Assignment

AI Power quiz Generator

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Contents

1. Introduction

This document outlines the design, implementation details, and user guide for a Multiple-Choice Question (MCQ) Quiz application developed using Python and Streamlit. This interactive application allows users to engage in quizzes on a topic of their choice, with questions and answers dynamically generated through the OpenAI Chat Completion API.

2. Design and Implementation

a. Backend Logic (Python - spyder):

- OpenAI Chat Completion API integration: Utilizes the API to generate quiz questions and answer options based on the user's chosen topic.
- Dynamic question generation: Employs the "davinci" engine for its creative capabilities, ensuring engaging and original questions.
- Answer option creation: Leverages the engine to generate four options, one of which is randomly chosen as the correct answer.
- Randomization and shuffling: Ensures unpredictability in question order and answer options.
- Data storage: Relevant information like questions, options, and correct answers are stored in dictionaries for further processing.

b. Front-End Interface (Streamlit):

- Provides clear instructions and intuitive navigation.
- Topic and question input: Dedicated fields for users to specify their desired quiz focus and number of questions.
- Interactive quiz display: Presents questions one by one with radio buttons for selecting answers.
- Score calculation and feedback: Upon completion, displays the score and reveals correct answers for each question.

3. Code Steps

- import Libraries:
  1- OpenAI library: allows to use OpenAI's Chat Completion API.
  2- Random library: used to shuffle the answer options in the quiz.
  3- Streamlit library:Used to create a user interface for the quiz.
- Initialize OpenAI Chat Completion API with API key
- Generating the quiz questions and answer by using engine which is good at generating interesting and original text. This is important for a quiz, as the questions and answer options should be engaging and challenging for the user. "curie" is a factual engine that is better at generating accurate information,but it may not be as good at generating creative content.
  Specify the engine to use for generating text (e.g., "davinci" for creative, "curie" for informative).
- Creat function "generate_quiz" that takes a topic and a number of questions as input and returns a list of dictionaries. Each dictionary contains a question, four answer options, and the correct answer.The function uses the OpenAI Chat Completion API to generate the question and answer options. It first generates a multiple-choice question on the specified topic. Then, it generates four answer options for the question, one of which is the correct answer. Finally, it shuffles the answer options and adds the question data to a list.
- Create the Streamlit application with a title, allow users to input their desired quiz topic and number of questions, use if statment to Generate the quiz based on the user's input
- Calculate the quiz score by comparing selected answers to correct answers.

4. User Guide

a. Getting Started:
- Open the application, Quiz Streamlit Link: http://localhost:8502/
- Enter your desired quiz topic in the "Enter your desired quiz topic:" field.
- Specify the number of questions you want to answer in the "Enter the number of questions:" field.
- Click the "Generate Quiz" button.

b. Taking the Quiz:
- Each Question will present four answer options.

- Select the option you believe is the correct answer using the radio buttons.
- Click "Next Question" to proceed to the next question.

c. Quiz Completion and Results:
- Once all questions are answered, the "Quiz Results" section will appear.
- View your overall score as a percentage.
- Scroll down to see the correct answer for each question, along with your chosen response.

5. Softwares and Websites used in this Assignment:

- Anaconda
- Spyder: Quiz.py
- ChatGPT- AI API: API key: sko1BDlo8kok7odEqhhXHVT3BlbkFJbhU6gYl8jZwMX2zao3MR
- Streamlit
- GitHub (Code): **https://talinissambader.github.io/AI-Powered-Quiz-Generator/**