Author

SANJAY K
23F3003167
23f3003167@ds.study.iitm.ac.in
Hi, Myself Sanjay K aged 19, a diploma student in IITM BS Data Science Online Degree, pursuing this Degree as standalone. I am from TamilNadu. I am interested in Business and Marketing Management for which I took this Data science learning as a tool to expertise in this field.

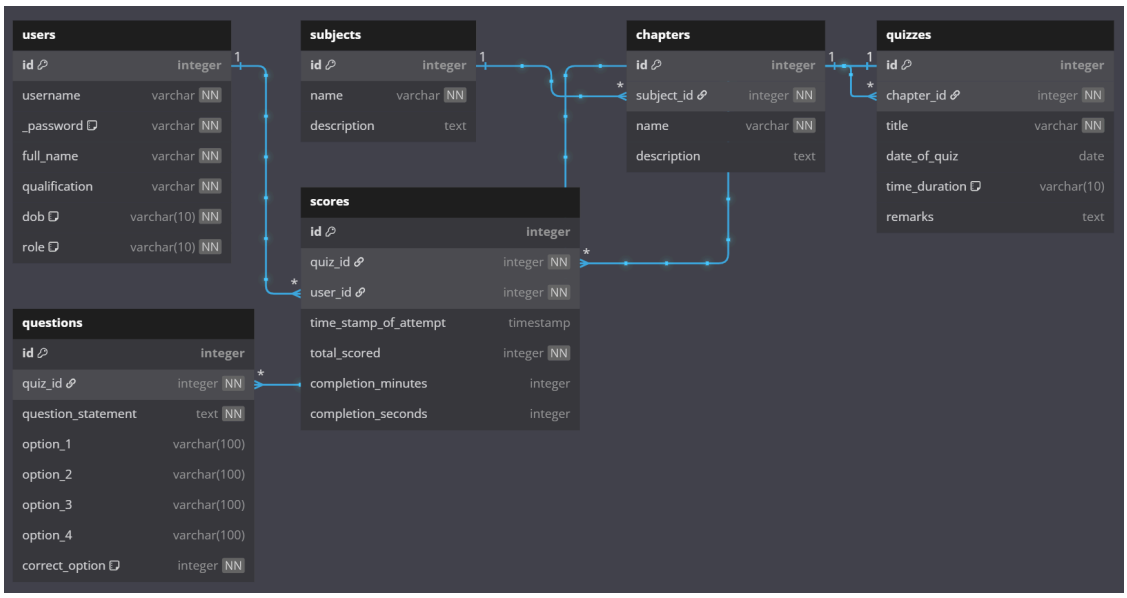
Description

As a part of my Data science journey, I am in the stage to apply my development knowledge through this MAD 1 project. Here, I have built a web application that focuses on improving quiz knowledge to all of its users.

Technologies used

- Flask Framework - lightweight microframework used for building this web application.
- SQLAlchemy - used for interacting with database using python language
- SQLite3 - used as database for this web application due to its simplicity
- HTML, JS - used for structuring and functioning of web pages
- Jinja2 - modern day templating language used for rendering dynamic content in HTML pages
- Chart.js - used to create bar charts for visualising data
- Bootstrap 5 - used for styling and designing purpose

DB Schema Design



User - Table handles authentication based on the role which is ‘user’ as default. The table stores the full name, email, password, qualification, date of birth of the user.

Subject - Table stores name and description of the subject created by the Admin. It has a primary key ‘id’ also used as foreign key in the Chapter table

Chapter - Table stores name and description of the chapter created by the Admin. Each subject can have many chapters and therefore exists one-many relationships. It has a primary key ‘id’ also used as foreign key in the Quiz table. This table uses a backref relationship with the Subject table.

Quiz - Table stores Title, Quiz date, Duration of Quiz, Remarks created by the Admin. Each Chapter has many quizzes. It has a primary key ‘id’ also used as foreign key in the Question and Score table. This table uses a backref relationship with the Chapter table.

Question - Table stores Question statement, four options and correct option created by the Admin. Each Quiz can have one or many Questions. This table uses a backref relationship with the Quiz table.

Score - Table stores timestamp of attempt, Scores, Completion minutes and seconds when a user completes attempting the quiz. It has user_id and quiz_id as foreign keys to store the user and quiz information. The table used for tracking performance. This table uses a backref relationship with Quiz and User table.

- **index=true** - used on foreign keys for faster lookups
- **ondelete=’CASCADE’** - used as foreign key behaviour for cascading deletion
- **lazy="dynamic"** - used to return a query object, not a list

Architecture and Features

My root project folder named **quiz_master_23f3003167** has three folders, app.py and models.py python files and README.md file. The folders are controllers (consists of admin, auth and user python files for route definitions), templates (consists of all HTML files) and instance (consist of database file). README file that explains how to run the code.

Users can register, login and logout securely and attempt quizzes within a time limit and countdown timers. Users can view scores, quiz summary and search for subjects and quizzes. Admin can login and be able to create subjects, quizzes and questions. Admin can see Information and Quiz Performance of the users and search for Users, subjects, quizzes and questions.

Video

https://drive.google.com/file/d/1TxqbqM1BDP9gwg9pqKrUOpReev2ImncO/view?usp=sharing