

Lab 2 Report – Task 3: Improvements

Errors and Limitations of My Application

Errors:

The most common errors I encountered were syntax errors. These errors did not appear in my code editor but caused issues on my local website. As a result, essential UI elements, the button to begin our app, were not displayed, and the entire finite state machine (FSM) failed to function. Debugging these issues required a deep understanding of how **speechstate** works and how different states interact within the FSM.

One particularly challenging error involved checking for user confirmation. Initially, in the final step of checking for appointment information, I attempted to update and store the confirmation value in the **DM context**, but later realized that this was unnecessary. The confirmation check only needed to extract information from the grammar without modifying any stored properties. This insight helped me correct my approach and properly handle the confirmation logic.

Limitations

Currently, my application supports only a limited range of grammar. For example, meetings can only be scheduled at hourly intervals between 09:00 and 18:00, without the option to specify minutes. This restricts users who might want to schedule meetings at more precise times, such as **09:30** or **14:15**.

Another limitation is the lack of a **backward navigation feature**. Once a step is completed, the user cannot go back and modify previous inputs. For example, if a user mistakenly selects the wrong person to meet with, there is no way to return to that step without restarting the entire process. Implementing a mechanism to allow users to revisit and correct previous steps would significantly improve the app's flexibility and usability.

Solutions

To address these issues, I took the following steps:

1. Improving My Understanding of the Code

- I thoroughly reviewed the application logic to better understand how **speechstate** and the FSM handle different states.
- I sought help from my **teacher, teaching assistant, classmates, and online resources** to clarify complex concepts.

2. Expanding Functionality (*Future Work*)

- To allow users to schedule meetings at more flexible times, I plan to modify the grammar and parsing logic to support **minute-based scheduling**.
- Implementing a **step-back feature** would enhance usability by allowing users to correct mistakes without restarting the entire process.

Final Notes

While my application has some limitations, identifying and addressing these challenges has significantly improved my understanding of FSMs and speech recognition systems.