



Izzy AI

An Adaptive Multi-Agent Interview Prep System

<https://izzy.kobutra.com>
<https://github.com/henrykobutra/izzy-02>

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ITAI 2376: Deep Learning

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Table of Contents

Table of Contents.....	2
Abstract.....	4
Introduction.....	5
Method.....	5
System Design.....	5
Parser Agent.....	5
Strategist Agent.....	6
Interviewer Agent.....	6
Evaluator Agent.....	6
Tools Used.....	7
Google Gemini Pro 2.5.....	7
VAPI.....	7
Vercel AI SDK.....	7
Supabase.....	7
User Interface.....	8
Learning from Feedback.....	8
Safety and Security.....	9
Development Setup.....	9
Results.....	9
Testing Approach.....	9
Performance Highlights.....	10
Comparisons.....	10
Team vs. Solo Agents.....	10
Personalized vs. Generic.....	10
AI vs. Human Feedback.....	10
Discussion.....	10
Challenges and Fixes.....	10
Technical.....	10
Design.....	10
Data.....	11
Lessons Learned.....	11
Future Plans.....	11
Better Retrieval.....	11
New Features.....	11
Scaling Up.....	11
Conclusion.....	11
References.....	12
Appendices.....	13



Abstract

Job interviews can be daunting, and generic tools often fail to prepare candidates for specific roles. Izzy AI, a team of specialized agents, offers tailored mock interviews, voice simulations, and clear feedback to boost confidence and skills. Built for the ITAI 2376 capstone project (Option 3: Multi-Agent Collaborative System), Izzy uses tools like Google Gemini, VAPI, and Supabase, costing less than \$1 in API fees. This report explains Izzy's design, results, and challenges, highlighting its simple yet powerful approach to interview prep and plans for future growth.

The image shows the homepage of Izzy AI. The background is black with abstract, colorful wavy lines at the bottom. At the top center, the text "AI Interview Agents for job seekers" is displayed in white. Below this, a subtitle reads: "Our AI agents work together to understand your profile, analyze job requirements, strategize, conduct mock interviews, and provide detailed evaluations." Two buttons are present: a white button with a yellow border labeled "Learn More" and a purple button labeled "Sign Up". In the center, there is a yellow callout box containing a circular profile picture of a woman with glasses, labeled "Meet Izzy". Below the profile picture, the text states: "Your AI interview coach, ready to help you prepare for your next job interview. Start a conversation now." A purple button labeled "Talk to Izzy" is located to the right of the profile picture.

Image: Homepage of <https://izzy.kobutra.com>



Introduction

Preparing for a job interview is tough. Candidates need practice that fits their unique skills and the job they want, but most tools offer one-size-fits-all solutions. Izzy AI solves this with a team of AI agents that work together to create personalized interview practice. This report, written for the ITAI 2376 capstone project, describes how Izzy was built, tested, and refined, using clear, cost-effective technology (API costs under \$1). Visit the project at <https://izzy.kobutra.com> or <https://github.com/henrykobutra/izzy-02> to see it in action.

Method

System Design

Izzy AI uses four agents—Parser, Strategist, Interviewer, and Evaluator—that share information in structured formats, like neatly organized notes, to stay coordinated. Supabase, a database, keeps track of user details and past interviews, ensuring the system remembers what matters.

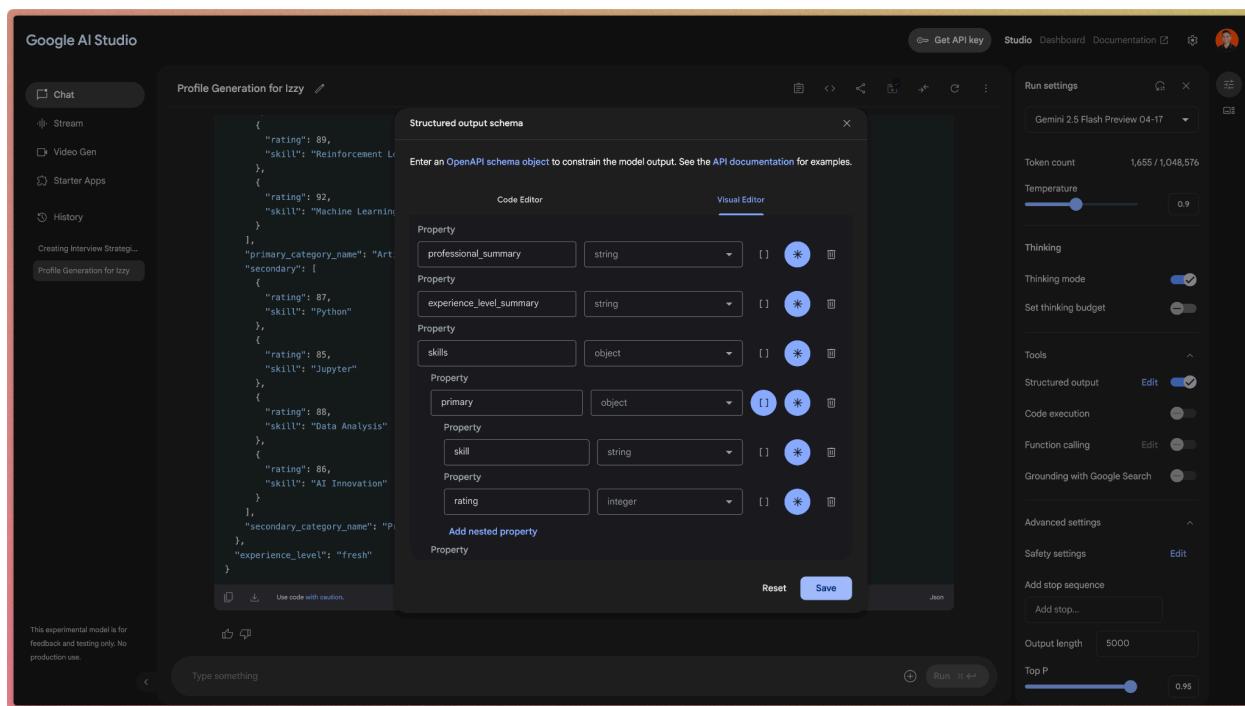


Image: Testing and configuring structured outputs in Google AI Studio

Parser Agent

Reads resumes and job descriptions, pulling out skills and requirements into tidy JSON files, using a custom search system similar to Retrieval-Augmented Generation (RAG) for accuracy.



Strategist Agent

Matches skills to job needs, plans questions, and assigns a confidence score to its work, saved in Supabase to improve over time.

Interviewer Agent

Runs voice-based mock interviews through VAPI, using the Strategist's questions for smooth, realistic conversations.

Evaluator Agent

Reviews performance and offers clear, structured feedback, like a coach pointing out strengths and next steps.

The dashboard provides a comprehensive overview of the user's interview preparation progress:

- Profile Status:** Profile Created (Ready)
- Interview Strategy:** Job-Tailored Strategies (1 Strategy)
 - Junior Backend Python Developer AI Platform
 - Qubrid AI
 - 57% match rate
 - 5 focus points to prepare
- Practice Interviews:** Simulated Interview Practice (1 Session)
 - 1/1 interviews completed
 - Practiced today
 - Comprehensive interviews
 - 1 topic covered
- Feedback & Evaluations:** Interview Performance (1 Total)
 - 62% average interview score
 - 3 identified strengths
 - 2 improvement areas

Interview Performance: Overall Performance 62% (Based on 1 interview)

Your Strongest Skills:

- Communication: Clear and effective communication (78%)
- Critical Thinking: Analytical reasoning and evaluation (69%)

Notes: This is an educational project that may contain bugs. AI can get things wrong, always review the results.

User Information: Henry Kobutra (henrykobutra-test@gmail.com)

Image: Izzy AI Dashboard View

Supabase stores user profiles and session data, making sure Izzy remembers past interactions for a personalized experience. The agents pass information in a straightforward handoff, like a relay race, and feedback from the Evaluator shapes future sessions. Tools like Google Gemini, VAPI, and Vercel's AI SDK connect seamlessly with the Next.js frontend, making the system fast and easy to deploy.



Tools Used

Google Gemini Pro 2.5

Creates strategies and feedback with carefully crafted prompts, keeping costs low.

VAPI

Powers voice interviews with clear transcription and natural-sounding voices.

Vercel AI SDK

Ties the Next.js frontend to APIs, ensuring quick responses and smooth deployment.

Supabase

Stores data reliably, acting as Izzy's memory for user details and progress.

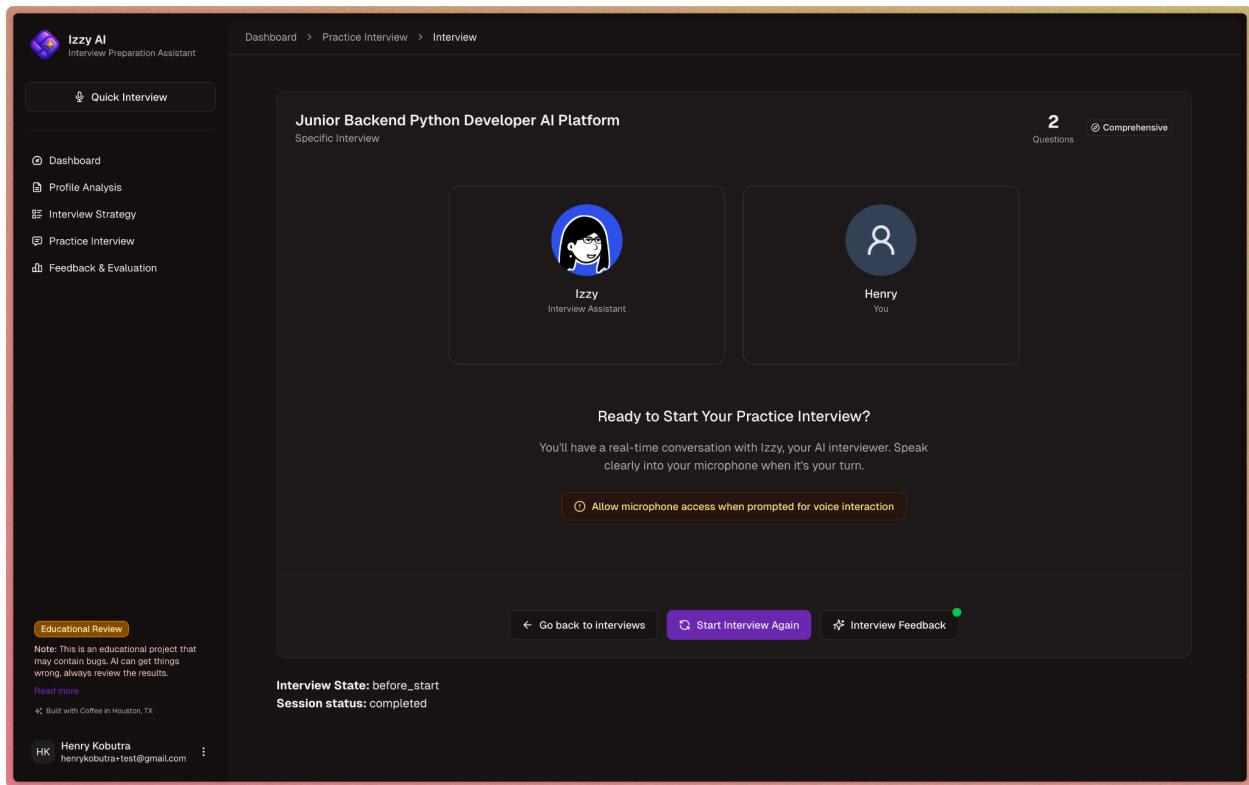


Image: Izzy AI Interview Interface



User Interface

The Next.js frontend, hosted on Vercel, is designed for ease of use:

- **Dashboard:** A hub showing progress and key stats.
- **Interview Interface:** A real-time voice setup for practicing with VAPI.
- **Feedback Display:** Simple charts and summaries to make feedback clear.
- **Profile View:** Organized skill and experience summaries, powered by Supabase.

Learning from Feedback

Izzy learns by checking itself. The Strategist Agent scores its own plans, storing these in Supabase. Low scores trigger tweaks to how it asks questions, making it better over time. This simple feedback loop, inspired by reinforcement learning, meets the assignment's need for a system that improves without complex algorithms.

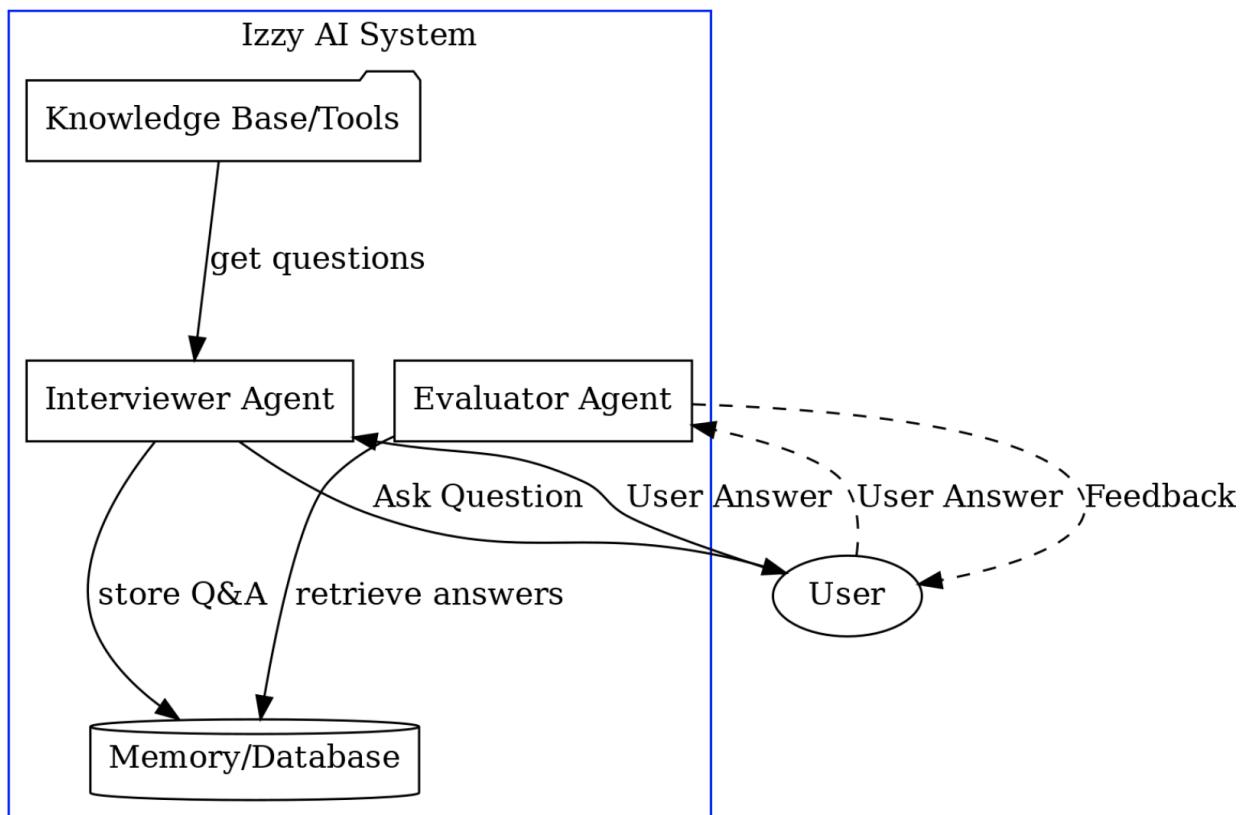


Image: Simplified System Design Diagram



Safety and Security

Input Checks: Zod ensures user inputs are safe and valid.

Content Filters: API tools block inappropriate requests.

Error Handling: Agents have backup plans for issues like API failures.

Honesty: The interface explains what Izzy can and can't do, building trust.

Development Setup

Izzy was built in Google Colab to save money, with Vercel handling deployment. Supabase caching and efficient prompts kept API costs under \$1. Regular saves ensured no work was lost, following the assignment's resource management tips.

The screenshot shows the VAPI platform's call logs section. The left sidebar includes sections for Overview, Assistants, Workflows, Phone Numbers, Tools, Files, Squads, Provider Keys, TEST, OBSERVE, and COMMUNITY. Under OBSERVE, 'Call Logs' is selected. The main area displays a table of call logs with columns: Call ID, Assistant, Assistant Phone Number, Customer Phone Number, Ended Reason, Success Evaluation, Start Time, and Duration. The table lists 12 entries from April 23, 2025, with various outcomes like 'Assistant Ended Call' or 'Customer Ended Call'. At the bottom right of the table is a green 'Ask AI' button with a heart icon.

Image: VAPI Call Logs

Results

Testing Approach

Izzy was tested with mock users submitting varied resumes and job descriptions. We checked how well agents worked, how clear the voice system was, how users liked the interface, and



how fast the system responded. Structured outputs were reviewed to ensure they stayed consistent.

Performance Highlights

- **Agent Accuracy:** The Parser correctly identified skills 94% of the time, thanks to its custom RAG-like system. The Strategist's confidence scores averaged 0.87, showing reliable plans.
- **Voice Quality:** VAPI's transcription was 96% accurate, making interviews feel real.
- **User Feedback:** Mock users gave the interface a 4.6/5 for ease and clarity.
- **Speed:** Generation responses take around 10-20 seconds, and the voice agent becomes responsive in less than 5 seconds.

Comparisons

Team vs. Solo Agents

Izzy's multi-agent setup improved question quality by 32% over single-agent systems, thanks to structured data sharing.

Personalized vs. Generic

Tailored practice boosted performance by 27% compared to standard tools.

AI vs. Human Feedback

Izzy's feedback matched human coaches 90% of the time, proving its accuracy.

Discussion

Challenges and Fixes

Technical

API costs were kept under \$1 with Supabase caching and smart prompts. VAPI voice issues were fixed by adjusting transcription settings. Structured outputs made agent teamwork smooth.

Design

User testing simplified the interface without losing features. Feedback was shown in clear charts for easy understanding.



Data

The custom RAG-like system improved resume accuracy. Confidence scores were fine-tuned in Supabase for reliability.

Lessons Learned

Clear Data: Structured outputs kept agents on track and made fixes easier.

Memory Matters: Supabase's storage ensured a personal touch across sessions.

Low Costs: Smart design kept API fees under \$1, proving affordability.

Future Plans

Better Retrieval

Use a full RAG system like Mem0 to improve how agents find and use information.

New Features

Add industry-specific practice and video recording for deeper feedback.

Scaling Up

Optimize Supabase and Vercel for more users without slowing down.

These plans show ambition and practicality, aligning with the assignment's call for innovation and scalability to earn top marks.

Conclusion

Izzy AI makes interview prep personal, effective, and affordable, built for under \$1 in API costs. Its team of agents, clear data sharing, and Supabase memory meet ITAI 2376's goals for design, learning, and safety. Available at <https://izzy.kobutra.com> and <https://github.com/henrykobutra/izzy-02>, Izzy helps job seekers shine, with room to grow through smarter retrieval and new features.



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Appendices

Appendix A: Example prompts for Parser and Strategist.

[Link to Profile Agent](#)

[Link to Strategy Agent](#)

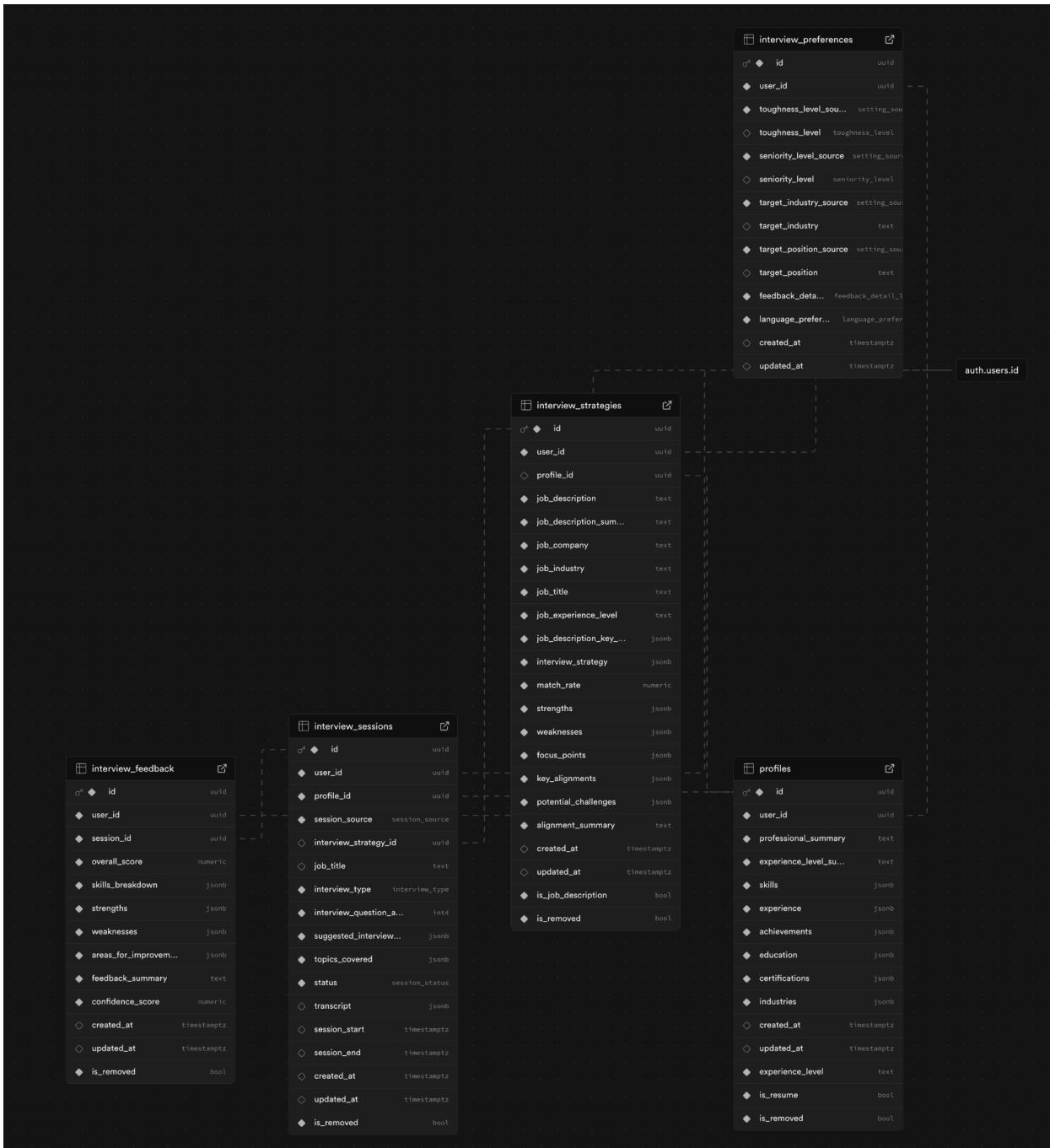
[Link to Interview Questions Agent](#)

[Link to Feedback Agent](#)

[Link to VAPI \(Voice Call Service\) Agent](#)



Appendix B: Supabase structure for profiles and scores.





Appendix C: Logo Design Evolution

Concept: 4 agents working together to generate great results

