Phase 1: Project Plan for AURA.ai - Minimum Viable Product (MVP)

1. Introduction

This document outlines the scope and deliverables for Phase 1 of the AURA.ai project, which focuses on developing the core functionalities of the platform. The primary goal of this phase is to deliver a Minimum Viable Product (MVP) that provides a fully functional, AI-driven mental wellness chatbot, a curated resource library, and essential crisis management and offline capabilities.

2. Phase 1 Scope & Core Features

2.1. User Interface (Frontend)

The frontend will be fully developed to support the core features, with a high-fidelity and intuitive user experience.

- **Chatbot Interface:** A clean, modern chat interface for user interaction with the AI.
- **Resource Library Pages:** Pages for browsing and searching psychoeducational materials.
- **User Dashboard:** A simple dashboard to display basic user information and access points to the chatbot and resource library.
- **Initial Assessment:** A secure form for the initial psychometric assessment using PHQ-9 and GAD-7.

2.2. AI Chatbot Capabilities

This phase will include the full development of the AI chatbot's core features as described in the original proposal.

- **Deep Personalization:** The chatbot will tailor responses based on the initial psychometric assessment and self-reported psychological state.
- **Proactive Support:** The AI will analyze conversation patterns to detect early signs of distress and respond proactively.
- **Cultural & Linguistic Nuance:** The AI will be fine-tuned on custom data to understand and respond to Indian cultural contexts and idioms.
- **Intelligent Recommendations:** The chatbot will recommend relevant content from the resource library based on the user's conversation history and psychometric data.
- **Crisis Management:** The AI will be trained to recognize crisis keywords and complex issues, and immediately provide a clear, empathetic prompt with a direct link to a local, trusted helpline or the school's counseling center.

2.3. Psychoeducational & Community Support

The focus for this phase is on the resource hub, not the community forum.

- **Curated Resource Hub:** The platform will feature a comprehensive, searchable library of psychoeducational materials, including articles, books, guided meditations, and music based on Indian classical ragas.

2.4. Offline Functionality

Key features will be available offline, ensuring that students can receive support even with unreliable internet connections.

- **Resource Hub Access:** The psychoeducational resource hub (for static content) will be fully accessible offline.
- **Basic Chatbot:** A basic chatbot for non-crisis situations will be available offline, leveraging local models.

2.5. Backend & Infrastructure

The backend will be built to support the features outlined above, with a focus on performance and scalability.

- **Chatbot API:** An API to handle all interactions between the frontend and the AI models.
- **Resource Management:** Backend logic and database schema to store and retrieve psychoeducational materials.
- **User Data Storage:** Secure storage for user psychometric data and conversation history to enable personalization.
- **AI Model Integration:** Infrastructure to serve the fine-tuned AI models, including a local version for offline use.

3. Technology Stack for Phase 1

The following technologies will be utilized to accomplish the Phase 1 goals:

- **UI/Frontend:**
  - **Next.js:** For building the user interface.
  - **Tailwind CSS:** For styling and responsive design.
  - **Framer Motion:** For animations and smooth transitions.
- **Backend:**
  - **FastAPI:** For building the API.
  - **Supabase:** For the backend database and user authentication.
- **AI & Personalization:**
  - **Llama3 & IndicBERT:** For the core AI model fine-tuning.
  - **vLLM:** For efficient serving of the AI models.
  - **DistilBERT:** For the lightweight, offline chatbot functionality.
  - **FAISS:** For intelligent recommendations within the resource library.
  - **Hugging Face:** For model hosting and management.

- **Hosting:**
  - **Vercel:** For frontend deployment.
  - **GCS (Google Cloud Storage):** For backend services and data storage.
- **Security:**
  - **Supabase:** Utilized for secure user authentication.
- **Offline Layer:**
  - **PouchDB & CouchDB:** To handle local data storage and seamless synchronization when the user comes back online.

4. Features Out of Scope for Phase 1

The following features from the original proposal will be developed in subsequent phases:

- **Human-in-the-Loop (HITL) Integration:**
  - Confidential Booking System with on-campus counselors.
  - Multiple Modalities (voice, video, physical meetings).
- **Community Support:**
  - The anonymous peer support platform and its moderation system.
- **Institutional Features:**
  - The Secure Admin Dashboard for school counselors and administrators.

5. Conclusion

Upon successful completion of Phase 1, AURA.ai will be a functional MVP that offers personalized AI support, a rich resource hub, and essential offline and crisis support capabilities. This will provide a strong foundation for future development, allowing us to validate the core concept and gather user feedback before expanding into more complex features.