Geography Quiz Application – Project Overview

This is an open-source Geography Quiz Application written in Python using the PyQt5 framework. The application helps users test their knowledge of world geography through multiple-choice questions, organized by difficulty (Easy, Normal, Hard). The codebase is modular, well-documented, and designed for easy extension and contribution.

🟢 How to Start

Main Entry Point: The main program file is:

geograph_with_buttons_3.py

To launch the application:

1. Make sure you have **Python 3.x** and **PyQt5** installed:
2. pip install PyQt5
3. Open a terminal in the project directory.
4. Run the application:
5. python geograph_with_buttons_3.py
6. The main window will appear, allowing you to select a quiz level and start the quiz.

🧱 Project Structure

geograph_with_buttons_3.py

Main launcher and user interface. Handles:

- Resource loading (icons, music, settings)
- Level selection (Easy, Normal, Hard)
- Starting the selected quiz by calling the appropriate module

Quiz Modules

- easy.py, normal.py, hard.py: Logic for the **first question** of each level.
- easy2.py to easy10.py, normal2.py to normal10.py, hard2.py to hard10.py: Logic for subsequent questions.
  - Each file:
    - Receives the current score and previous answers
    - Displays a new question and answer buttons
    - Updates the score and passes control to the next question

Results and Leaderboard

- marks.py or easy_marks.py: After the final question, these modules:
  - Display the user's score
  - Show which answers were correct or incorrect
  - Present a simple leaderboard

Resource Management

- The resource_path() function ensures that all assets (icons, music, settings) are loaded correctly in both development and packaged executable environments.

🔄 Program Flow

1. **Launch the Application:**
   - Run geograph_with_buttons_3.py. The main window appears.
2. **Select Quiz Level:**
   - Choose between Easy, Normal, or Hard.
   - The corresponding module is loaded, and the first question is displayed.
3. **Quiz Progression:**
   - Each question appears in a new window with four answer buttons.
   - After answering, the next module is called, carrying forward the user's score and answer history.
   - This continues until the 10th question.
4. **Results and Leaderboard:**

- After the last question, the results screen appears.
- Displays:
    - Total score
    - Correct/Incorrect breakdown
    - Leaderboard (if applicable)

🤝 Contribution Guidelines

Language

- All code, comments, and UI text are written in **English** for clarity and accessibility.

Modularity

- Each quiz question is in its own file.
- This makes it easy to **add**, **remove**, or **modify** questions.

Extending the Quiz

- **New Question:** Create a new file following the existing naming pattern (e.g., normal11.py).
- **New Level:** Create a new set of files and update the main program to include that level.

Dependencies

- Python 3.x
- PyQt5 (pip install PyQt5)
- (Optional) python-vlc for music playback: pip install python-vlc

📝 Additional Notes

- The application works both as a Python script and as a packaged executable (e.g., using **PyInstaller**).
- All resources are loaded using the resource_path() function for cross-platform compatibility.
- Contributions are welcome! Please follow the established code style and documentation practices.

For more information or inquiries, feel free to contact me at:

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