Title: Wine Business Chatbot Project Report

1. Overall Approach:

   This project's goal was to develop a chatbot for a wine company that responds to consumer inquiries by using a pre-existing corpus of questions and answers. The chatbot should only use the provided corpus for responses and prompt users to contact the business directly for any out-of-corpus questions.

   Actions Undertaken:

   1.Knowing the Corpus: loaded the JSON file that was provided, which had example questions and answers.

   2.Configuring the Environment: OpenAI, Streamlit, and Pyngrok were installed together with other required programs.

   3.Write the Script for the Chatbot: created a program in Python to handle user queries, load the corpus, and deliver results based on the corpus.

   4.Constructing the Interface: To design a simple user interface for the chatbot, Streamlit was used.

   5.Providing the Application's Hosting: Streamlit was hosted using Pyngrok and make it accessible via a public URL.

2. Frameworks/Libraries/Tools Used:
   - Python: The programming language used for scripting.
   - OpenAI: For any potential integration of advanced AI functionalities (though primarily the task was handled using the corpus).
   - Streamlit: For creating the web-based user interface of the chatbot.
   - Pyngrok: For exposing the local Streamlit app to the web, allowing for easy sharing and testing.

3. Problems Faced and Solutions:

- Corpus Matching:

  Problem: Matching user queries to the corpus entries.

  Solution: Implemented a function to search the corpus for the best match based on the user's question. If no match was found, a default response was provided.

- Authentication Errors with Ngrok:

  Problem: Authentication errors when connecting ngrok.

  Solution: Ensured proper setup of ngrok authtoken by following the steps provided by ngrok's official documentation. Made sure to securely enter the authtoken in the script.

- Streamlit App Deployment:

  Problem: Running the Streamlit app and making it accessible.

  Solution: Used ngrok to create a public URL for the locally running Streamlit app, making it accessible over the internet.

4. Future Scope:

- Enhanced Natural Language Processing:

  Incorporate more advanced NLP techniques to better understand and process user queries. Use pretrained models to handle a wider variety of questions and improve accuracy.

- User Interaction Features: Add features like multimedia responses (images, videos) to enhance user engagement. Implement a feedback system for users to rate responses, helping improve the chatbot's performance over time.

- Scalability and Performance: Optimize the chatbot for lower latency and better performance under heavy load. Implement caching mechanisms to reduce repetitive processing for frequently asked questions.

- Integration with Business Systems: Integrate the chatbot with the business's CRM system to provide personalized responses based on customer data. Enable the chatbot to handle transactional queries such as booking tastings or purchasing wines directly.

5. Instructions to Run the Code:
    - Set up your environment:
      Install the required packages using: pip install openai streamlit pyngrok.
    - Save the provided JSON file: Ensure the JSON file with sample questions and answers is in the same directory as your script.
    - Run the Streamlit app: Use the command: streamlit run chatbot.py.
      Use Pyngrok to expose the app: ngrok connect --authtoken <your_ngrok_authtoken> --port 8501.
    - Access the chatbot:
      Copy the public URL provided by ngrok and open it in your browser to interact with the chatbot.

6. The OPENAI_API_KEY is a secret key provided by OpenAI that allows you to access their API, including models like GPT-3. Here's how you can obtain it:

    - Sign Up or Log in to OpenAI:
      Visit OpenAI's platform and sign up for an account if you don't have one, or log in if you already do.
    - Generate an API Key:
      Once logged in, go to the API section of your OpenAI account.
      Find the option to create a new API key. Follow the instructions to generate a key.
    - Copy the API Key: Copy the generated API key. It will look something like this: sk-XXXXXXXXXXXXXXXXXXXXXXXXXXXX.
    - Use the API Key in Your Code: When prompted in the Google Colab script (or any other environment), you will enter this API key.

7. To get your ngrok authtoken, follow these steps:

    - Sign Up for a ngrok Account:

      Go to the ngrok website.

      Click on "Sign Up" and create an account using your email, or log in if you already have an account.
    - Access Your Authtoken:

      After logging in, go to the ngrok dashboard.

      Click on the "Get Started" or "Your Authtoken" link in the dashboard.
    - Copy Your Authtoken:

      You will see a command like ngrok authtoken <your-authtoken>. The <your-authtoken> part is your unique authtoken. Copy the authtoken (it will be a long alphanumeric string).
    - Use Your Authtoken in Your Code:

      When prompted in your code, enter this authtoken.

8. A one-minute video showing your chatbot action:
   https://drive.google.com/file/d/1MI-9CUU3wh0vdZAGkM64jwETJoQodggo/view?usp=sharing

Thanks & Regards

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