Modern Application Development-1 Project Report

Author

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Description: I am a dual degree student pursuing BTECH in CSE from Narula Institute of Technology, Kolkata and BS in Data Science and Application from IIT-Madras.
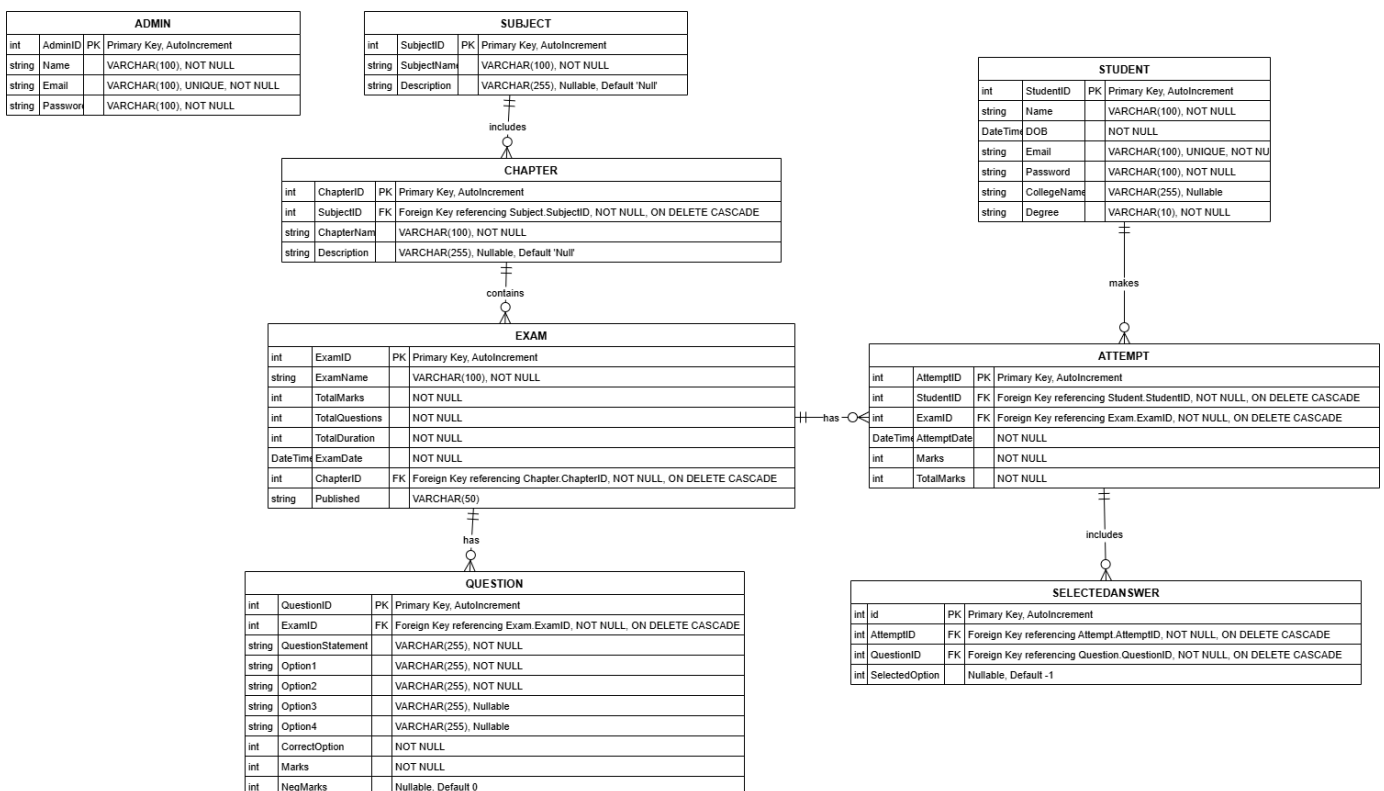
Description

This Project is a python flask framework-based Quiz-management portal where an admin can create subjects and corresponding chapters, on which exams will be created. Student are able to attend quizzes whose deadline has not passed yet and check their scores summary.

Technologies Used

Python, Flask, Flask-Migrate, SQLAlchemy, Jinja2, HTML, CSS, JavaScript, Chart.js

Database Schema Design

- **Admin** – Stores data for admin, contains pre-populated login credential
- **Subject** – Stores subject details. It is related to Chapter table, and if subject is deleted all related records are deleted
- **Chapters** – Stores chapter details. It is related to Exam table, and if chapter is deleted all related records are deleted
- **Exam** – stores exam details and is related to every unique exam attempt by user (Attempt table) and every question in it (Question table)

- **Student** – stores student details and is related to Attempt table for each exam attempt. Deleting student removes all attempts
- **Attempt** – stores essential details of exam, student and the exam score to fetch previous exam attempts of a particular student
- **Selected Answer** – stores user's choice for each question in one attempt

Architecture and Feature

Structure

```
/quiz_master_v1
|———/app
        |———/admin
                |- routes.py
        |———/student
                | - routes.py
        |———/templates
                |———/admin
                        |- admin html pages...
                |———/student
                        |- student html pages …
                |- base files….
        |- __init__.py
        |-models.py
        |-routes.py
|———/instance
        |-quiz_master.db
|———/migrations
|-app.py
|-README.md
|-requirements.txt
```

I have used 3 blueprint, main for login routing along with student_bp and admin_bp to handle student and admin processes simultaneously

Highlighting the features include:
- Admin can
  - View/Create/Update/Delete subjects
  - View/Create/Update/Delete chapters
  - View/Create/Update/Delete exams
  - View/Create/Update/Delete questions
  - View/Delete students
  - View/Delete attempts
  - View platform statistics in summary page
- Student can
  - View/Attempt exams
  - View exams that have passed deadline but cannot attempt
  - View past exam attempt scores
  - View student summary of subject wise score average and time vs score data
- Exam has a timer which when runs out will end exam
- All users can search entries by given filters

Video

A demonstration video of the project can be accessed here:
https://drive.google.com/file/d/1E2IQemqCWRfqfiRJL5xxy60tJ98K11sy/view?usp=sharing
File name: 22f3000947 Mad 1 Project Report video