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Homework 1

This chatbot discusses video games and video game consoles. It uses a dataset of videogames to provide meaningful information about games to the user. The chatbot also presents its own preference for games and selects its favorite games for each console.

To design this chatbot, we first considered the longest possible chain of interactions a user could have with the system. After building this chain, we added derived interactions that branch off the main chain. This makes it easier to make sure every state is closed at some point (reaches a terminal state).

Here is an example conversation that uses over 10 states.

S: Hi, do you play video games?

U: yeah

Transition ('State.INIT_PROMPT', 'State.QUES1a') matched "yeah"

S: What do you most often play video games on?

U: wii

Transition ('State.ANS1', 'State.QUES2') matched "wii"

S: The wii is a nintendo device! Is there anything you like about using a wii ?

U: it's very fast and nice

Transition ('State.ANS2', 'State.QUES3') matched "it's very fast and nice"

S: I'm glad you're enjoying your wii ! what's your favorite game to play on your wii ? My favorite is wii sports!

U: give me another

Transition ('State.ANS3', 'State.QUES4a') matched "give me another"

S: My favorite game is Adventure Time: Explore the Dungeon Because I Don't Know!. It is a action game for the x360. Whats yours?

U: mario kart wii

Transition ('State.ANS3', 'State.QUES4d') matched "mario kart wii"

S: Do you have a favorite genre of video game?

U: action

Transition ('State.ANS3b', 'State.ANS3c') matched "action"

S: Ben 10 Alien Force: Vilgax Attacks is a good action game for the wii . Do you like the recommendation?

U: yeah

Transition ('State.QUES4z', 'State.QUES123') matched "yeah"

S: Great! I'll recommend another game then! Give me a genre

U: platform

Transition ('State.ANS3b', 'State.ANS3c') matched "platform"

S: Despicable Me: The Game is a good platform game for the wii . Do you like the recommendation?

U: no

Transition ('State.QUES4z', 'State.QUES124') matched "no"

S: I'm sorry. We'll stop here. Goodbye!

U:

Note that for the third step (*it is very fast...*), the system responds slightly differently if the user gives a positive or a negative response to the question (In short, feel free to use adjectives other than “fast”).

We found the NaTeX notation to be rather limiting (especially in that it lacks the ability to perform the OR operation, only XOR is defined as {}). For the final project, we look to move towards a more mature, more Pythonic and better developed framework. In conclusion, this project has put into perspective the difficulty of designing chatbots as finite state machines and exacerbates the need for a better method of analyzing text and responding to users.

Below is a state diagram broadly outlining the possible conversations. This doesn't explicitly correlate with the programmed state machine, but rather shows how different user transitions can affect different prompts from the system, and how the conversation will flow as such. Note the bottom part of the state diagram was slightly simplified due to time constraints.

