**QUIZ\_GUI INTERFACE**

**Overview**

The Multi-Color Quiz System is a simple beginner friendly in python programming for an interactive quiz platform that allows users to register, log in, take timed quizzes, and view their scores. Administrators can manage questions, edit or delete existing ones, and maintain the scoreboard

**Key Features**

* User Authentication: Supports user registration and login via SQLite database (with a default admin account).
* Admin Control Panel: Includes features to add, edit, delete, and view questions, as well as manage or reset the scoreboard.
* Dynamic Quiz System: Displays random multiple-choice questions with colorful backgrounds and a 30-second timer per question.
* Real-time Feedback: Prompts the user whether an answer is correct or not and automatically moves to the next question.
* Score Management: Saves and tracks user scores along with timestamps.
* Visual Enhancements: Uses different color themes for better interactivity, and optionally displays question-related images.

**Technical Details**

* Programming Language: Python (version ≥3.7)
* GUI Library: Tkinter (standard Python library for GUI applications)
* Database: SQLite3 (local file-based storage for users, questions, and scores)
* Modules Used:
  + tkinter and tkinter.messagebox for interface and dialogues
  + sqlite3 for database connectivity
  + random for question randomization
  + datetime for timestamping quiz results

**Application Flow**

1. Login / Register Screen:  
   Users can log in or create an account. Admin uses specific credentials (default: admin/admin).
2. Admin Panel:  
   Lets administrators manage the quiz content—add new questions, edit or delete old ones, and view all questions in a scrollable window.
3. Quiz Screen:  
   Loads random questions from the database, displays options with color-coded radio buttons, counts down 30 seconds per question, and validates answers.
4. Scoreboard:  
   Displays all user scores in descending order, showing usernames, scores, and timestamps. Admin can reset or delete individual entries.