AUTHOR:

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I'm a Data Science Enthusiast looking forward to work on meaningful projects to make a positive impact in the people's lives.

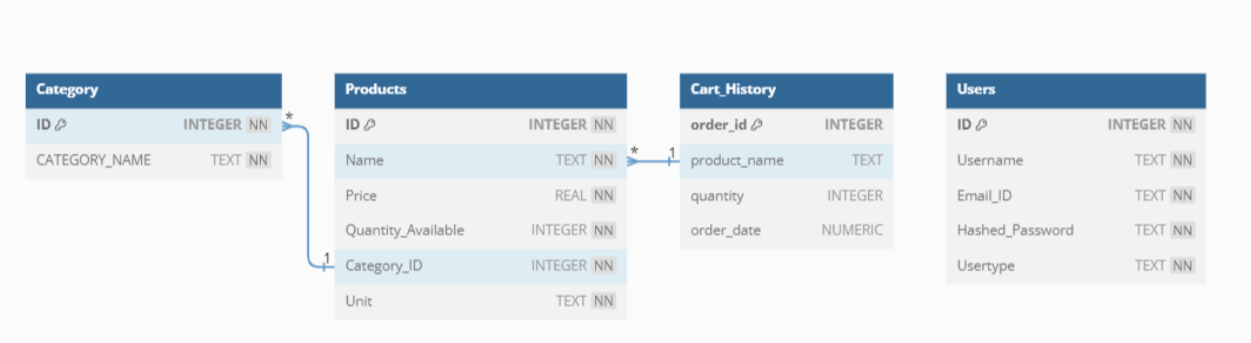
DESCRIPTION:

The project is a Flask-based web application for managing a grocery store. The application supports user authentication, product browsing, cart management,buying the products and additionally purchase data visualization for admin. Users can sign up, log in, browse products, add products to the cart, and purchase them. Admins have additional functionalities for managing categories and products.

TECHNOLOGIES USED:

Flask: Micro web framework in Python for building web applications.
SQLAlchemy: Object-Relational Mapping (ORM) library for database management.
Flask-Login: Provides user authentication and session management.
Flask-Session: Handles server-side sessions for users.
Flask-CORS: Enables Cross-Origin Resource Sharing (CORS) for handling cross-domain requests.
Plotly: High-level data visualization library for interactive plots.
Pandas: Data manipulation and analysis library.
Jinja2: Templating engine for rendering dynamic HTML templates.
SQLite: Lightweight relational database management system.
Werkzeug: Library used to hash and verify password for security.

DB Schema Design:



Constraints:

1. All Columns in Category,Products and Users table are set to Not Null to avoid having empty entries.
2. Category Name in Category Table and Product Name in Product Table are set to Unique to avoid duplicate entries.
3. User Email and Password is set to unique to avoid duplicate entries.

API DESIGN:

Have not used an API like REST or any other API in my project.

ARCHITECTURE AND FEATURES:

The project follows a well-structured organization using the Flask web framework. The route functions, acting as controllers, are defined in the main script, handling user requests and responses. Models are implemented using SQLAlchemy, representing entities like products, categories, users, and cart history, and facilitating database interactions. The HTML templates for rendering the user interface are stored in the "templates" folder, while static files reside in "static_folder," providing resources for styling and interactivity. The application integrates Flask-Login for user session management, Flask-CORS for cross-origin requests, and Flask-Session for session storage. Furthermore, Matplotlib, Pandas, and Plotly Express enhance data visualization and analysis, contributing to the project's overall functionality and organization.

The project incorporates a range of features to enhance user experience and functionality.Default features include user authentication and session management using Flask-Login, ensuring secure access and personalized sessions. The project includes a user registration and login system that stores hashed passwords for security. The Login Page is same for the admin and Customers,where the User can provide their credentials and set their usertype to admin or customer to login to login to the respective pages.The Customers can explore products via the 'Products' route, apply filters,search for items and add the products to the cart after specifying the quantity. The add to cart functionality allows users to add products, view cart contents, and complete purchases. Products and categories are managed through the Admin route which enables the administrators to add, update, and delete items. Additionally, the project integrates data visualization using Plotly Express, providing insights through dynamic graphs and charts. The application employs Flask-CORS for handling cross-origin requests, and Flask-Session ensures session persistence. These features are seamlessly integrated, offering a user-friendly interface and effective data management, ultimately enhancing the overall functionality of the grocery store application.

Video:

https://drive.google.com/file/d/1FlYFpHYCpk4pjMWT_8FNPZRqsFnAH8Jg/view?usp=sharing