PROGLANG38562 – Final Exam Documentation

Exam Title: Final Exam – Backend Server Implementation

Course: PROGLANG38562

Exam Duration: 2 hours and 30 minutes per student

Objective

The goal of this final exam is to evaluate the student's ability to design and implement a backend server from the ground up. The backend will be tested against a pre-existing frontend, which relies on the backend endpoints to function correctly.

Students are expected to demonstrate:

- • Understanding of REST API development
- • Ability to create models and endpoints
- • Knowledge of CORS and cross-origin resource handling
- • Ability to integrate backend and frontend seamlessly

Exam Instructions

1. Each student will be given 2 hours and 30 minutes to complete the exam.
2. You are free to use AI tools for research and implementation guidance.
3. Your backend server must run on port 8082.
4. The frontend will be served from a different origin: http://localhost:5173. You must implement CORS properly to allow communication.
5. After downloading and unzipping the React frontend file, make sure to run `npm install` to install all required dependencies.
6. Watch the provided demonstration video carefully to understand the expected final output.

Backend Requirements

Server Port - 8082

Required Endpoints

Endpoint	HTTP Method	Description
/kopeetearia-api/add-order	POST	Add a new order

Endpoint	HTTP Method	Description
/kopeetearia-api/orders	GET	Retrieve all orders
/kopeetearia-api/total-bill	GET	Retrieve total bill and discounted bill
/kopeetearia-api/update/{id}	PUT	Update an existing order by ID
/kopeetearia-api/delete/{id}	DELETE	Delete an order by ID

Model Attributes

Attribute	Type	Description
id	long	Unique identifier for each order
orderName	String	Name of the order
price	double	Price of the order
isDiscounted	boolean	Indicates if the order is discounted

Additional Requirements

1. Implement CORS handling to allow requests from the frontend at http://localhost:5173.
2. Ensure that all endpoints function correctly with the given frontend.
3. Provide proper response messages and HTTP status codes for success and failure scenarios.
4. Test your backend thoroughly before submission.

Assessment Criteria

Criteria	Points
Backend functionality (all endpoints implemented and working)	40
Correct implementation of model attributes	20
CORS implementation	15
Integration with frontend	15
Code quality, structure, and readability	10

Total: 100 points

Submission Guidelines

• Submit the fully functional backend project folder.
• Ensure the project can be executed immediately with minimal setup.

- Any missing endpoints or incorrectly configured CORS will result in point deductions.
- Watch the provided demonstration video and ensure your backend output matches.

Notes

- Students are allowed to use any Java framework or tools to implement the backend.
- Time management is critical; plan your 2.5 hours wisely.
- Testing your endpoints with a simple frontend or Postman before final submission is highly recommended.