E-Commerce Backend System

Project Overview:

This project implements a simplified backend system for an e-commerce platform. It supports core business functions such as managing customers, products, purchases, staff, and credit card information, as well as handling product returns. The system uses a relational database to store all relevant data and includes business logic implemented in Python to simulate user interactions with the database.

Functional Requirements:

1. **Customer Management**
    - Store customer information including unique ID and name.
    - Customers can view available products and make purchases.
2. **Product Catalog**
    - Maintain a catalog of products with unique ID, name, and price.
    - Staff members can be associated with the system.
3. **Purchasing Process**
    - Record purchases linking customers to products along with purchase date.
    - Support multiple purchases per customer.
4. **Credit Card Information**
    - Store credit card data linked to customers, including card number and expiry date.
    - Can include multiple cards
5. **Returns Management**
    - Support processing returns by linking them to specific purchases.
    - Track return dates and exclude returned products from total spending calculations.
6. **Business Logic (CLI)**
    - Provide a command-line interface to:
        i. List available products.
        ii. Make a purchase by entering customer ID and product ID.
        iii. Show all purchases made by a specific customer, including returned status.
        iv. Process a return by purchase ID.

Non-functional Requirements:

- The database will be implemented using SQL with tables for customers, products, purchases, staff, credit cards, and returns.
- The business logic will be implemented in Python as a CLI application simulating interaction with the database.
- The system will demonstrate multi-table SQL queries and basic data manipulation.

- The application will be simple, focusing on correctness and functionality rather than scalability or user interface design.

Constraints:

- The project will not implement authentication or payment processing security.
- The staff role is included for completeness but does not have detailed functionality in the current implementation.
- The system runs as a simulation and does not connect to an actual database in the Python code.