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Greetings, my name is Rushil Gupta and I am a Diploma level student of IITM BS Degree in Data Science.

Description – Grocery Store Application

We were supposed to make a single admin, multi-user app which lets users order their choice of groceries and products online through our app. The admin can add, update or delete categories and also add, update and delete products within the categories.

Technologies used

- `Flask - for application code`
- `Flask-SQLalchemy –to work with databases`
- `Flask-Login – to enable secure login`
- `SQLite – for data storage`
- `Html - for making the html pages`
- `Css, bootstrap - for styling and frontend designs`
- `Jinja2 - for dynamic rendering and variable passing`

DB Schema Design

Table User

Columns: uid (Integer, Primary_key)
username (String, not null, unique)
password (String, not null)
isadmin (Integer, not null)

Table Categories

Columns: cid (Integer, not null, Primary_key)
cname (String, not null)

Table Products

Columns: pid (Integer, not null, Primary_Key)
cid(Integer, Foreign_key)
pname (String, not null)
unit (String)
price (Integer, not null)
quan (Integer, not null)
mfd (String)
exp (String)

Table Cart

Columns: id (Integer, Primary_key)
uid (Integer, Foreign_key)
cid (Integer, Foreign_key)

pid (Integer, Foreign_key)
order(Integer, not null)

I have created 4 tables for my project, User table stores the basic data of the user such as username and password and also determines whether a user is an admin or a plain user (customer). Categories and Products tables store categories and product data respectively and have a One to Many relationship. Cart data stores the order of a particular customer and is thus linked to all of the above tables.

Architecture

All my contents are in a main folder which contains the application code in app.py, all my web pages are stored in templates folder and all my images are stored in static folder (no css file as I have used inline css). My database file is stored in directory folder. I also have requirements text and README text file in my folder. My entire application can be run on a localhost from the terminal without needing a virtual environment.

Features

I have implemented various features which cover all the basic functionality of a grocery store app. I've categorized my implementations based on the following -

Base requirements:

- Admin login and User login and User sign up
- Category and Product Management (adding, viewing, updating and deleting categories and products)
- Ordering products from various categories based on their availability.
- Search for categories, and products based on their name, price, manufacture and expiry date.
- Ability to show out of stock for unavailable products, displaying total amount of all the products in cart, and throwing error if user tries to buy more than available.

Recommended and Optional requirements:

- Creating APIs to fetch data from database. (I have created fully functional APIs that can fetch all or individual data from Products and Categories table. However, they lie dormant and are not used in the CRUD applications for my project.)
- Creating a secure login system using Flask- Login such that the application routes would not be accessible to people unless they login to the system. Moreover, I have also secured the system in such a way that a user cannot access routes meant for admin and vice versa.
- Proper validation checks to warn users of invalid credentials or if username already registered or if a product price or quantity being added is 0 or less.
- Displaying newly added products and categories at the front and top respectively.
- Separate search for admin and user (admin's search results allow him to update or delete a searched product/category while user's search allows them to add a searched product to cart)
- I have also given users an option to remove products from their cart which was not mentioned as part of requirement.

To watch a demonstration of my project, please go through this link:
https://drive.google.com/file/d/100HfU5NVgM7Ffw3JiJGpOL8lHVv75Dhw/view?usp=sharing