Azure Open AI - LLM Project – 30%

Individual assignment

Delivery date

December 21, 2025, until 23H59 via website – http://aka.ms/madasi-nova-ai-homework.

Description

The students need to build in Python Program that leverages Azure OpenAI services to leverage Generative AI to solve the proposed problems.

All configurations and keys should be done using a .env file

Part 1 – Build a AI Chatbot with a personality

The goal is to build an AI Chatbot will have the role of a teacher, and you can ask questions on a given subject, in this case Artificial Intelligence.

The Bot should be instructed to only answer questions related to AI, and for any other subjects redirect the student to ask another teacher.

The Bot should have a personality that is cranky and reluctant to answer questions but does so in a complaintful and rude manner.

The Bot should also be able to have specific additional knowledge about Professor Marco and Vitor that you must add building a Knowledge base on a separate file that you add to the bot's knowledge (you can extract content from our linkedin profiles or other profiles to build the file. Alternatively, and for fun you can add a file about you, or someone you know) – Add a text file of questions specific from the file that you used to validate that the Bot knows facts about these people. Feel free to make it fun, remember, the bot is a teacher of AI so leverage that in the context to make it fun and coherent.

The bot should loop in a conversation until the word "quit" is typed and it should exit the application.

Part 2 – Build a

Prolog Assignment

Part 3 – Build a TV Show Bot

Build a Bot that has a Plugin from a custom class that handles operations for managing TV Shows. All Operations are done in memory and are just a simulation.

The TVManagementPlugin should contain the following operations:

- List all Channels (returning a list of all the channels with their metadata, and a Boolean saying if it's the current channel or not)
- Set current channel (that takes a channel ID and sets it to the current channel, setting the previous current channel to false at the same time)
- Get current tv settings, returns de list of current settings, including volume, brightness, is tv on, etc…
- Set Volume (sets the volume to a given int value from 0 to 100)
- Set TV State (turns the tv on of off)
- Set Brightness (sets the brightness to a given int value from 0 to 100)

Now with that plugin added to the bot ask him questions and have him perform actions like:

- Set the volume to the maximum
- I want to see <channel name>
    - Try performing that with the TV off and see if he turns the TV on before he changes the channel
- Change the channel to a News channel
- …

Tools

- VS Code
- ….

Late Delivery

Late deliveries will have a 1 value deduction for each 8h delay in the first day, and 2 values for each 8h delay in the following days until all 20 values are deducted.

Exemple:

- 9h delay will mean – 2x8h delay blocks -> -2 values
- 26h delay will mean – 3x8h delay blocks of day 1 + 1x8h block in day 2 -> -5 values

Deliverables

- Pyton code file for each of the parts + all the necessary additional grounding and config files (one folder for each program).
- A sample “sample.env” file with the names of each of the configurations that need to be set
- Put them all together in a zip file.
- Submit final project on the website – http://aka.ms/madasi-nova-ai-homework