■ Product Requirements Document (PRD)

Product Name: Gym Alarm App — Location Verification Module

■ Background

The Gym Alarm App currently ensures users wake up at their designated gym time by playing alarms and confirming via a "wake-up" prompt. However, some users may acknowledge waking up but still fail to go to the gym. This module ensures accountability by verifying the user's physical movement away from their "home" location within a specific time window (15 minutes after wake-up confirmation).

■ Objective

To verify whether the user actually left for the gym after confirming they're awake, by performing a location check 15 minutes later. If the user does not move from their home location or refuses to share location, the app should repeat the alarm and verification process.

■ Core Logic Flow

1. **User Confirms "I'm Awake"**

- Marks user as awake and schedules 15-minute location check.

2. **Location Check After 15 Minutes**

- Requests location permission, fetches coordinates, compares with home location.

3. **Decision Logic**

Condition	Action
User refused location permission	Re-trigger alarm sequence
Location same as home (within 200m)	Trigger alarm again + reset location check timer
Location different (outside radius)	Display success message
Location fetch failed	Retry up to 3 times before triggering alarm again

■ User Experience Flow

Step 1: User wakes up → taps "Yes" on wake-up prompt → App confirms 'Awesome! I'll check if you're up in 15 mins.'

Step 2: After 15 mins → background process runs location check → responds accordingly.

Step 3: App logs daily result (timestamp, wakeUpConfirmed, locationVerified).

■ Technical Implementation Details

Component	Description
Location Module	Uses expo-location to fetch and compare user coordinates.

Background Service	Uses react-native-background-fetch to run checks while app is closed.
Data Store	AsyncStorage (for prototype), SQLite (for production).
Notification Trigger	Reuses existing local notification system to re-trigger alarms.

■ Permissions & Privacy

- Request location permission explicitly with clear context. - Only one-time checks per wake-up (no continuous tracking). - All data stored locally (no cloud storage).

■ Testing Checklist

■ Functional Tests: - Alarm triggers and wake-up confirmation works. - 15-minute timer fires in background. - Location comparison and alarm re-trigger work correctly. - Handles background and permission edge cases.

■ Success Criteria

- System accurately detects if the user left home. - Alarm repeats until gym departure confirmed. - Works reliably with app in background or locked.

■ Implementation Timeline (2 Weeks)

Week	Tasks
Week 1	Build location module, integrate background job, test wake-up link.
Week 2	Add alarm repetition logic, permission handling, success/failure flow.