National In-Service Training Database

Overview

The National In-Service Training Database is a centralized platform designed to manage the entire professional development lifecycle for the Belize Police Department. It replaces traditional paper-based methods with a single, authoritative digital source for all training activities. The system's core function is the complete administration of departmental education, including the creation of courses, scheduling of training sessions, management of facilitator profiles, and tracking of participant enrollment and attendance.

To ensure data integrity and secure access, the platform features user management and operates on a strict Role-Based Access Control (RBAC) model, assigning specific permissions to different users. This streamlines workflows for administrators, course managers, and officers. Ultimately, this database serves as a critical strategic tool, empowering the department to move beyond simple record-keeping to efficiently track mandatory compliance, monitor individual officer development, and make data-driven decisions to enhance the overall skills and readiness of the force.

Design summary

- Language & framework: Golang for low-latency, compiled binaries and easy concurrency; net/http or httprouter for minimal overhead.
- DB: PostgreSQL for relational integrity, joins for reporting, and support for analytics queries.
- RBAC: Roles (Administrator, Content Contributor, System User) drive access control at API level.
- REST resources: Resource-per-endpoint mapping keeps API predictable and cache-friendly.
- Migrations: golang-migrate to manage schema changes and versioning.
- Separation of concerns: controllers/handlers, services, repositories (implied) for testability and maintainability.

Limitations

- The project is a backend API service and does not include a frontend user interface (UI). All data visualization, such as graphs or charts would have to be developed separately.
- The system's scope is limited to data persistence and retrieval. It does not currently feature automated business logic, such as generating alerts or flagging officers who do not meet annual training requirements.

Future Improvements

- Allow permissions to be assigned based on roles rather than individuals. Our implementation followed the sample code provided, but after near completion of the project, we realized it would have been more effective to manage permissions through the relationship between roles and permissions instead of between users and permissions.
- Use a Front-End Framework: Currently our output is just for developers. It would be our intention to do a Front-End using a framework like Flutter.