CPSC 449-02
Web Backend Engineering
Project -2

submission:05/05/2025.

Inventory Management System Backend development using Fast API

The Goal of this project is to develop the backend of an Inventory Management System using the Fast Api web framework. The system shall contain RESTful APIs for managing inventory items, implementing CRUD operations (Create, Read, Update, Delete) **with all valid input validation, user authentication using cookies and sessions to track logged-in users, and error handling.**

Your inventory management system must be "named," indicating which type of products your inventory would contain.(it should be of a specific type, not general)

Functional Requirements:

1. **User login and admin login :**
    - User Login: Implement user login functionality where a user can log in by providing credentials (username and password). Use sessions and cookies to track and maintain login states.
    - User Registration: Allow new users to register by providing a username, password, and email.
    - Session Management: Use Fast API session management to store user session data securely.
    - Logout: Implement logout functionality that clears the session and removes authentication cookies.
2. **CRUD Operations for Inventory:**
    - Create Inventory Item: Allow the creation of new inventory items with fields like item name, description, quantity, and price. With auto creation of ID
    - Read Inventory Items: Provide APIs to list all inventory items or fetch a single item based on its ID.
    - Update Inventory Item: Allow the modification of an inventory item's details (name, quantity, price, etc.).by id
    - Delete Inventory Item: Enable deletion of an inventory item by ID
3. **Admin-Specific Inventory Management:**
    - Each logged-in user will have their own inventory items, ensuring that admin can only access and modify their own data.
    - Use JWT authenticator to ensure that only authenticated admin can access inventory-related CRUD operations.
4. **Session and Cookie Security:**
    - Secure user sessions with encryption (FAST api secret key).
    - Implement proper session expiration handling to automatically log out inactive users

5. **Database Implementation:**
    - Connect your application to the Mysql database.
    - Connect your application to your Mongo DB database

    Would ask you guys to perform querying (both on mysql and Mongodb) and indexing (mongo db.)

6. **Testing of your application using postman**
    - Create a presentation slide of about 8 to 9 slides consisting of the details on how the project was developed and how the work was divided among yourself and the technology used.

Project demo will be done live in the class on 5th of May and 9th of May 2025, and along with the Demo there would be 2 – 4 question asked from my side .