# 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