Advanced iOS Development

Name: Janhavi Jagtap

Student ID: 25204785

MedTrack iOS Application Documentation

MedTrack is a modern iOS application that empowers users to manage their medications, track symptoms, view upcoming appointments, search for drug information, and locate nearby pharmacies. Designed with SwiftUI and Core Data, MedTrack promotes medication adherence and provides health-related insights—all while keeping user experience easy and data secure.

To Run the App:

Prerequisites:

- Xcode 15 or newer on macOS
- iOS Simulator or an iPhone running iOS 16+
- Package Dependency: Alamofire- https://github.com/Alamofire/Alamofire.git

Steps:

1. Open the Project:
   - Launch Xcode.
   - Open the MedTrack .xcodeproj/.xcworkspace file.
2. Build & Configure:
   - Ensure Core Data and required capabilities (e.g. location, notifications) are enabled under Signing & Capabilities.
3. Run:
   - Build and run the project using the play button.
   - Grant location and notification permissions on first launch when prompted for best experience.
4. Using the App:
   - Track medications in the Medications tab.
   - Log symptoms and notes under Symptoms.
   - Review, add, and mark appointments.
   - Search for drug info and interactions.
   - Find nearby pharmacies via the map interface.

Feature Overview

Dashboard & Navigation

- Tab-based UI: Home, Medications, Symptoms, Appointments, Pharmacies for easy access.
- Dashboard: See summary cards for active medications, upcoming appointments, and quick action shortcuts.

Medications

- List, Add, Edit, and Delete medications.
- Dosage, frequency, reminders: Set with steppers, pickers, and toggles for easy data entry.
- Pill count management: Reduce pills with 'Take Medication' action.
- Scheduling & reminders: Enable notifications for daily adherence.

Symptoms

- Log and visualize symptom history: Severity slider, notes, date management, colorful indicators.
- Symptom management: Add, edit, and delete entries for longitudinal health tracking.

Appointments

- View upcoming appointments: Detail with date, doctor info, easy editing.
- Quick add from dashboard: New appointments in a couple taps.

Drug Information & Interactions

- Drug search: Fetch brand/generic info, dosage, usage, warnings, and manufacturer.
- Interactions check: Use API/network services to find and display potential drug interactions for current medications.

Pharmacies Map

- MapKit and CoreLocation: Interactive map showing nearby pharmacies as custom pins.

- Details and directions: Tap pin for info card; launch directions in Apple Maps.
- Loading and error states: User-friendly messages for search errors or no results.

Error Handling & Reporting

- All Core Data writes, network requests, and location fetches are wrapped in robust error handling using Swift's Result and do/catch patterns.
- User receives clear, actionable feedback for all errors, including transient issues (network, location, notifications).
- Network/Drug API errors: Failures are caught, and user is shown a banner or message like "Unable to load drug information. Please try again."
- No internet errors: "No Internet Connection. Please check your network."
- Core Data (Saving/Deleting): Failed saves trigger a brief alert or banner. App attempts rollback for data consistency. Delete operations confirm success before updating UI.
- MapKit/Location: Location errors (denied permission, unavailable) are detected and displayed as "Cannot access your location." Map shows fallback UI if no pharmacies are found nearby.
- Notifications: Denied notification permission prompts a persistent warning and guides the user to settings.
- Drug Interactions API: On interaction check error, displays: "Unable to check interactions. Please try again." Lists fallback info if API service is unavailable.

MedTrack is a comprehensive health companion, balancing powerful features with privacy and simplicity.