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I am a BTech final year student from Agra,Uttar Pradesh.i will be completing both the diplomas in this degree by the end of the september 2023 term.I love playing chess and am a huge fan of Formula 1 racing.

Description

Develop a web application for grocery shopping with two types of users, an Admin/Manager and customers. Admin should be able to manage the categories and products available on the app and the customers should be able to do shopping on the app.

Technologies used

- Flask :as the backend framework
- Flask-SQLAlchemy: as the ORM for the database
- SQLite : to implement the relational database used in the app
- Matplotlib:to plot the transaction data

DB Schema Design

Table Schemas and their constraints:

- **admin** (a_id INTEGER NOT NULL, username VARCHAR NOT NULL, password VARCHAR NOT NULL, PRIMARY KEY (a_id), UNIQUE (username))
- **user** (u_id INTEGER NOT NULL,name VARCHAR NOT NULL,username VARCHAR NOT NULL,   password VARCHAR NOT NULL,PRIMARY KEY (u_id),UNIQUE (username))
- **category** (c_id INTEGER NOT NULL, name VARCHAR NOT NULL, PRIMARY KEY (c_id),UNIQUE (name))
- **product** (p_id INTEGER NOT NULL, name VARCHAR NOT NULL, category_id INTEGER NOT NULL, unit VARCHAR(6) NOT NULL, quantity INTEGER NOT NULL, cost INTEGER NOT NULL, PRIMARY KEY (p_id), UNIQUE (name), FOREIGN KEY(category_id) REFERENCES category (c_id))
- **cart** (c_id INTEGER NOT NULL, user_id INTEGER, product_id INTEGER, quantity INTEGER NOT NULL, total_cost INTEGER NOT NULL, PRIMARY KEY (c_id), FOREIGN KEY(user_id) REFERENCES user (u_id), FOREIGN KEY(product_id) REFERENCES product (p_id))
- **bought** (b_id INTEGER NOT NULL, user_id INTEGER, product_id INTEGER, quantity INTEGER NOT NULL,total_cost INTEGER NOT NULL, order_id INTEGER NOT NULL, PRIMARY KEY (b_id), FOREIGN KEY(user_id) REFERENCES user (u_id), FOREIGN KEY(product_id) REFERENCES product (p_id), FOREIGN KEY(order_id) REFERENCES "order" (o_id))

- **order** (o_id INTEGER NOT NULL, user_id INTEGER, total_cost INTEGER NOT NULL, PRIMARY KEY (o_id), FOREIGN KEY(user_id) REFERENCES user (u_id))
- **association** (order_id INTEGER NOT NULL, bought_id INTEGER NOT NULL, PRIMARY KEY (order_id, bought_id), FOREIGN KEY(order_id) REFERENCES "order" (o_id), FOREIGN KEY(bought_id) REFERENCES bought (b_id))
  Reasoning behind the database design:
    - **admin,user,category** and **product** hold the data for the manager ,customer , categories/sections in the shop and the products available in each section respectively.
    - **cart** holds the products that have been added to the cart by all the users . The foreign key **'user_id'** is used to map them to the users who added them to the cart.
    - After a customer confirms buying a set of products in the cart as an order .those products are moved from the **cart** table to the **bought** table
    - The **bought** table contains a foreign key **'order_id'** which is used to group the records of **bought** as part of a single order in the table **order**.

Architecture and Features

The root directory contains 4 subdirectories - **application ,static,templates,instances**,**.venv** and 3 files- **readme.txt ,requirements.txt** and **app.py**

Controllers**: application/controller1.py ,application/controller2.py**

Model: **application/models.py**

App.py is the main application,readme.txt contains steps to run the application,instances directory contains the SQlite database file ,application folder contains the model and controllers.

Features implemented:
- Separate login for Customer and Manager
- New customers can register
- CRUD for categories(Inventory management)
- CRUD for products(product management)
- Visual Summary of volumes sold and revenue generated by categories

Video

https://drive.google.com/file/d/1bz4tdhsQ9CQdnB8y3LIb6VdtVh_6WFqQ/view?usp=sharing