and Scope:
The Smart Pill Dispenser aims to simplify and improve medication adherence for seniors and adults requiring managed medication schedules. This device is designed to address common challenges such as forgetting doses, improper medication handling, and refill monitoring. Equipped with an embedded UI for local configuration and cloud connectivity for remote monitoring, it provides a user-friendly and reliable solution. The device physically dispenses medication at scheduled times into a monitored receptacle, confirming medication retrieval. Additional features include refill reminders and optional automatic pharmacy notifications. This project targets a one-year delivery timeline, balancing limited resources with a focus on usability and functionality.

Requirements:
Embedded and Cloud-Based Connectivity: The device must support both local UI control and remote access via a secure cloud application.
Medication Dispensing and Monitoring: Scheduled medication dispensing into a monitored receptacle with confirmation of retrieval.
Refill Alerts and Notifications: Automatic reminders for low medication counts, with optional notifications to authorized pharmacies.

Design Principles:
Simplicity: Design an intuitive UI to accommodate the primary target users, particularly seniors, ensuring ease of use.
Reliability: Ensure accurate medication dispensing and monitoring to build user trust and safety.
Security: Protect user data and device functionality with robust authentication and encryption for all cloud communications.

Team Members:
Project Technical Lead (you): UX design, project management, and development work.
Product Manager/Owner: Market research, feature prioritization, and stakeholder communication.
Hardware Developer: Hardware design, integration, and testing.
Firmware Developer: Embedded software development, debugging, and optimization.

Schedule:
Months 1-3: Initial planning, stakeholder interviews, and contextual research.
Months 4-6: Early design prototypes and usability testing.
Months 7-9: Functional prototypes and iteration.
Months 10-12: Final production prototype validation, regulatory approvals, and market launch preparation.

WBS for UX Tasks

Phase 1: **Analyze/Plan**

Deliverables:
Stakeholder Interviews (M)
Project Overview (S)
Work Breakdown Structure (M)

Effort Estimate:
Low = 2 + 0.5 + 2 = 4.5 days
High = 3 + 1 + 3 = 7 days
Average = (4.5 + 7) / 2 = 5.75 days

Phase 2: Research

Deliverables:
Contextual Interviews (L)
Personas (M)
Use Cases (M)

Effort Estimate:
Low = 4 + 2 + 2 = 8 days
High = 5 + 3 + 3 = 11 days
Average = (8 + 11) / 2 = 9.5 days

Phase 3: Design

Deliverables:
Wireframes/Task Flows (M)
Parallel Designs (L)
Looks-like Models (XL)

Effort Estimate:
Low = 2 + 4 + 6 = 12 days
High = 3 + 5 + 10 = 18 days
Average = (12 + 18) / 2 = 15 days

Phase 4: Verify/Validate

Deliverables:
Hallway Tests (M)
Heuristic Analysis (L)
Surveys (S)

<u>Effort Estimate:</u>
Low = 2 + 4 + 0.5 = 6.5 days
High = 3 + 5 + 1 = 9 days
Average = (6.5 + 9) / 2 = 7.75 days

<u>Total Effort Estimate (T shirt sizing arbitrarily assigned to each deliverable):</u>
Low: 4.5 + 8 + 12 + 6.5 = 31 days
High: 7 + 11 + 18 + 9 = 45 days
Average: (31 + 45) / 2 = 38 days

WBS in Tree Graph Format

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│   Phase 1     │ │  Phase 2    │ │   Phase 3    │ │    Phase 4      │
│ Analyze/Plan  │ │  Research   │ │   Design     │ │ Verify/Validate │
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Phase 1 Deliverables	Phase 2 Deliverables	Phase 3 Deliverables	Phase 4 Deliverables
Stakeholder Interviews	Contextual Interviews	Wireframe/Task Flows	Hallway Tests
Project Overview	Personas	Parallel Designs	Heuristic Analysis
Work Breakdown	Use Cases	Looks Like Model	Surveys