Full Stack Development Intern Assignment: RAG Next.js Chatbot

Objective
Develop a Retrieval-Augmented Generation (RAG) chatbot using Next.js, Vercel AI SDK, and Supabase. The chatbot should be able to answer questions,, authenticate users, and store chat history.

Requirements

1. Setup and Authentication (25%)
- Set up a new Next.js project using the App Router.
- Implement user authentication using Supabase Auth.
- Create a login and signup page.
- Implement protected routes that are only accessible to authenticated users.

2. RAG Implementation (30%)
- Implement a RAG system using the Vercel AI SDK.

3. Chat Interface (20%)
- Design and implement a user-friendly chat interface.
- Include a message input area and a display for the conversation history.
- Implement real-time message updates.

4. Supabase Integration (15%)
- Use Supabase to store and retrieve chat history.
- Implement functions to save new messages and load previous conversations.

5. Deployment and Documentation (10%)
- Deploy the application to Vercel.
- Write clear documentation on how to set up and run the project locally.
- Include API documentation for any backend services you create.

Bonus Features (Up to 15% extra credit)
- Implement message streaming for a more responsive chat experience.

Evaluation Criteria
- Code quality and organization
- Proper use of Next.js, Vercel AI SDK, and Supabase
- User experience and interface design
- Effective implementation of the RAG system
- Security considerations, especially regarding authentication
- Documentation quality

Submission Guidelines
- Submit your code via a GitHub repository.
- Include a README.md with setup instructions and any necessary documentation.
- Provide a link to the deployed application on Vercel.
- Submit a brief report (max 2 pages) discussing your approach, challenges faced, and potential improvements.

Timeline
- You have 1 week to complete this assignment.
- Submission deadline: 30th July

Good luck, and happy coding!