Name : Pal AmitKumar Shish
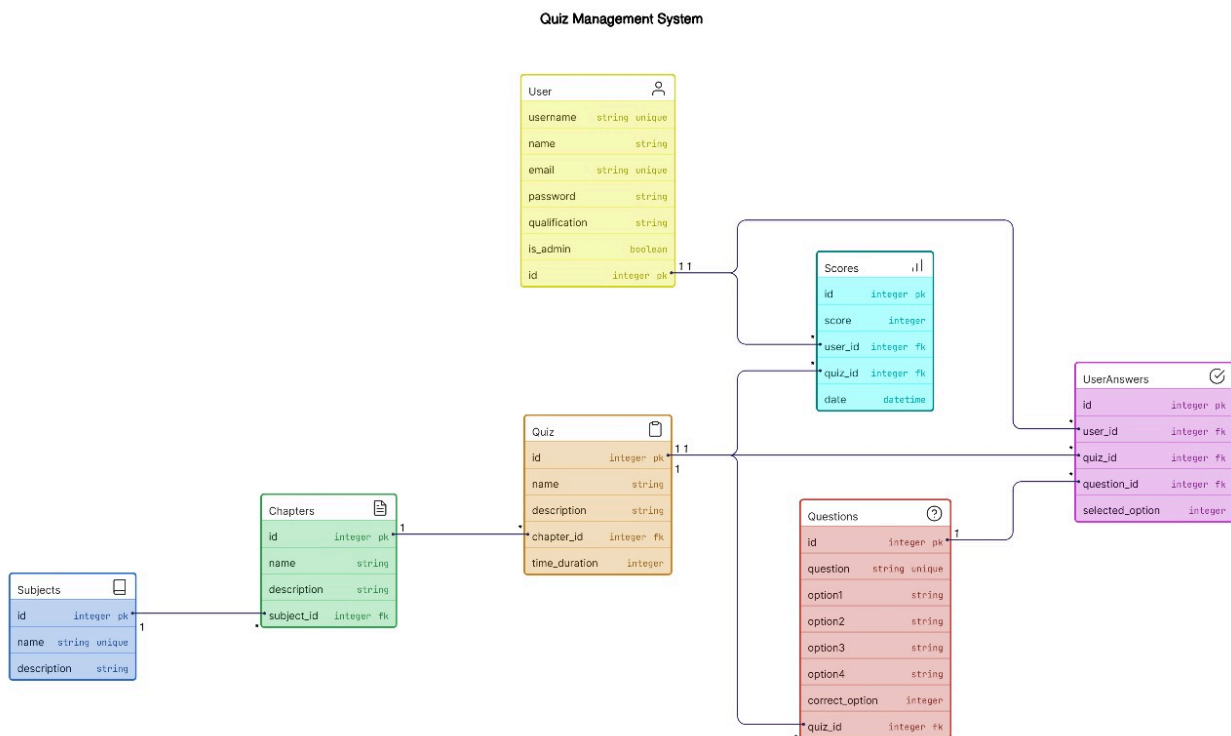**Roll no :** 21f1006870
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About me : Apart from being a diploma level student at IIT Madras Bs Degree. I am a graduate in statistics. My interest lies in the domain of ai and ml and currently gaining experience as an equity analyst intern.

Description

Quiz Master is a multi user application. Where users can test their knowledge by attempting quizzes of various subjects and review quizzes. Admin can create/update/delete subjects/chapters/quizzes and questions and also check summary such as daily attempts, quiz distributions, average quiz scores etc.

DB Schema

Technologies Used

Flask : A lightweight backend framework for building web applications with Python.
SQLAlchemy : ORM (Object-Relational Mapping) tool for database interactions.
SQLite : Database management system for storing application data.
Vue.js: A progressive JavaScript framework for building user interfaces and enhancing interactivity.

Flask JWT Extended: An extension that provides tools for managing user sessions and authentication using JSON Web Tokens (JWT).

Flask Restful: A Python library that simplifies the creation of RESTful APIs for web applications.

Redis: An in-memory data structure store used as a caching database to optimize application performance.

ChartJS: Used for creating charts on the admin dashboard.

Structure

Root Directory (`QUIZ-MASTER-V2/`)

Contains the main project files, including the backend and frontend directories.

1. Backend (`backend/`)

This folder contains the Flask API and related services.

- **`api.py`** →API routes for the backend
- **`config.py`** → Stores configuration settings (e.g., database, Redis).
- **`main.py`** → Entry point for running the Flask application.
- **`models.py`** →this file contains all models.
- **`instance/`** → contain SQLite database).

2. Frontend (`frontend/`)

This folder contains the Vue 3-based frontend.

- **`components/`** → Vue components for building the UI.
- **`app.js`** → Main JavaScript file for initializing the Vue app.
- **`index.html`** → The main HTML file for rendering the frontend.

3. Other Files

- **`README.md`** → Contains the instructions on how to execute the application.
- **`req.txt`** →contains a list of packages for the functioning of the application.

API Endpoints

API Name	Endpoints
UserRegistration	/api/register

UserLogin	/api/login
UserLogout	/api/logout
SubjectList	/api/subjects
SubjectDetails	api/subjects/<int:subject_id>/
ChapterList	api/subjects/<int:subject_id>/chapters
ChapterDetails	api/subjects/<int:subject_id>/chapters/<int:chapter_id>
QuizList	api/chapters/<int:chapter_id>/quizzes
QuizDetails	api/chapters/<int:chapter_id>/quizzes/<int:quiz_id>
QuestionList	api/quizzes/<int:quiz_id>/questions
QuestionDetails	api/quizzes/<int:quiz_id>/questions/<int:quiz_id>
QuizApi	api/quiz/<int:quiz_id>
QuestionApi	api/quiz/<int:quiz_id>/questions
AttemptedQuiz	api/attempted/quizzes
SubmitQuiz	api/quiz/<int:quiz_id>/submit
ReviewQuiz	api/quiz/<int:quiz_id>/review
SearchApi	api/search
Summary	api/summary

Features

- All CURD(Create,Update,Read,Delete) operations for subjects, chapters, quiz and questions where the admin can create, update, read and delete.
- Search functionality where admin can search based on subject, chapters and quiz.
- Summary where admin can visualize statistics of application.
- Users can attempt time based quizzes.
- Users can check their previously attempted quizzes and review them.
- Implemented caching.

Video Report

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