SmartAid Mobile App - Product Requirements Document (PRD)

1. Project Overview

SmartAid is a mobile healthcare application designed to help elderly users and caregivers accurately track medication intake. Using ReactNative, SmartAid enables users to scan pills, identify them through a lightweight AI model or mock dataset, confirm whether the pill matches the scheduled medication, and notify caregivers if a dose is missed. The goal is to provide a simple, senior-friendly interface that promotes medication adherence and caregiver awareness.

2. Key Features

2.1 Pill Identification

- Users can scan pills with the device camera.

- App identifies pill type from a mock dataset of 5–10 pill variations.

- Shows confidence level and pill name.

2.2 Medication Schedule

- Displays a daily list of scheduled medications with images/icons.

- Simple status markers: “Taken”, “Missed”, or “Pending”.

2.3 Logging & History

- Each intake event is logged.

- Users and caregivers can view a history of medication adherence.

2.4 Caregiver Notifications (WORRY ABOUT THIS FUNCTION LATER AFTER THE APP IS BUILT)

- Sends alerts via SMS (Twilio or simulated).

- Triggered when a dose is missed or manually simulated.

2.5 Elderly-Friendly UI/UX

- Large fonts, high contrast colors, minimal text.

- Clear navigation and big action buttons.

3. Technical Requirements

3.1 Frontend (Flutter)

- Framework: React Native

- Platforms: Android & iOS

- Camera plugin: `camera` or `image_picker`

- State management: Provider, Riverpod, or Bloc (team choice)

- Responsive UI for tablets and phones

3.2 AI/Backend

- AI Model: YOLOv8, TensorFlow Lite model, or static mapping for prototype

- Endpoint option (if backend used):

  - POST `/predict`

  - POST `/log`

  - GET `/schedule`

- Optional: Firebase Firestore for logs, reminders, and user data

3.3 Notifications

- Twilio SMS API or simulated alerts

- Triggered by pill mismatch or missed medication

3.4 Database (Optional)

- Firebase Firestore or Node.js + MongoDB/PostgreSQL

4. Aesthetic & Style Direction

- **Primary Goal:** Accessibility for elderly users

- Color Palette: High contrast (e.g., white background, dark blue primary, bold icons)

- Typography: Large, legible fonts (18–24pt minimum)

- Buttons: Rounded edges, highly visible, large tap zones

- Iconography: Simple icons (checkmark ✓, X ✕, bell 🔔)

- Navigation: Bottom navigation or big-block home screen layout

- Overall feel: Clean, calm, trustworthy