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Greetings everyone, I am pleased to introduce myself as Astitva Agarwal, currently enrolled in The BS in Data Science and Programming at IIT Madras. As part of the Modern Application Development 1 project, I have made a multi-user app Quiz Master.

Project Description

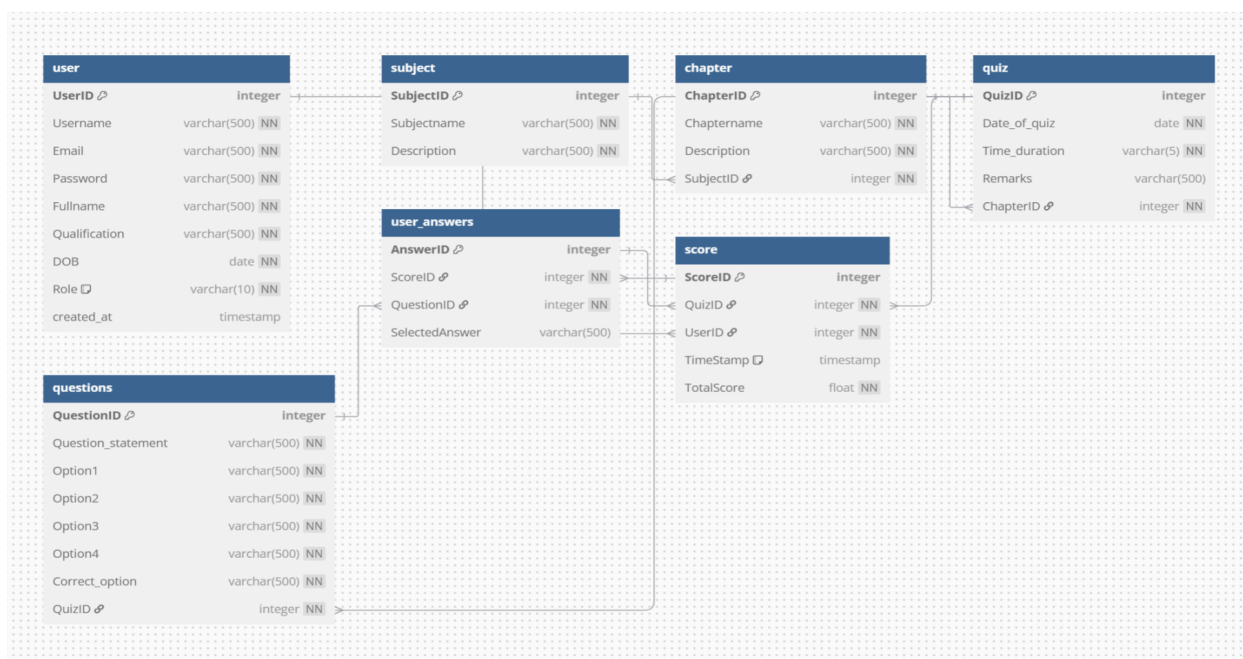
Quiz Master V1 is a multi-user quiz application developed as part of the Modern Application Development 1 course. The project enables users to participate in quizzes. Admin can Create, edit/delete, Manage quizzes, Chapters, subject, Questions. The system supports user authentication, question management, real-time scoring, Timer with auto-submit.

Technologies Used

- **Backend:** Flask (Python)
- **Database:** SQLite (from flask_sqlalchemy :- SQLAlchemy)
- **Frontend:** Jinja2 templating, HTML, CSS, Bootstrap
- **Flask Extensions:** Flask, render_template, request, redirect, url_for, session, flash, jsonify, send_from_directory.

DB Schema Design

The schema is organized relationally to ensure data integrity and efficient querying. Foreign keys establish clear relationships between entities. User's answers are efficiently saved and can be fetched for the user to view past quiz scores.



API Design

The API provides endpoints for retrieving subjects, chapters by subject ID, quizzes by chapter ID, and scores by user ID. Implemented using Flask routes returning JSON responses.

API routes used : - /api/subjects , /api/chapters/1 , /api/quizzes/1 , /api/scores/1 .

Architecture and Features

Architecture : In my project folder named Quiz_Master , there are 2 folders "template" for storing html pages and "Static" for storing the static files used in the app like images. The project folder also contains app.py file which stores all the flask routes for the user and the admin ,and models for database , it also contains mydatabase.sqlite3 file which contains all the sql tables for the apps database .

General:

- Separate User and Admin login , Signup for new Users .
- Convenient logout button for both administrators and users.

Admin Functionalities :


- Admin can manage Subjects , chapters, quizzes , questions on Dashboard with all the CRUD Operation .
- Search functionality within the dashboard, offering filters for Subject and quizzes .
- View Users option is placed on navigation bar clicking which admin will be redirected to user info page on which admin can see every registered user with its username , email , qualification and role (admin/user)
- Summary page shows charts for Quiz statistics (number of attempts for each quiz) , and User Quiz Participation (number of quizzes each user took) .

User Functionalities :

- Users can see available subjects and Quiz on the dashboard .
- Users can take the Quizzes according to the date given to the quiz if the deadline is passed user cant give that quiz .
- Timer is implemented for every quiz for the time duration specified by admin , if the user does not submit the quiz in time the quiz will auto submit after the timer reaches 0.
- User can view Scores of all the attempted quizzes , user can view answers to see the option user choose and the correct option for each question in the particular quiz , if user score less than 40 % marks a retake quiz option will be available , upon clicking user will be redirected to the same quiz otherwise passed will be shown .
- Search functionality within the dashboard, offering filters for Subject and quizzes .
- Summary page shows User performance over time for the attempted quiz .

VIDEO Link

Video demonstration of my project is available here: -

 Project_Video.mp4