Project Description: RH-Master-DB

Developer: Makinde Daniel | **Tech Stack:** PostgreSQL, Supabase, Python

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1. Executive Summary

RH-Master-DB is a high-integrity relational engine built to replace manual spreadsheets for Remote Hustle. It centralizes data for 100+ participants, automates scoring, and creates a verifiable audit trail for every administrative action.

2. The Problem

- **Data Silos:** Scattered information leads to tracking errors.
- **Manual Math:** Leaderboards take hours to calculate manually.
- **Zero Accountability:** No "paper trail" for score changes or deletions.

3. The Solution: Intelligent Automation

This moves Remote Hustle into a structured environment that validates data instantly upon entry.

Key Features:

- **Relational Integrity:** 8 interconnected tables (Users, Profiles, Stages, Challenges, Submissions, Evaluations, Audit Logs, and Leaderboard) ensure no submission is ever "orphaned."
- **Safety Rails (Constraints):** Hardcoded rules prevent human error e.g., the DB rejects any score outside the 0–100 range.
- **Live Analytics:** A custom SQL View generates a real-time leaderboard, eliminating manual calculations.
- **Security:** Utilizes UUIDs to prevent ID-guessing attacks and an Audit Log to record every score modification for 100% transparency.

4. Technical Architecture

- **Database:** PostgreSQL (Strict data typing for high reliability).
- **Hosting:** Supabase (Cloud-hosted for seamless judge access via URI).
- **Stress Testing:** Populated with 300+ records via a Python seeding engine to demonstrate real-world performance.

5. Operational Impact

Admins can execute the provided Operational Queries to instantly:

1. **Track Participation:** View real-time submission gaps.
2. **Filter Talent:** Automatically identify the top 20% of scorers for Stage 2.
3. **Audit History:** View a timestamped log of every grade change for fairness.