

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.