

QUIZ MASTER

Final Project Report

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About me -

DESCRIPTION OF PROJECT

This a quiz master web app which is library may operate more efficiently by managing books, users, transactions, and comments with the use of a Library Management System, a comprehensive software solution. With tools for managing user accounts, cataloguing books, processing loan and return procedures, gathering feedback, and more, this system meets the demands of users, librarians, and administrators.

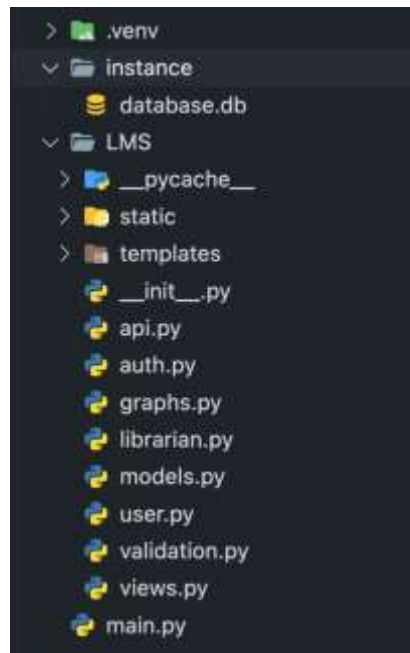
TECHNOLOGIES USED

- **Flask:** Backend framework for building the web application.
- **SQLAlchemy:** Object-Relational Mapping tool for database interactions.
- **SQLite3:** Database management system for storing application data.
- **HTML/CSS/JavaScript:** Frontend technologies for user interface design and interactivity.
- **Flask-Login:** Extension for managing user sessions and authentication.
- **Datetime:** Python library for handling date and time operations.

ARCHITECTURE

Here, the app.py file contains the main code to run the webapp is a module which contains all the files for app. The description of are as follows

- **Config.py** – This file contains database connection credentials
- **Models.py** – This contains DB Classes
- **Routes.py** – This file contains all the routes (endpoints) of the webapp
- **Templates** – This contains all HTML templates for admin and Users



FEATURES

User Features:

- **User Registration & Login** – Secure authentication for users.
- **Quiz Attempt Tracking** – Users can attempt quizzes and their scores are recorded.
- **Personalized Summary** – Users can view their quiz attempts and performance.

Subject & Quiz Management:

- **Multiple Subjects & Chapters** – Supports different subjects, each with multiple chapters.
- **Quiz Creation & Management** – Admin can create and manage quizzes for different chapters.
- **Question Bank** – Each quiz contains multiple-choice questions with correct answers stored.

Admin Dashboard Features:

- **Subject-Wise Top Scores** – A **bar chart** displaying the highest scores per subject.
- **Subject-Wise Quiz Attempts** – A **pie chart** showing the number of quiz attempts per subject.
- **User & Quiz Management** – Admins can view users, quizzes, and performance stats.

Data Visualization:

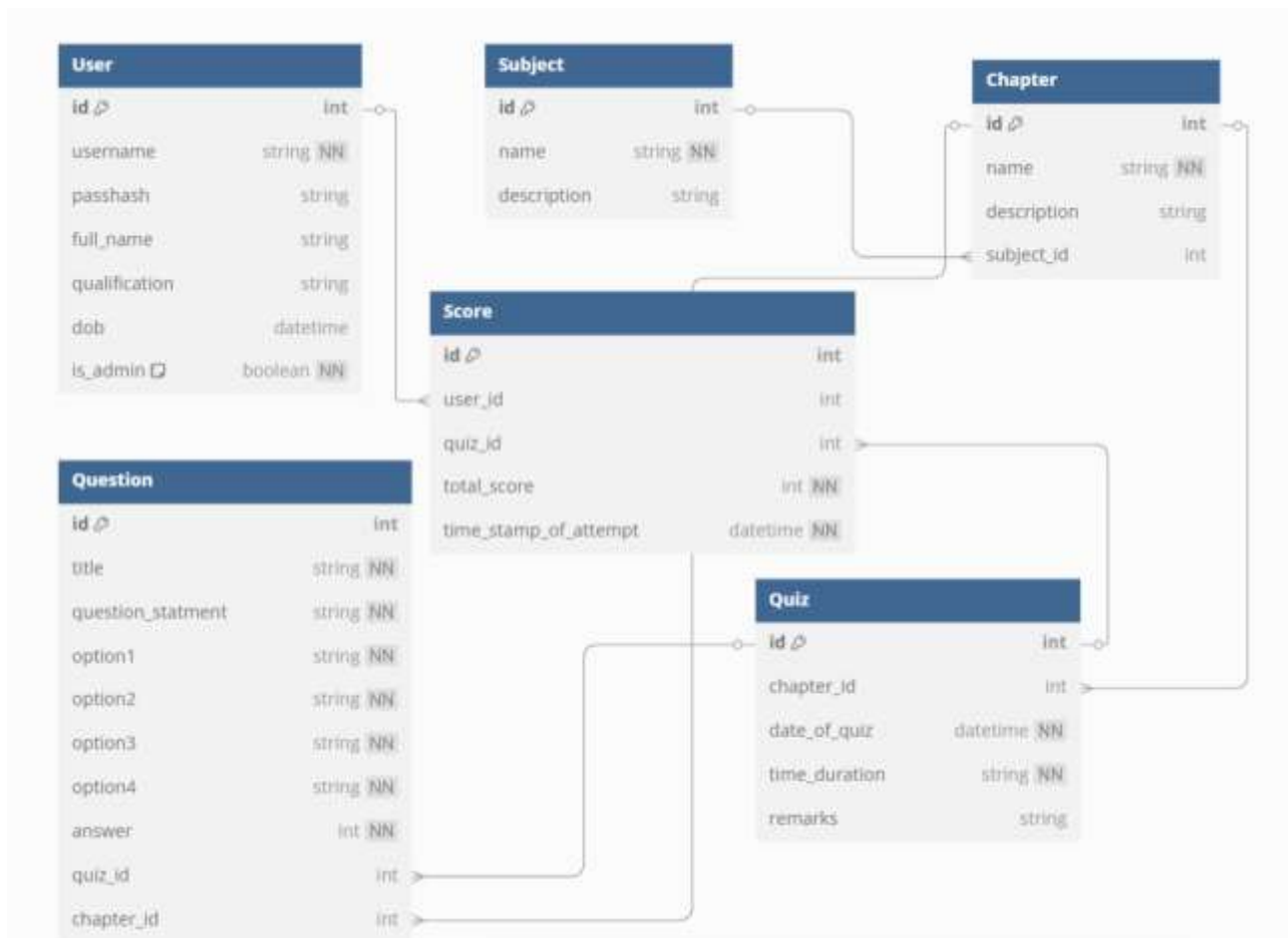
- **Charts & Graphs** – Uses **Chart.js** for interactive bar and pie charts.
- **User Summary Page** – Shows monthly and subject-wise quiz attempts.

Security & Performance:

- **Password Hashing** – User passwords are securely hashed before storage.
- **Role-Based Access** – Admins and regular users have different permissions.

DB SCHEMA DESIGN

The database schema consists of tables for users, subject, chapter, question, quiz, and score. Relationships are established between these tables to track user activities such as attempted quiz, quiz score. Each table contains relevant fields such as user details, subject information, chapter information, question information, quiz information and score recode which is useful to getting information.



FUTURE ENHANCEMENTS

- Implementing in-depth analytics with progress tracking over time.
- Display top scorers for each subject to encourage competition.
- Shuffle questions in quizzes to prevent memorization.
- Integrating email notifications, so that user get report, reminder etc. on his email.

VIDEO LINK

Video demonstration of my project is available here.

<https://drive.google.com/file/d/1vh2i2XRaovL6sj4rwyCP6NqnG1F5SDYK/view?usp=sharing>

THANK YOU