

Product Design Requirements (PDR)

1. Overview

App Name: Medit8

Platform: Expo-based application targeting web, iOS, and Android

Core Value Proposition:

- Provide guided meditation sessions tailored to user preferences.
 - Allow users to generate bespoke meditation scripts via AI prompts.
 - Offer a seamless, engaging experience with high-quality narration and background ambience.
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2. Functional Requirements

2.1 User Registration & Authentication

- **User Signup/Login:**
 - Email and password registration.
 - Social sign-in options (Google, Apple).
 - Integration with Firebase or superbase Authentication.
- **Session Security:**
 - Use Expo SecureStore for storing tokens.
 - Two-factor authentication (optional for added security).

2.2 User Profile & Preferences

- **Profile Management:**
 - Update personal details (name, profile picture, etc.).
 - View meditation history and session analytics.
- **Preferences Settings:**
 - Set default meditation duration, preferred voice type, and background sound.
 - Notification settings for daily reminders.
- **Data Storage:**

- Store user data and preferences in Firestore or a similar scalable backend.

2.3 AI-Based Bespoke Meditation Generation

- **Prompt Input:**
 - A dedicated screen or modal where users enter a meditation prompt (e.g., “I need a 10-minute meditation for stress relief”).
- **AI Integration:**
 - Use OpenAI GPT-4 (or an equivalent AI) to generate a personalized meditation script.
 - Allow customization options (tone, pacing, style).
- **Preview & Edit:**
 - Provide a preview of the generated script.
 - Option for users to tweak the script before narration.

2.4 Text-to-Speech (TTS) Narration

- **Audio Generation:**
 - Convert the AI-generated script into spoken audio.
 - Support multiple TTS APIs (e.g., ElevenLabs, Google TTS) with realistic voice options.
- **Voice Customization:**
 - Enable users to select voice type, accent, gender, and speed.
- **Caching:**
 - Cache generated audio files locally using Expo FileSystem to reduce repeated API calls.

2.5 Meditation Session Playback

- **Audio Player:**
 - Integrated player with play, pause, rewind, and forward controls.
 - Volume control and playback speed adjustments.
- **Background Music & Ambience:**
 - Option to overlay calming background sounds (nature sounds, white noise, etc.).

- Seamless integration using Expo AV to handle multiple audio streams.

2.6 Content Library & Pre-Built Meditations

- **Pre-Generated Meditations:**
 - A library of curated meditation sessions categorized by themes (sleep, focus, relaxation, etc.).
- **Favorites & Downloads:**
 - Allow users to mark sessions as favorites.
 - Option to download meditations for offline listening.
- **Recommendation Engine:**
 - Personalize content based on user history and preferences.

2.7 Analytics & Progress Tracking

- **Session Tracking:**
 - Log meditation session details (duration, type, date/time).
- **User Dashboard:**
 - Visualize progress with charts, streaks, and achievement badges.
 - Integration with third-party analytics (Firebase Analytics, Recharts for visualization).

2.8 Community & Social Features

- **Sharing & Social Integration:**
 - Share meditation sessions on social media.
 - User reviews and ratings for each meditation.
- **Community Engagement:**
 - In-app forums or chat groups for users to discuss experiences.
 - Social challenges to encourage regular practice.

2.9 Notifications & Reminders

- **Push Notifications:**
 - Customizable daily reminders to encourage consistent practice.
 - Motivational quotes and session completion alerts.
- **Local Notifications:**

- Integration using Expo Notifications for both mobile and web.

2.10 Monetization & Subscription Management

- **Subscription Tiers:**
 - Free tier with limited AI-generated meditation sessions.
 - Premium subscription offering unlimited access, exclusive voices, and advanced customization.
 - **Payment Integration:**
 - Use Stripe or similar for in-app purchases and recurring subscriptions.
 - **Feature Gating:**
 - Enforce limits on free-tier users via backend rules (e.g., Firestore rules).
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3. Non-Functional Requirements

3.1 Performance

- **Fast Load Times:**
 - Optimize for quick navigation and responsiveness.
- **Smooth Audio Playback:**
 - Ensure audio streams do not lag or stutter across platforms.

3.2 Security

- **Data Protection:**
 - Encrypt sensitive data both in transit and at rest.
- **API Security:**
 - Secure endpoints and employ rate limiting, especially on AI and TTS APIs.

3.3 Scalability

- **Backend Infrastructure:**
 - Use Firebase/Firestore for scalable data storage.
 - Utilize Firebase Functions for serverless processing of AI requests.
- **Deployment:**
 - Deploy the mobile app via Expo EAS and the web version on platforms like Vercel.

- **Load Balancing:**

- Plan for increasing user base with auto-scaling backends and caching strategies.

3.4 Usability & Accessibility

- **Intuitive UI/UX:**

- Follow best practices in mobile and web design for a user-friendly experience.

- **Accessibility:**

- Implement voice commands, adjustable font sizes, and color contrast options.

3.5 Maintainability

- **Modular Codebase:**

- Use a clean, well-documented code structure.

- **Testing:**

- Implement unit, integration, and end-to-end tests.

- **CI/CD Integration:**

- Set up continuous integration and deployment pipelines for frequent, reliable updates.

4. Deployment & Future Enhancements

4.1 Deployment Strategy

- **Mobile Deployment:**

- Use Expo EAS for streamlined iOS and Android builds.

- **Web Deployment:**

- Host on Vercel or a similar scalable web platform.

- **Monitoring:**

- Use tools like Firebase Analytics and Sentry for performance and error monitoring.

4.2 Future Enhancements

- **Multi-Language Support:**
 - Expand to support multiple languages for global reach.
- **Wearable Integrations:**
 - Connect with health apps like Apple Health and Google Fit.
- **Enhanced Personalization:**
 - Leverage machine learning to offer even more personalized meditation experiences.
- **Expanded Community Features:**
 - Incorporate live meditation sessions and expert-led workshops.