Iteration 3 Report
EECE 2140: Fundamentals of Computer Engineering
Virtual Assistant

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GitHub Link: https://github.com/canersaka/EECE2140virtualassistant

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1 Summary of Team Progress and Development Updates

The majority of the work towards Iteration 3 consisted of deciding what tools to use and what the full scope of the project would include. It was decided that the overall goal of this project would be to make a simple rule based chat bot, and the make it so that if the phrases do not have a preset answer, the bot will make a call to a local .gguf files so that the interface essentially becomes an LLM. This would avoid unnecessarily using hardware resources on an LLM for a basic input, such as "Hi" or "Thank you". Research was conducted and multiple different interfaces/tools were considered before settling on Gradio. Gradio was chosen because relative to other options, it provided the most straightforward and seamless way to implement a webpage based chat bot interface. During this iteration a very simple Gradio setup was created that allows for an input to receive a response, so all that is left is creating more advanced logic with more possible responses, and introducing the connection to a local LLM. Another feature that will be considered for the next iteration is the ability to have persistent conversations, so that a person can save and load their conversation later in case they want to reference past conversations.

2 Implemented Core Features

Describe the main features developed during Iteration 3. For each feature, provide:

- **Rule based input + response**
  - Provide responses based on recognized phrases in user input. This was implemented with simple conditionals and was tested by trying the different words that have been implemented to see if the expected response was returned.
- **Browser based GUI**
  - Interactive chat window that can open in any browser. This was implemented by importing the Gradio library, and was tested by running the program and attempting to use the input + response and seeing if the expected response was returned.

3 Challenges and Resolutions

Briefly discuss the main technical or organizational challenges faced during Iteration 3 and how they were resolved.

- **Challenge 1:** Gradio consistently returned an error because a previous version was using tuples but was later replaced with strings. **Resolution:**

This was resolved by updating the package used and the format of the inputs.

- **Challenge 2:** Push to repository was rejected due to existing commits. **Resolution:** This was resolved by allowing the merging of unrelated histories.

4 Leadership Rotation and Team Contributions

N/A

Individual Contributions

Team Member	**Contributions (Technical / Documentation)**	**Hours**
Caner Saka	Research and create initial draft of project	4 hrs

Statement by the Individual Submitter

I, **Caner Saka**, confirm that the above table accurately reflects my personal contributions during Iteration 3.