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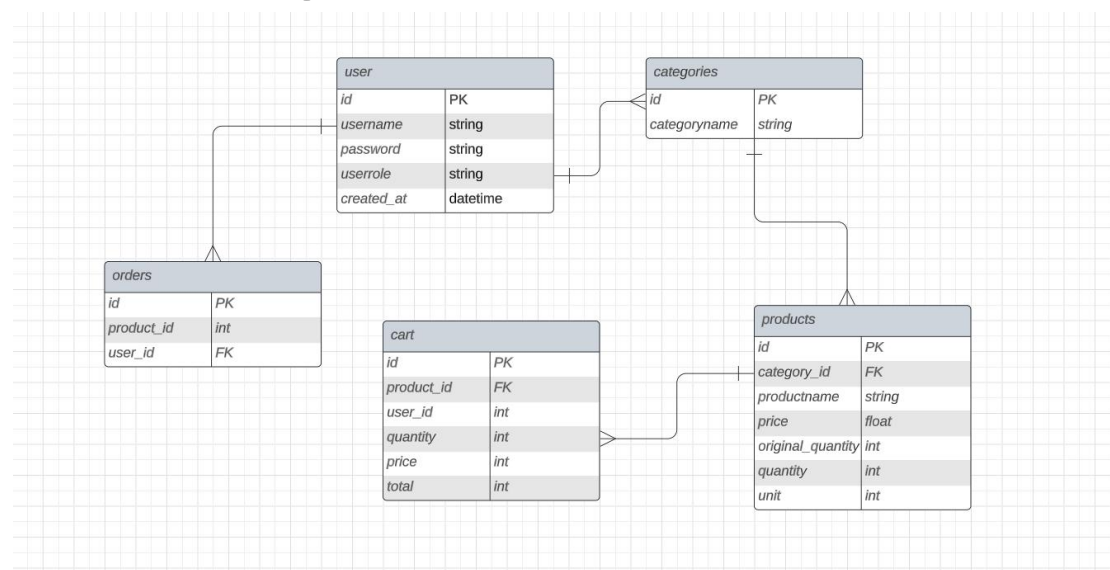*A data science enthusiast and a budding software developer*

Description

Grocery store V1 is the MAD1 project for the term May 2023 of IITM BS Degree. It is a multi-user app(one required admin/store manager and other users). Used for buying and selling groceries. User can buy many products for one or multiple sections. Store manager can add section/category and products.

Technologies used

- Flask - for backend server
- Jinja - for templating the front-end
- Flask-SQLAlchemy - for database Object Relational Mapping
- SQLite3 - for database storage
- Chart.js - for showing charts
- Bootstrap - for the front end

DB Schema Design

Architecture and Features

The project is structured within a main folder, encompassing various components. A static folder is dedicated to storing essential images, CSS files, and backgrounds. This folder enhances the visual aspect of the application. The template folder contains vital HTML pages pivotal for the user interface. Additionally, a csv folder is dynamically generated to house a zip file containing CSV representations of the database tables. This zip file is automatically generated when the manager initiates the export function. The core database functionality is managed by the 'database.sqlite3' file, housing the diverse tables. The 'app.py' file consolidates the application's logic, including models, configurations, and routes, ensuring seamless operation.

Features

- **Authentication:** The project incorporates a robust authentication system that effectively segregates user roles into User and Manager categories. Access to the User and Manager dashboards is strictly controlled, with only authorized users gaining entry. Remarkably, the managerial role is exclusive, reserved for a single designated individual. Session-based authentication ensures secure access.
- **Manager Dashboard:** Empowering managers with comprehensive control, the Manager Dashboard offers features for category and product management. Managers can create, modify, or delete categories and products. Importantly, deleting a category automatically removes all associated products. The Manager Dashboard also hosts visual analytics in the form of charts, presenting insights into product sales trends. Additionally, managers can download data in CSV format, facilitating data analysis.
- **User Dashboard:** The User Dashboard caters to users' shopping needs by facilitating product search, browsing, and purchasing. The user-friendly interface ensures seamless navigation. Real-time stock availability is indicated, preventing selection of out-of-stock items.
- **Search Functionality:** Users can efficiently search for products using diverse parameters such as categories, product names, and price ranges, enhancing the shopping experience.
- **Cart Management:** A pivotal feature, the Cart allows users to curate their desired items for purchase. Users can add, remove, or modify product quantities within the cart, facilitating hassle-free shopping.
- Order Tracking: Users can conveniently monitor their purchase history through the Orders section. This feature offers transparency into previous transactions, fostering a sense of control and accountability.
- **Comprehensive Analytics:** The application excels in providing managers with insightful data analytics. The Summary section presents intricate details such as product sales per category and top-performing categories. These insights are visualized through intuitive charts, powered by chart.js.
- **Data Export:** Managers are empowered to export data in CSV format, enabling further analysis and processing. Moreover, the project supports the simultaneous download of a zip file containing all CSV files, streamlining data retrieval.

Video

https://drive.google.com/file/d/1753OZuuD47aMLeFW0FXGbu30Yk5yMHQF/view?usp=sharing