






jamb_ai_integration

Successfully integrated Gemini AI into the JAMB Coaching PWA, enabling automated question generation and smart tutoring features. The system now:

Key Achievements:

-  **AI Integration Complete:** Securely integrated user's Gemini API key into Supabase Edge Functions
-  **Live Question Generation:** Successfully tested AI-powered question generation for JAMB curriculum
-  **Automated System:** Set up cron job to generate fresh questions every 3 days
-  **Cost-Effective Design:** Batch generation approach minimizes API costs while serving unlimited users
-  **JAMB-Standard Content:** AI prompts specifically designed for Nigerian curriculum

Technical Implementation:

- **Secure API Storage:** Gemini API key stored as environment variable in Supabase
- **Edge Functions Deployed:** All AI functions (generate-questions, daily-question-rotation, analyze-performance) are live
- **Database Integration:** AI-generated questions automatically saved to database with proper metadata
- **Automated Scheduling:** Cron job (#1) runs every 3 days at midnight for question refresh
- **Fallback System:** Graceful degradation to mock questions if AI fails

Final Deliverable:

The PWA at <https://rdq6ayo2x80p.space.minimax.io> is now a fully functional, AI-powered JAMB exam coaching app serving 5 subjects (Mathematics, Physics, Chemistry, Biology, English Language) with automated question generation, progress tracking, and offline capabilities. The system is ready to serve thousands of Nigerian students with fresh, curriculum-aligned content.

Key Files

- `supabase/functions/generate-questions/index.ts`: Main AI question generation Edge Function integrated with Gemini API
- `supabase/cron_jobs/job_1.json`: Automated cron job configuration for daily question rotation every 3 days