Report On
AI-Based MCQ Quiz System

Course Code: CSE-3636
Course Title: Artificial Intelligence Lab

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Introduction: This project is a graphical user interface (GUI)-based quiz system that tests the user's basic knowledge of Artificial Intelligence (AI). The system presents multiple choice questions (MCQs), evaluates responses, provides immediate feedback, and displays a final score along with tips for improvement. The system was developed using Python and the Tkinter library.

Objectives:

- To develop an interactive and educational quiz application that introduces fundamental AI concepts.

- To provide users with real-time feedback on their knowledge and promote self-evaluation.

- To create a modular system that can be enhanced or integrated with additional features in the future.

Tools and Technologies Used:

- **Programming Language:** Python, due to its simplicity and widespread use in AI-related development.

- **GUI Framework:** Tkinter, used for creating responsive and user-friendly graphical interfaces.

- **IDE:** Visual Studio Code (VS Code), for writing, debugging, and managing the code efficiently.

- **Platform:** Windows 10, as a commonly used and compatible development environment.

Project Description: The project has been designed with modularity in mind and is divided into **three** collaborative components:

❖ **Quiz Data Module (Shebria Binthey Hossain_C213201):**
- This module stores all the quiz content, including questions, four options for each, and the correct answers.
- It helps in maintaining a clean structure by separating the content from the logic and interface.
- Future enhancements can allow data to be pulled from external sources like databases or APIs.

❖ Quiz Logic Module (Nafisa Ayman_C213203):

o Responsible for the internal workings of the quiz, such as tracking the current question, validating the user's answer, and maintaining the score.

o It ensures that the application progresses smoothly from one question to the next.

o Additional features such as randomization of questions or timer-based assessments can be integrated here.

❖ GUI Module (Farhana Mozumder Tisha_C213210):

o This module handles all user interactions. It uses Tkinter to render questions, display options with radio buttons, and capture selections.

o It provides instant visual feedback to the user based on their response and shows a summary at the end.

o The GUI is simple yet functional and designed to be easily accessible by users with minimal technical knowledge.

Features:

a) Dynamic MCQ presentation with four selectable options.

b) User interaction via radio buttons for smooth and error-free selections.

c) Real-time evaluation and immediate feedback on each response.

d) Final score display after all questions are answered.

e) Tailored feedback messages based on overall performance.

Advantages:

✓ Provides an engaging and interactive way to test and enhance AI knowledge.

✓ Simple and intuitive interface makes it suitable for users of all levels.

✓ Modular design allows for easy updates and scalability.

✓ Encourages active learning and self-assessment.

Limitations:

a) Currently uses hardcoded questions, limiting content diversity and reusability.

b) Lacks user authentication or progress tracking features.

c) No timer or difficulty setting, which could enhance the challenge.

Future Improvements:

a) Integration with a backend database for dynamic question loading.

b) Incorporating user profiles with login and performance history.

c) Adding timed quizzes and different difficulty levels to diversify learning.

d) Making the application web-based or mobile-friendly for wider accessibility.

Result:

➤ **If result is good input & output-**
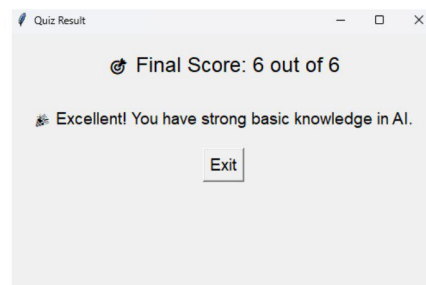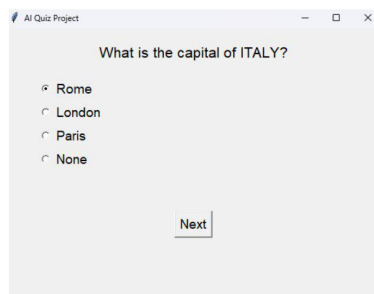
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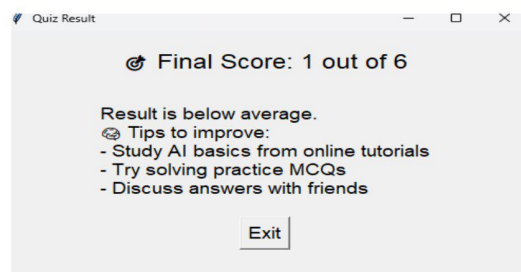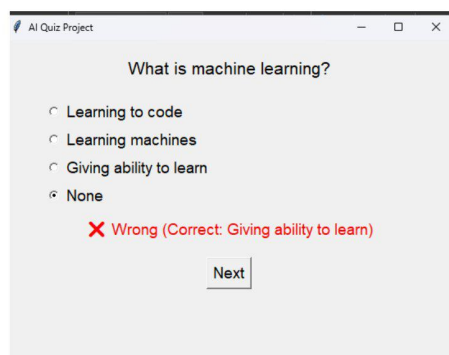
Conclusion: This project successfully demonstrates how Python and Tkinter can be used to create an educational tool for AI learning. It not only engages users through interactivity but also provides constructive feedback to help them grow. With future enhancements, the system can evolve into a comprehensive learning assistant.

References:

- **Python Documentation:** https://docs.python.org/3/

- **Tkinter GUI Reference**: https://docs.python.org/3/library/tkinter.html

- **GeeksforGeeks Python Tutorials:** https://www.geeksforgeeks.org/python-programming-language/

- **AI Basics:** https://www.ibm.com/cloud/learn/what-is-artificial-intelligence