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Description

This is a QuizMaster app, that can have one admin that creates and manages quizzes and multiple users that can attempt said quizzes.

Technologies used

The technologies used are:
Python3
Flask
SQLite
HTML
CSS
Bootstrap5
Matplotlib
Jinja2

DB Schema Design

Key Features of the Schema:

1. Hierarchical Structure: Subject → Chapter → Quiz → Question
2. User Authentication: Supports both regular users and admins
3. Quiz Performance Tracking: Scores table records user performance
4. Cascading Deletion: Delete operations cascade through the hierarchy

Relationships:

- One Subject has many Chapters
- One Chapter has many Quizzes
- One Quiz has many Questions
- One Quiz has many Scores (from different users)
- One User has many Scores (from different quizzes)

```
User (1) ----< (∞) Score (∞) >---- (1) Quiz
                                          |
                                      | (1)
                                          |
                                         V
                                        (∞)
                                   Question
                                          Λ
                                          |
                                       | (∞)
                                          |
                                 Chapter (1)
                                          Λ
                                          |
                                       | (∞)
                                          |
                                 Subject (1)
```

API Design

- **Authentication:**
  - /api/login (POST): Verifies credentials via flask_login and returns a response.
  - /api/signup (POST): Hashes and stores user details in SQLite.
- **Data Retrieval:**
  - /api/users (GET): Returns all registered users (admin access only).
  - /api/user/<id> (GET): Fetches details of a specific user.

Architecture and Features

The DataBase is stored in model.py, All the app routes, and other flask functionality is stores in app.py, all the html templates are stored in a folder called templates, and a single css styling sheet is in styles.css stored in static

The app has options to edit add and delete the quiz from the admin panel, the admin can view quiz summaries as well

The use can attempt quizzes that are times and view their scores and performance

Video

https://drive.google.com/file/d/1Bz8A2QyjSgdGIGeq-nTTywDP8_uc1eMq/view?usp=drive_link