Lab 3 : Basic dialogue management

Appointment booking app

The appointment booking app helps the user to book an appointment with a person, by guiding the user to choose a date and time.

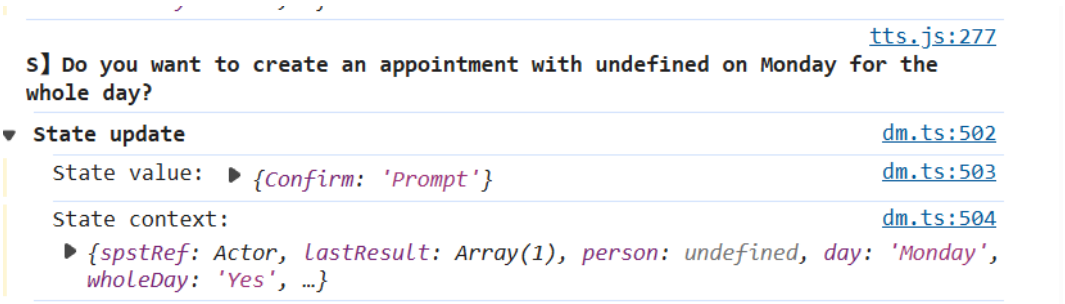
Limitations

- When users provide inputs that are not in the grammar like saying "Apple", the system announces "it is not in the grammar" but still continues to the next question anyway. Hence the system can create appointments with missing or invalid information.
- While the system accepts some variations of yes/no responses(sure, yes okay, of course,maybe not etc), it is impossible to add all possible user responses to the grammar.For example,users might say "I want to meet John" instead of just "John"
- Users don't know all the options/services that are available for a particular question. For example, when asked "How can I help you?", users have no way to ask what services are available or which all people they can meet with. In real world, this would be useful for a hospital booking system, when you want to know which all Doctors are available for consultation.
- Currently the system only accepts day names like Monday, Tuesday, etc. It cannot understand other forms of dates like "tomorrow", "next week", "February 15th" or "the 20th".
- Users cannot ask the system to repeat the last question if they didn't hear it clearly or they can request help or clarification during the conversation.
- Currently once users provide an answer, they cannot correct it. Minor mistakes require restarting the entire conversation. But in real cases, the AI models handles the user's repairs.

Fixes Implemented

I have tried fixing the first two limitations discussed earlier. The results are below.

Problem : Proceeds to next question despite invalid input



Solution : Modified CheckGrammarForHelp, CheckGrammarForPerson, CheckGrammar-ForDay and CheckGrammarForTime to use guards so that if invalid input, it returns to the previous question instead of proceeding. So, the system keeps on repeating the question until we say an answer thats in the grammar.

Problem : Cannot handle variation of responses

Solution : Implemented helper functions using includes() method.The function loops through a list of known grammar words and checks whether the user's utterance contains any of them.Hence when the user says "Let's meet on Monday morning", the function scans for any known word in the utterence and returns "Monday" instead of saying its not in the grammar.