**Quiz Application - Python Based**

**Overview**

The Quiz Application is a Python-based interactive quiz app that allows users to answer multiple-choice questions from various categories like **Science**, **History**, and **General Knowledge**. The app includes **score tracking**, **question categorization**, and a **timer** for each quiz. Users can take quizzes, view their scores, and review their performance.

**Versions:**

1. **Console-based version (v1.0)**: The user interacts with the quiz via the terminal or command prompt.
2. **GUI-based version (v2.0)**: The user interacts with a graphical user interface (GUI) built using tkinter for a more user-friendly experience.

**Features (for Both Versions)**

1. **Score Tracking**:
   * The user's score is tracked during the quiz.
   * The user can view their past scores and performance metrics after completing each quiz.
2. **Question Categorization**:
   * Questions are organized into different categories like **Science**, **History**, and **General Knowledge**.
   * Users can select a category before starting the quiz.
3. **Timer**:
   * Each question is timed with a **30-second countdown**.
   * If the user doesn’t answer within 30 seconds, the next question is presented automatically.

**System Requirements**

* **Python 3.6** or higher
* Required libraries:
  + Console Version: time, json, random
  + GUI Version: tkinter (included in most Python installations)

**Installation Instructions**

**1. Install Python:**

Ensure Python is installed on your system. You can download Python from [here](https://www.python.org/downloads/).

To verify the installation, open a terminal (or command prompt) and type:

bash

Copy code:

python --version

**2. Install Required Libraries:**

For both versions:

* No external packages are required except tkinter for the GUI version, which is usually included with Python installations.

However, if tkinter is missing, you can install it by typing:

bash

Copy code:

pip install tk

**3. Download the Quiz Application Script:**

* For the **console version**, download the Python script file (e.g., IP\_Quiz\_Application\_console.py).
* For the **GUI version**, download the Python script file (e.g., IP\_Quiz\_Application\_gui2.py).

**4. Optional - Convert to Executable (Windows GUI version):**

If you want to create an executable for the **GUI version**, you can use **PyInstaller**.

To install **PyInstaller**, run:

bash

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pip install pyinstaller

Next, navigate to the directory where your Python script is located and run:

bash

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pyinstaller --onefile --windowed IP\_Quiz\_Application\_gui2.py

This will create a standalone executable that can be run without needing to open the Python interpreter.

**Usage Instructions**

**1. Console-Based Version (v1.0)**

To run the **console version**, use the following steps:

1. Open the terminal or command prompt.
2. Navigate to the directory where the Python script (IP\_Quiz\_Application\_console.py) is saved.
3. Run the script by typing:

bash

Copy code

python IP\_Quiz\_Application\_console.py

1. Follow the instructions on the console to select categories and answer questions.

**2. GUI-Based Version (v2.0)**

To run the **GUI version**, use these steps:

1. Open the terminal or command prompt.
2. Navigate to the directory where the Python script (IP\_Quiz\_Application\_gui2.py) is saved.
3. Run the script by typing:

bash

Copy code

python IP\_Quiz\_Application\_gui2.py

1. If you've created an executable, simply double-click the .exe file to launch the application.

**How to Use the Quiz Application**

**1. Console Version (v1.0):**

* After running the script, you'll be prompted to choose a category (e.g., **Science**, **History**, **General Knowledge**).
* You will then be presented with multiple-choice questions. Select the correct answer by typing the corresponding number (1, 2, 3, or 4).
* Your score will be displayed after the quiz is completed.

**2. GUI Version (v2.0):**

* Launch the GUI application by running the Python script or the executable.
* Select a quiz category from the options (e.g., **Science**, **History**, **General Knowledge**).
* Questions will appear with four multiple-choice options. Click on the correct answer.
* The timer will display the remaining time for each question (30 seconds).
* At the end of the quiz, your score will be shown, and you can review your performance.

**Example Quiz Flow**

1. **Console Version (v1.0)**:
   * You are prompted to choose a category:

bash

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Choose a category:

1. Science

2. History

3. General Knowledge

* + A sample question is displayed:

bash

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Who was the first Prime Minister of Pakistan?

1. Liaquat Ali Khan

2. Muhammad Ali Jinnah

3. Zulfiqar Ali Bhutto

4. Benazir Bhutto

* + You answer by typing the corresponding number, e.g., 1.

1. **GUI Version (v2.0)**:
   * The user clicks on the category button (e.g., "History").
   * A multiple-choice question with buttons is displayed:
     + "Who was the first Prime Minister of Pakistan?"
     + The user clicks the answer button.
   * The next question appears, or the score is displayed at the end of the quiz.

**Customizing the Questions**

The questions are stored within the script in a questions dictionary for both versions. You can modify or add new questions in the following format:

python

Copy code:

"CategoryName": [

{

"question": "Your question goes here?",

"options": ["Option 1", "Option 2", "Option 3", "Option 4"],

"answer": "Correct Answer"

}

]

For example, to add a new **History** question:

python

Copy code

{

"question": "When did Pakistan become an independent country?",

"options": ["1940", "1947", "1952", "1958"],

"answer": "1947"

}

Simply edit the questions dictionary in the script to customize the quiz.

**Troubleshooting**

1. **PyInstaller not recognized** (for GUI version):
   * Make sure pyinstaller is installed by typing pip install pyinstaller.
   * Ensure you are using the correct file path and are in the correct directory.
2. **Tkinter Issues** (for GUI version):
   * If the app doesn’t launch and you get an error related to tkinter, install the tkinter module via pip:

bash

Copy code:

pip install tk

1. **Script Not Running**:
   * Double-check the file path and Python environment. Use python --version to ensure Python is installed correctly.

**Version Details**

* **Console-Based Version (v1.0)**:
  + Interact with the quiz through the terminal.
  + Simple interface using print statements.
  + Score tracking and question categorization.
  + Timed questions with a countdown.
* **GUI-Based Version (v2.0)**:
  + Interact with the quiz through a GUI built using tkinter.
  + Clickable multiple-choice answers.
  + Timer displayed on the screen.
  + Score tracking with a user-friendly interface.

**License**

This application is open source and can be modified for personal or educational use.