

Student Details:

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Project Details:

Project Title: Quizzzy

Objective:

Develop a multi-user quiz application that serves as an exam preparation platform for multiple courses. The system should include administrator controls to manage content and user data, while users can take quizzes, track their performance, and prepare effectively.

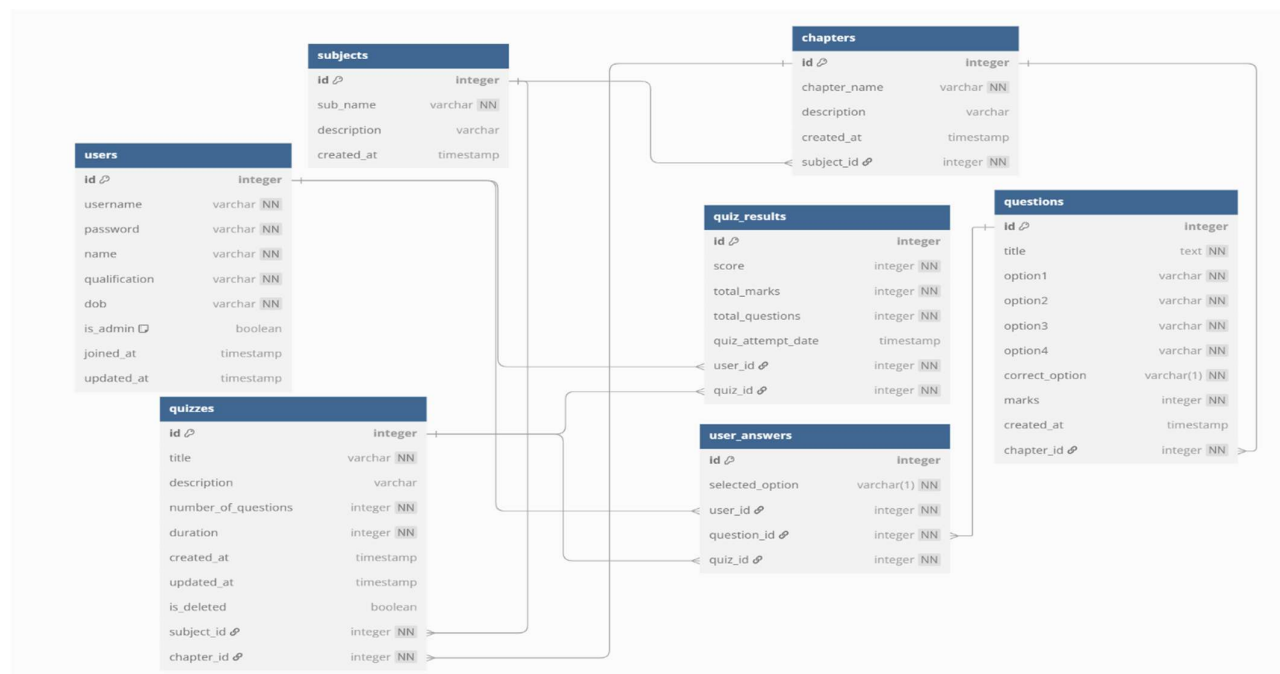
Project Description:

The **Quizzzy** application supports two types of users: administrators and regular users. Administrators manage subjects, chapters, quizzes, and questions, while users participate in quizzes for different courses to test their knowledge and track progress. The platform ensures data integrity, supports soft deletion of quizzes, and records user attempts for performance analysis.

Frameworks and libraries used:

- **Flask:** Flask for backend development
- **Jinja2** was used for templating and HTML generation.
- **Bootstrap 5** was used for styling and designing purpose.
- **Flask-SQLAlchemy** for database handling
- **SQLite** for data storage
- **JavaScript** for timer, subject and chapter selection for quiz.
- **Matplotlib** is used for generating the insights user quiz attempts, progress and summary of users with the help of histogram plots.

ER-diagram:



Database Schema Design:

- **User table:** id is **PRIMARY KEY** and **AUTO-INCREMENTED**. All attributes are **NOT NULL**, with is_admin having a default value of **False**. This table uses a **backref relationship** with the **QuizResult** and **UserAnswer** tables.
- **Subject table:** id is **PRIMARY KEY** and **AUTO-INCREMENTED**. All attributes are **NOT NULL**, with sub_name marked as **UNIQUE**. This table has a **one-to-many relationship** with the **Chapter** and **Quiz** tables.
- **Chapter table:** id is **PRIMARY KEY** and **AUTO-INCREMENTED**. All attributes are **NOT NULL**. subject_id is a **FOREIGN KEY** from the **Subject** table. This table uses a **backref relationship** with **Question** and **Quiz** tables.
- **Question table:** id is **PRIMARY KEY** and **AUTO-INCREMENTED**. All attributes are **NOT NULL**, including four options (option1 to option4) and correct_option. chapter_id is a **FOREIGN KEY** from the **Chapter** table. This table uses a **backref relationship** with the **UserAnswer** table.
- **Quiz table:** id is **PRIMARY KEY** and **AUTO-INCREMENTED**. All attributes are **NOT NULL**. subject_id and chapter_id are **FOREIGN KEYS** from the **Subject** and **Chapter** tables, respectively. is_deleted has a default value of **False** to support **soft deletion**. This table uses a **backref relationship** with **QuizResult** and **UserAnswer** tables.
- **QuizResult table:** id is **PRIMARY KEY** and **AUTO-INCREMENTED**. All attributes are **NOT NULL**. user_id and quiz_id are **FOREIGN KEYS** from the **User** and **Quiz** tables, respectively.
- **UserAnswer table:** id is **PRIMARY KEY** and **AUTO-INCREMENTED**. All attributes are **NOT NULL**. user_id, quiz_id, and question_id are **FOREIGN KEYS** from the **User**, **Quiz**, and **Question** tables, respectively.

Relationships in Database:

One-to-Many relationships:

- **User** → **QuizResult** and **UserAnswer**
- **Subject** → **Chapter** and **Quiz**
- **Chapter** → **Question** and **Quiz**
- **Quiz** → **QuizResult** and **UserAnswer**

Folder Structure:

```
/quiz_master_23f3000080
|
├── /static
|   ├── /css
|   └── /images
|
├── /templates
|   ├── /admin_side
|   └── /user_side
|
├── .env.share
├── .gitignore
├── app.py
├── crud_routes.py
├── models.py
├── requirement.txt
└── routes.py
```

Video Link:

https://drive.google.com/file/d/1PydqduqAWvcfw3kU_ZSVw_XQXPRkKg2Q/view?usp=sharing