**GLAI: iOS App for Golang Code Generation, Debugging, and Testing**

**📌 Project Overview**

**Vectro Consulting Services** invites iOS developers, Go enthusiasts, and open-source contributors to collaborate on a groundbreaking, community-driven mobile project — **GLAI**: an iOS application that empowers users to generate, debug, enhance, and test Golang code using natural language prompts.

GLAI is designed for developers, hobbyists, and learners who want to write and manage Go code on-the-go. Whether you're building a small CLI, testing a REST API snippet, or learning the language, GLAI gives you the power of AI and Golang in your pocket.

**🔧 Core Features**

**✅ Natural Language to Go Code Generator**

* Accept user prompts (voice or text).
* Generate valid Golang code.
* Syntax highlighting & error handling.
* Use cases: APIs, CLI tools, file parsers, etc.

**🐞 Integrated Debugging Tools**

* Identify compile-time, logical, and runtime errors.
* Show structured error messages and actionable suggestions.
* Highlight problem lines in code viewer.

**♻️ Code Enhancement Engine**

* AI-driven suggestions to optimize and refactor code.
* Idiomatic Go recommendations.
* Accept/reject suggestions with explanation.

**🧪 Run & Test Suite Execution**

* Run Go code snippets in secure sandbox environment (Yaegi or remote runtime).
* Generate and run test cases via go test.
* Display results with coverage and benchmark stats.

**🔁 Update & Versioning Assistant**

* Track changes between generations.
* Recommend module updates and security patches.
* Maintain changelog and code versions.

**🌍 Community Collaboration**

* Share code with Vectro community.
* Upvote/downvote and comment on snippets.
* Reuse components from a shared Go snippet library.

**🏛️ Ownership and Licensing**

* **Owned by:** Vectro Consulting Services
* **License:** MIT
* **Nature:** Community-driven project — open-source contributions are welcome.
* Attribution and recognition for all contributors; core infrastructure remains Vectro’s IP.

**🔬 Technology Stack Suggestions**

| **Layer** | **Tools/Tech** |
| --- | --- |
| Frontend (iOS) | SwiftUI, Combine, CoreML, CoreData |
| Backend Services | Go APIs, Firebase / AWS Amplify |
| Execution Runtime | Yaegi (embedded) or secure Go API exec |
| Testing Framework | Native go test + custom test runner |
| AI Layer | GPT-4 or fine-tuned LLMs hosted by Vectro |

**🚦 Project Setup Instructions (GitHub)**

**Step 1: Fork and Clone the Repository**

git clone https://github.com/VectroConsulting/GLAI.git

cd GLAI

**Step 2: Set Up iOS App**

* Open GLAI.xcodeproj in Xcode
* Run the simulator to verify project builds successfully
* Ensure SwiftUI version is 5.0 or above

**Step 3: Configure Firebase or Backend**

* Replace GoogleService-Info.plist with your Firebase config
* For remote code execution, configure API keys (coming soon)

**Step 4: Set up Golang Backend (Optional for Contributors)**

* Install Go: brew install go
* Clone /backend-api
* Run the Gin-based server: go run main.go

**Step 5: Contribute**

* Create a feature branch: git checkout -b feature/your-feature
* Commit your changes with detailed messages
* Open a Pull Request and tag an issue if applicable

**📈 Project Milestones**

| **Phase** | **Goal** |
| --- | --- |
| 1 | UX wireframes + MVP: Prompt to code |
| 2 | Add debugging, test runner, enhancement |
| 3 | Release private alpha |
| 4 | Enable collaboration, ratings, snippet hub |
| 5 | Expand plugins, SDKs, Android support |

**🤝 How to Contribute**

We’re looking for contributors in the following areas:

* iOS app development (SwiftUI)
* Golang runtime and APIs
* Prompt engineering and LLM tuning
* UI/UX design and testing
* Community management and documentation

Join our Discord (link coming soon), or send a proposal to [hello@vectro.ai](mailto:hello@vectro.ai)

**🔗 Useful Links**

* [Vectro Consulting](https://vectroconsulting.com/)
* [OpenAI API Docs](https://platform.openai.com/docs)
* [Yaegi Go Interpreter](https://github.com/traefik/yaegi)
* [Firebase](https://firebase.google.com/)

**✨ Let's Build the Future of Mobile Go Development**

GLAI is more than just an app — it's a movement to empower mobile-first coders with the power of AI and open-source collaboration.

*Start coding. Anywhere. Instantly. With GLAI.*