AutoDBA Web – MVP Specification

1. Introduction

AutoDBA Web is a minimal yet powerful web-based tool designed to audit cloud-hosted MySQL databases. It aims to offer immediate insight into database structure, indexing, and constraints, helping users identify potential inefficiencies and risks through an intuitive interface. This document defines the Minimum Viable Product (MVP) specification.

2. MVP Objectives

- Enable users to register, authenticate, and maintain a session using JWT.

- Allow users to securely connect to a cloud MySQL database without storing credentials long-term.

- Run three core audit modules (Schema, Indexes, Constraints) on demand.

- Display results visually and clearly in a dashboard interface.

- Ensure all operations are read-only and non-destructive.

- Provide a robust, linear, and single-user workflow.

3. Core Features

1. User Authentication:

  - Signup and login via email/password.

  - JWT-based session management.

2. Database Connection:

  - Enter DB credentials (host, port, db name, username, password).

  - Validate connection and check availability.

3. Audit Engine:

  - Structural & Schema Analysis (e.g., orphaned tables, missing PKs).

- Index Efficiency Analysis (e.g., missing or redundant indexes).

- Constraint Integrity Check (e.g., broken FKs, missing ON DELETE rules).

4. Results Dashboard:

- Composite score (0-100).

- Tabs per module with detailed issue lists.

- UI warnings for partial/incomplete results.

4. MVP User Workflow

Step 1: Visit landing page.

Step 2: Sign up or log in with JWT auth.

Step 3: Input MySQL DB credentials.

Step 4: Backend tests DB connection.

Step 5: User is redirected to dashboard.

Step 6: Three audit modules are executed (schema, index, constraints).

Step 7: Results are displayed with scores and issue drilldown.

Step 8: User may reconnect to DB or logout.

Step 9: JWT is invalidated on logout.

5. Optional Features

- Welcome landing page before login.

- Toggle between light/dark themes.

- Basic audit history (session-only).

- Visual loading states (skeletons, progress bars).

6. Summary

This MVP specification outlines a clean and focused product that enables users to evaluate the health of their MySQL databases through an automated, web-based interface. It avoids

unnecessary complexity, stores no sensitive data permanently, and is ideal for showcasing technical capability in a demo, interview, or academic setting.