Technical Interview Task for Junior AI Engineer at Liberate Labs AI

Welcome to the Technical Interview Phase

You need to complete a task in this phase, and your performance will be evaluated out of 50 marks. Based on your performance, you may be forwarded to the next phase.

Problem Statement

You need to design and develop a chatbot that can handle complex queries and generate insightful observations from multiple CSV files for Organization X.

Dataset:
https://drive.google.com/file/d/1uhnz7MEJyKdOC-v0TuEYX8OHk-nS72mU/view?usp=sharing

Organization Description

Organization X is an ed-tech platform designed for K-12 education. It enables school leaders to conduct walkthrough sessions to observe teachers and provide constructive feedback. The platform focuses on improving teachers' instructional practices and students' test scores. Overall, it supports the continuous development of both teachers and students.

Problem Context

District Admins/Principals want to understand what is happening in their district/school. Organization X provides detailed data via sessions (classroom walkthroughs) containing data of observations of the teacher and classrooms. However, there is too much data to understand trends. High-level insights, as well as specific highlights/lowlights, are difficult to extract from so much data. As such, we would like an interface (chat + dashboard) that would allow us to engage with this data better.

CSV File Descriptions

You will be working with the following CSV files, but there could be more CSV files beyond these four that should also be considered by the chatbot:

1. customer_success_report: Report on customer success metrics for each user.
2. next_steps_report: Report on the next steps created and their status.
3. sessions_report: Detailed report on sessions conducted.
4. customer_journey_report: A report detailing the journey and engagement within a school.

Deliverable Solution

1. Solution Design Plan:
   - A PDF or Docx containing a solution design plan with justification.
   - How would you design the solution?
   - What other options are available, if any? Share your justification for your design plan.

2. Code Implementation:
   - Provide a Git repository link containing your code implementation.

3. Video Demo:
   - A recorded video demo (Loom recommended) of your fully functional chatbot with some consecutive queries in the system.

Evaluation Criteria

Your submission will be evaluated out of a total of 50 marks based on the following criteria:

1. Solution Design with Justification (10 marks):
   - Clarity and completeness of the design plan.
   - Justification for the chosen design and consideration of alternative solutions.

2. Chat System Development (25 marks):
   - Functionality and robustness of the chatbot.
   - Ability to handle complex queries and generate insightful observations.

3. Clean Code and Documentation (15 marks):
   - Code quality, readability, and maintainability.
   - Adequate documentation for understanding and reproducing the solution.

Note
   - For the language model (LLM), you may use any closed or open-source model, such as Gemini, Llama, or Mixtral models via the GroqCloud API.
   - For the chat interface, a lightweight framework like Streamlit, Gradio, Flask, or any other similar option is fine.

Deadline: 17th October

Contact for Clarification
For any clarification, please send your queries in reply to the email in which the task was sent.

Thanks, and wish you good luck!

Solution Design Plan - [Chatbot Design Plan](#)
Github Repo. - [EdTech_Insights_Chatbot](#)
Video Demo - [Chatbot Demo Video](#)