Author

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Description

This project focuses on creating a quiz application that serves as a platform for admins to create,delete or edit quizzes and to also manage different users. While users are able to attempt the quiz, track their progress. This ensures smooth interactions and also a well organized dashboard.

Technologies used

The different technologies used here are,
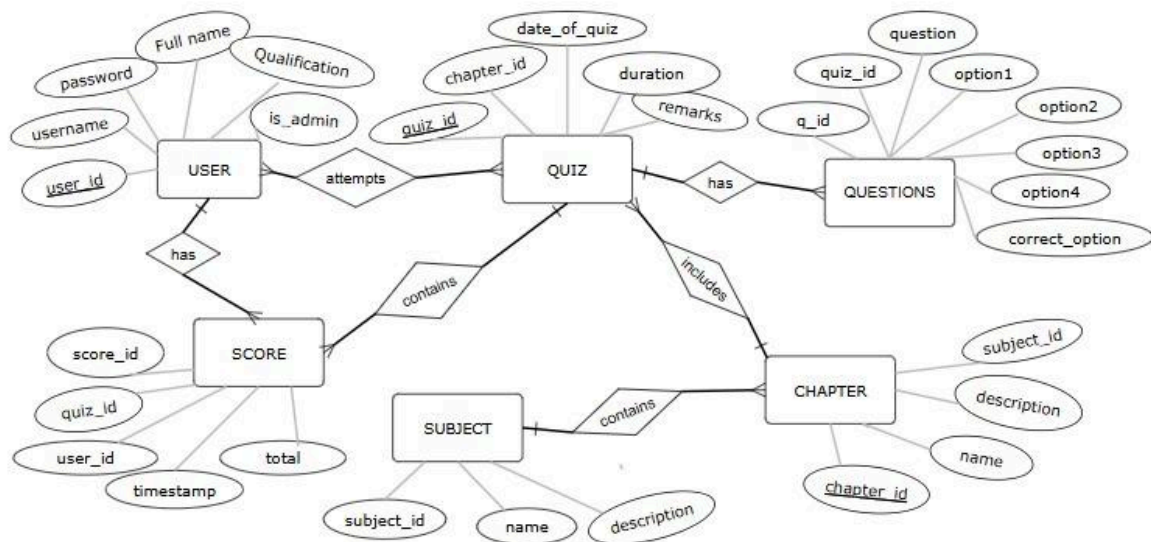**BACKEND:** flask,python
FRONTEND: jinja,html,css and bootstrap
DATABASE: sqlite3
Flask Extensions: Flask-SQLAlchemy, Flask- Migrate

- **Flask**: Lightweight and efficient for handling web requests.
- **Flask-SQLAlchemy**: Simplifies database interactions.
- **Jinja2**: Allows dynamic content rendering in templates.
- **Bootstrap**: Provides a responsive UI with pre-styled components.
- **HTML:**Defines the structure and content of web pages.
- **CSS:**Styles and formats the HTML elements to create an attractive, user-friendly interface

DB Schema Design

API Design

I have not used any API while designing this application. I have built using flask primarily.

Architecture and Features

- **Controllers:** This application is structured like all Python logic is kept in a dedicated folder controller which includes files like auth_route.py for authentication, user_routes.py for user-specific functionality, admin_routes for admin functionality.
- The **models.py** file defines the database schema using SQLAlchemy, ensuring clear relationships among subjects, chapters, quizzes, and scores
- **Jinja2 templates** (such as dashboards, quiz pages, and summary views) are stored in the **templates** folder, allowing for **dynamic HTML** rendering
- **Static Folder** stores the css styling and also the image generated while creating graphs
- **Main.py file** initializes the Flask app, loads configurations, and registers routes, making the codebase easy to navigate and maintain.

Features:

- **User and Admin Roles:** Users can register, log in, attempt quizzes, and view scores, while admins manage subjects, chapters, quizzes, and questions.
- **Quiz Management:** Admins can create, edit, and delete subjects, chapters, quizzes, and questions; users see upcoming quizzes on their dashboard and are allowed only one attempt per quiz.
- **Search Functionality:** Both admin and users can search for relevant items (admin: users, subjects, quizzes, questions; user: subjects and quizzes).
- **Summary Reports:** Admins see a summary table and chart of all user attempts per subject, while users see their total scores per subject.

Video

https://drive.google.com/file/d/1YaWoTC0jPejXrNScyDJCRWDZTpp7296C/view?usp=sharing