CipherAura: Master Project Plan & Technical Blueprint

Vision: To build a future-proof, gamified, AI-powered language learning platform.

Beta Launch Target: November 8, 2026 (Diwali 2026)

Start Date: November 2025 (Diwali 2025)

# Phase 0: Foundation & Discovery (Diwali 2025 - Dec 2025) - "The Blueprint Phase"

Objective: Finalize planning, design, and setup before a single line of code is written.

* • Competitive Analysis & Feature Benchmarking
* • Define Core Technical Principles (Microservices, API-First, Privacy)
* • Finalize 'Week to Conversational' Curriculum
* • High-Fidelity UI/UX Prototyping with Figma/Adobe XD

# Phase 1: The Landing Page & Waiting List (Jan 2026 - Feb 2026) - "The Teaser"

Objective: Launch a public-facing, interactive landing page to build hype and capture beta user emails.

* • Frontend: Next.js + Tailwind CSS
* • Hosting: Vercel or Netlify
* • Backend: Firebase/Node.js API
* • Database: MongoDB Atlas or PostgreSQL
* • Step: Build landing page → connect form → deploy

# Phase 2: Core Platform & Gamification (Mar 2026 - June 2026) - "The Engine"

Objective: Build the core app without complex AI: focus on user accounts, lesson player, and gamification.

* • Framework: Next.js/Node.js + Express.js
* • Database: PostgreSQL + Redis
* • Authentication: Next-Auth.js/Firebase
* • Gamification Service: Separate Node.js microservice
* • Lesson player UI: Text, audio, speech, quizzes

# Phase 3: AI Integration & Personalization (July 2026 - Sept 2026) - "The Brain"

Objective: Integrate AI for speech assessment, personalization, and recommendations.

* • Use AI4Bharat models: IndicBERT, IndicTrans2, IndicWhisper
* • Host models via Hugging Face or Google Cloud Vertex AI
* • Fine-tune with learner dataset
* • Log scanning & clustering recommendations with Python + scikit-learn

# Phase 4: Beta Preparation & Launch (Oct 2026 - Diwali 2026) - "The Countdown"

Objective: Polish, test, and onboard closed beta users.

* • Mobile App with React Native
* • Testing: 100-200 users, feedback-driven
* • Monitoring: Sentry.io, Analytics with Plausible.io
* • Load testing with k6
* • Compliance with DPDP Act (Privacy & Security Audit)

# Detailed Technology Stack Summary Table

|  |  |  |
| --- | --- | --- |
| Layer/Component | Technology & Full Name | Description & Justification |
| Frontend (Web) | Next.js (React Framework) | Fast, SEO-friendly web app |
| Styling | Tailwind CSS | Rapid UI development |
| Mobile App | React Native | Cross-platform mobile apps |
| Backend | Node.js + Express.js | Scalable, event-driven backend |
| Primary Database | PostgreSQL | Reliable structured data storage |
| Cache/Sessions | Redis | Fast session/leaderboard storage |
| AI Models | AI4Bharat + Hugging Face | Pre-trained Indic models with fine-tuning |
| AI Hosting | Hugging Face Endpoints | Managed AI inference |
| Cloud Hosting | Vercel, Railway/Render | Simple deployments with free tiers |
| Monitoring | Sentry.io | Error tracking |
| Analytics | Plausible.io | Privacy-friendly analytics |

# Final Advice

Start Simple: Focus on speech checker + gamified lessons first.

Community: Engage with AI4Bharat for Indic AI support.

Focus: Build for Hindi first, replicate to other languages.