

# Quiz Master Project Report

**Author :**

**Bhushan Dattatray Sonawane**

Roll No : 23f2003210

Student Email : [23f2003210@ds.study.iitm.ac.in](mailto:23f2003210@ds.study.iitm.ac.in)

I am A Diploma Level Student of BS Degree in Data Science And Application At IIT Madras

**Description :**

The aim of this project is to develop a Quiz Master Application that enables users to take quizzes on various subjects. The system provides an interactive user interface for both users and administrators. Users can attempt quizzes, view scores, and track progress, while administrators can manage quizzes, users, and analyze results. Search Functionality for Both Admin and the User is Available In the Dashboards.

The system provides data visualization features, where users can see their scores and rankings through graphs and charts. The Admin dashboard offers insights into subject-wise top scores and user attempts, represented using Matplotlib and Seaborn

**Technologies Used :**

- **Frontend** : HTML, CSS, Bootstrap for styling and responsiveness
- **Template Engine** : Jinja2 for dynamic HTML template rendering
- **Backend** : Flask framework with SQLAlchemy ORM
- **Database** : SQLite for data storage
- **Data Visualization** : Matplotlib and Seaborn for generating charts
- **IDE** : Developed using Visual Studio Code with a virtual environment

**Architecture And Features :**

The project has an application folder in the root directory that contains:

- **Templates folder** : Stores all HTML templates.
- **Static folder** : Contains CSS files and images.
- **Instance folder** : Holds the SQLite database file for Quiz Master Application.
- **Models Folder** : All the Database Tables Defined here in a **Models.py** File.
- **Routes folder** : Houses Python files for controllers and logic.
- **Main.py** : The primary file to run the application.

Functionalities :

- **User Dashboard**: Users can view available quizzes, attempt them, and track their scores.
- **Admin Dashboard**: Admins can create, edit, and delete Subjects, Units, Quizzes, Questions. Also Manage All Users.
- **Scoring System**: Users receive immediate feedback on quiz submissions.

- **Search Functionality:** Users and Admin can search by Subject,Unit,Quiz.
- **Data Visualization:** Graphs,Pie Charts displaying various information on both User and Admin dashboards

Optional Functionality :

- **Profile Edit :** Users are able to Edit their Profile Details on the user dashboard.
- **Question Hints :** Admin can add Hints to the questions.
- **UI :** Beautiful and Responsive User Interface.

## DB SCHEMA Design :

### 1. Users Table

Column Name	Type	Constraints
id	Integer	Primary key, Auto Increment
email	String	Not null, unique
password	String	Not null
full_name	String	Not null
edu_qualification	String	Not null
dob	String	Not null
if_admin	Boolean	Default False
is_flagged	Boolean	Default False

### 2. Subject Table

Column Name	Type	Constraints
id	Integer	Primary key, Auto Increment
subject_name	String	Not null, unique
description	String	Not null

### 3. Unit Table

Column Name	Type	Constraints
id	Integer	Primary key, Auto Increment
unit_name	String	Not null, unique
description	String	Not null
subject_id	Integer	Foreign key (Subject)

### 4. Quiz Table

Column Name	Type	Constraints
id	Integer	Primary key, Auto Increment
quiz_name	String	Not null
date	Date	Not null
duration	String	Not null
note	String	Nullable
unit_id	Integer	Foreign key (Unit)

### 5. Questions Table

Column Name	Type	Constraints
id	Integer	Primary key,Auto Increment
question	String	Not null
option_a	String	Not null
option_b	String	Not null
option_c	String	Not null
option_d	String	Not null

answer	String	Not null
hints	String	Nullable
quiz_id	Integer	Foreign key (Quiz)

## 6. Result Table

Column Name	Type	Constraints
id	Integer	Primary key,Auto Increment
score	Integer	Not null
user_id	Integer	Foreign key (User)
quiz_id	Integer	Foreign key (Quiz)
time_of_attempt	Integer	Not null

**Presentation Video Link :**

 **MAD 1 Project Demo.mp4**