Author

Syed Yousuf Quli
21f3000766
21f3000766@ds.study.iitm.ac.in
I am a Diploma level student at this BS Degree program.

Description

The project involves design and implementation of a Grocery Store Web-Application, which involves database design, login/register new users and manage products and Categories. Front-End integration using Vue-js.

Technologies used

Flask – for API and caching.
Flask-JWT-Extended - for token based authentication and RBAC.
Flask-SQLAlchemy – For Database design and SQLite3 for storage
Vue-js Framework– for front-end.
HTML – for structure and Templating
CSS/Bootstrap – for front-end Aesthetics

DB Schema Design

The backend System relies on Flask, SQLite, Flask-SQLAlchemy and ORM (Object-relational Mapping)
Tables used:

User: The user table stores user information such as username and password, could also be extended to store phone numbers, email, etc.

Categories: Categories table stores category name and id, and products.

Products: This table stores product information such as name, stock, price, units, expiry date.
There is a One-to-many Relationship between categories and products, as a category can have multiple products but a product can belong to only one category.

Cart: This table is a one-to-many relationship with the User table. It stores user id and product information like price, quantity, grand total.
Admin: Stores admin information - username, password.

API Design

API for Category, Products and Cart management, using HTTP methods (GET, POST, PUT, DELETE)

Architecture and Features

I have used MVC (Model-View-Controller) architecture, model and controller are in the code folder and templates are in the Template folder in the root directory. I have used a virtual environment to install all the required packages.
Flask-JWT_Extended, token based login framework using RBAC (role based access control), CRUD operations by Admin, Store Manager and User using API and HTML verbs. Front-end rendering using Vue-js Framework.

Admin can create new categories, approve new users to store-managers and approve requests from store-managers to add a new category.

Store-Managers can add new products in the existing categories and send requests to add new categories.

Users can buy different products from multiple categories.

Video

https://drive.google.com/file/d/1aaQ-ZFmGj_oZfRX9twj0SK5EcZ9rCHpC/view?usp=sharing