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Project Statement:

Quiz Master - V1 is a multi-user exam preparation platform designed to help students practice quizzes based on different subjects and chapters. It includes role-based access for users and administrators, quiz management, scoring, and analytical insights through summary charts.

Technologies Used:

- Python
- Flask
- Flask SQLAlchemy
- Flask-Login
- Jinja2 Templates
- Bootstrap for HTML and CSS Styling
- SQLite for Data Storage
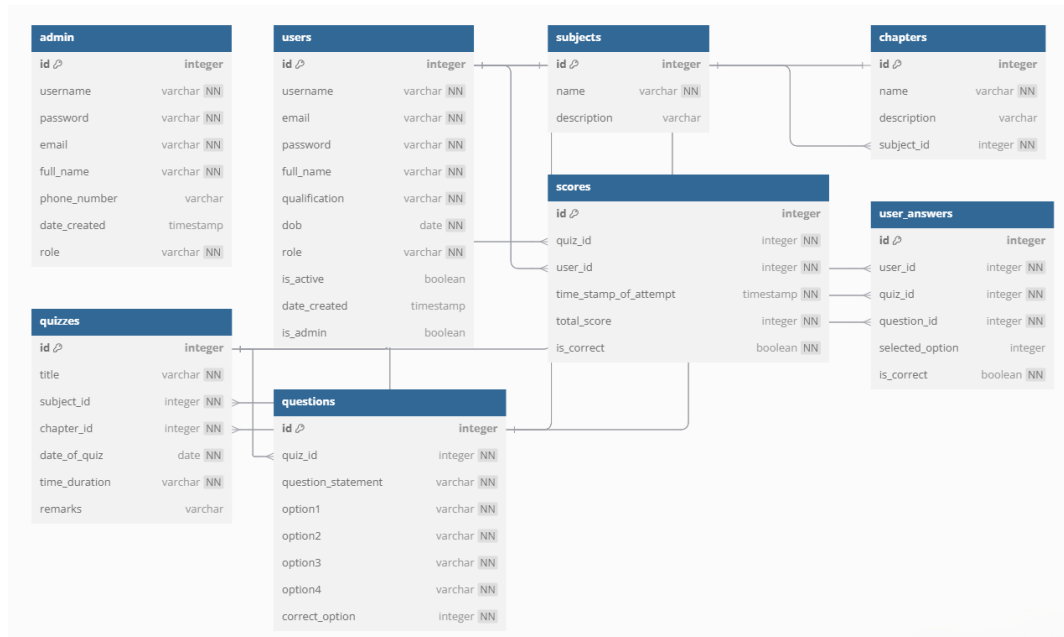- Chart.js for Data Visualization

Database Schema:

The database comprises the following entities:

1. **Admin**
   a. Stores admin details
   b. Key fields: `id, username, email, password, full_name, phone_number, date_created, role`

2. **User**
   a. Stores user details and authentication information
   b. Key fields: `id, username, email, password, full_name, qualification, dob, role, is_active, date_created, is_admin`

3. **Subject**
   a. Represents different subjects
   b. Key fields: `id, name, description`
   c. Relation: One-to-Many with `Chapter, Quiz`

4. **Chapter**
   a. Represents chapters within a subject
   b. Key fields: `id, name, description, subject_id`
   c. Relation: One-to-Many with `Quiz`

5. **Quiz**
   a. A quiz under a specific chapter
   b. Key fields: `id, title, subject_id, chapter_id, date_of_quiz, time_duration, remarks`
   c. Relation: One-to-Many with `Question, Score, UserAnswer`

6. **Question**
   a. Represents a question in a quiz
   b. Key fields: `id, quiz_id, question_statement, option1, option2, option3, option4, correct_option`
   c. Relation: One-to-Many with `UserAnswer`

7. **Score**
   a. Stores user quiz attempts and scores
   b. Key fields: `id, quiz_id, user_id, time_stamp_of_attempt, total_score, is_correct`

8. **UserAnswer**

a. Stores user responses for each question in a quiz
b. Key fields: `id`, `user_id`, `quiz_id`, `question_id`, `selected_option`, `is_correct`

ER Diagram:

The Entity Relationshi[p Diagram below shows the DataBase schema and relationship:

Architecture Design:

The project follows the **Model-View-Controller (MVC)** architecture:

1. **Controllers:** Contains route handlers for Home, `Admin` and `User` functionalities.
2. **Templates:** Contains Jinja2 HTML templates structured into subfolders.
3. **Models:** Defines database models as per the schema.
4. **Static:** Contains Images, CSS and JavaScript files.
5. **Database:** SQLite database file.
6. **Application:** Configuration files.

Main Features and Functionality:

Admin Controls:

- Manage subjects, chapters, quizzes, and users.
- View detailed analytics through summary charts.
- Monitor quiz participation and user performance.

Users:

- Register and log in to take quizzes.
- View past quiz scores and performance.
- Profile section to update personal details and change passwords.
- Summary charts displaying quiz performance and statistics.

Video Link:

Link To Video

[https://drive.google.com/file/d/1-U62BpfIovZoIIgEQvImaFLGwSX0NGMu/view?usp=sharing]

This report provides an overview of **Quiz Master - V1**, covering its functionality, database schema, and implementation details.