**Documentation for Conceptile’s Python Intern Take-Home Assignment**

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**1. Project Structure:**

**A screenshot of a computer

Description automatically generated**

**2. Setup Instructions:**

**2.1. Clone the Repository**

Ensure you have Python (3.8 or later) installed on your system. Clone the repository and navigate to the project directory:

*git clone <repository-url>*

*cd <project-directory>*

**2.2. Set Up Virtual Environment**

Create and activate a virtual environment:

*python3 -m venv venv*

*source venv/bin/activate*

**2.3. Install Dependencies**

Install the required Python packages; can be found in requirement.txt file.

**2.4. Populate the Database**

Use the insert\_data.py script to populate the SQLite database with questions:

*python3 insert\_data.py*

**2.5. Run the Application**

Start the Flask development server:

*python app.py*

By default, the application runs at http://127.0.0.1:5000.

**2.6. Access the Application**

Open your web browser and navigate to the provided link (e.g., <http://127.0.0.1:5000>).

**3. Application Features:**

**3.1. Dashboard (home.html)**

* Displays:
  + Total questions attempted.
  + Number of correct answers.
  + Performance score (percentage of questions answered correctly).
* Buttons:
  + **Take Quiz:** Navigates to the Quiz page.
  + **Reset Performance:** Resets user progress.

**3.2. Quiz Page (quiz.html)**

* Displays:
  + One random multiple-choice question from the DB.
* Actions:
  + Submit an answer.
  + After submission:
    - **Answer More:** Load another random question.
    - **End Quiz:** Redirect to the Dashboard.

**3.3. Result Page (quiz\_result.html)**

* Provides feedback (Correct/Incorrect) after answering a question.

**3.4. No More Questions Page (no\_more\_questions.html)**

* Message displayed when all questions in the database have been attempted.

**4. Edge Cases Handled:**

* **Session Reset:** User progress resets when a new session starts or on demand.
* **Exhausted Questions:** A dedicated page (no\_more\_questions.html) is displayed when no more questions remain in the database.
* **Form Validation:** Prevents submission of empty answers.
* **Random Questions:** Ensures questions are not repeated in a session.

**5. Styles and UI:**

* Styling is managed via the style.css file in the static directory.
* Easy/intuitive navigation ensures smooth transitions between screens.

**6. Future Improvements:**

* Add user authentication for personalized quizzes.
* Enhance UI/UX with animations and dynamic elements.
* Extend database capabilities for storing user scores across sessions.

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