Your answer NOT SUBMITTED

Assignment

Assignment: Customizing and Extending the Go Backend for Intelligent Devices

Objective: This assignment challenges you to adapt the Go backend codebase for your intelligent devices project. By implementing and customizing data entities, handlers, validators, and database tables, you'll create a backend that fits your specific project requirements. This hands-on task will reinforce your skills in backend development and data handling.

Instructions:

1. **If needed: Familiarize Yourself with the Codebase**
    - Review the provided Go backend codebase and understand the key components, including routes, handlers, validators, and database schemas.
    - Identify areas where customizations will be needed to align the backend with your project's intelligent device requirements.
2. **Define Your Device Data Entity**
    - Based on the data your device collects or interacts with, design a custom data entity. This should include attributes specific to your device's functionality (e.g., temperature, humidity, or sensor status for a smart thermostat).
3. **Implement Custom Data Entity and Handlers**
    - Extend/Update the codebase by adding your custom data entity to the project, including the necessary database table(s) and struct(s).
    - Write/Modify handlers for CRUD (Create, Read, Update, Delete) operations for this entity, adapting any sample handlers provided as necessary.
    - Ensure each handler follows RESTful conventions and handles any edge cases (e.g., missing or incorrect data).
4. **Set Up and Customize Validators**
    - Implement custom validators for your entity to ensure data integrity (e.g., range checks, required fields).
    - Integrate these validators into your CRUD handlers so that validation occurs before database operations.
5. **Integrate Your Device with the Backend**

- Connect your intelligent device(s) to the backend API. Your device should send data to and retrieve data from the backend as required by your project.

6. **Advanced: Add Intelligence (Optional)**
    - If your device performs intelligent functions (e.g., predictive analysis, automation), add backend support for these functions.
7. **Testing and Debugging**
    - Rigorously test your customized backend and its integration with the device.
8. **Documentation and Reflection**
    - Document your customization steps, including code explanations and a brief overview of how each part works with your device.
    - Write a reflection on your experience, discussing the challenges you faced, the skills you gained, and any ideas for future improvements.

Deliverables:

- **The Customized Go Codebase**: Submit your customized codebase
- **Documentation**: Provide a document with details on your design and any unique features you implemented.
- **Reflection**: Include a short reflection on the assignment, discussing what you learned and any challenges you overcame.