

Quiz Master Application Report

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I am Tirthankar Dey, a dual-degree pursuer currently in the Diploma level of the BS Degree in Data Science and Applications at IIT Madras and also pursuing a B.Tech in Computer Science Engineering in Kolkata. I have a keen interest in Java, programming, and learning Machine Learning.

Description:

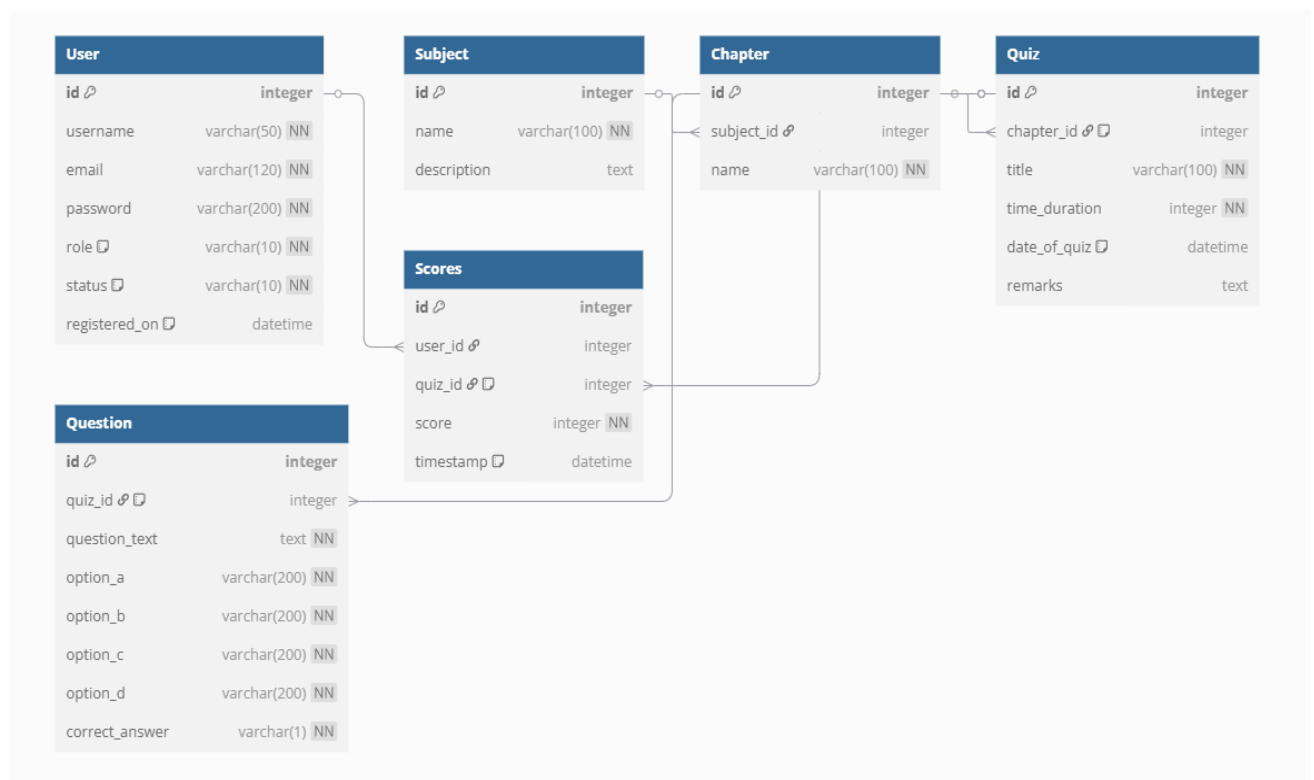
The project required building a multi-user quiz application with admin and user roles. Admin can create/manage subjects, chapters, quizzes, and questions, while users can take quizzes and view scores.

Technologies Used:

- Flask (Backend framework)
- SQLite (Database)
- Bootstrap (Frontend styling)
- Jinja2 (Templating)
- Matplotlib (Data visualization)

Flask was chosen for its simplicity, SQLite for lightweight data storage, Bootstrap for responsive design, and Matplotlib for generating charts without external libraries.

DB Schema Design (with respect to models.py):



API Design:

APIs implemented for:

- Subject management (CRUD)
- Quiz management (CRUD)
- Score retrieval

Architecture and Features:

The project follows MVC pattern: This project follows the MVC (Model-View-Controller) pattern, where Flask handles the Controller, SQLite serves as the Model, and Jinja2 templates with HTML, CSS, and Bootstrap form the View, ensuring a clear separation of concerns for better maintainability and scalability.

- Controllers: app.py (routes)
- Models: models.py (database schema)
- Views: templates/*.html (Jinja2 templates)

Key Features:

- Admin Dashboard: Manage users/subjects/quizzes
For Example: Subject API
 - GET /manage_subjects - List all subjects
 - POST /create_subject - Create new subject
 - POST /edit_subject/<id> - Edit subject
 - GET /delete_subject/<id> - Delete subject
- User Quiz Interface: Take timed quizzes
- Visualization: Score charts using Matplotlib
- Search Functionality: For users/quizzes

Default features implemented as specified. Additional features include performance comparison charts and responsive design.

Video(link):

Here is the link of my presentation:

[Press here for the link](#)