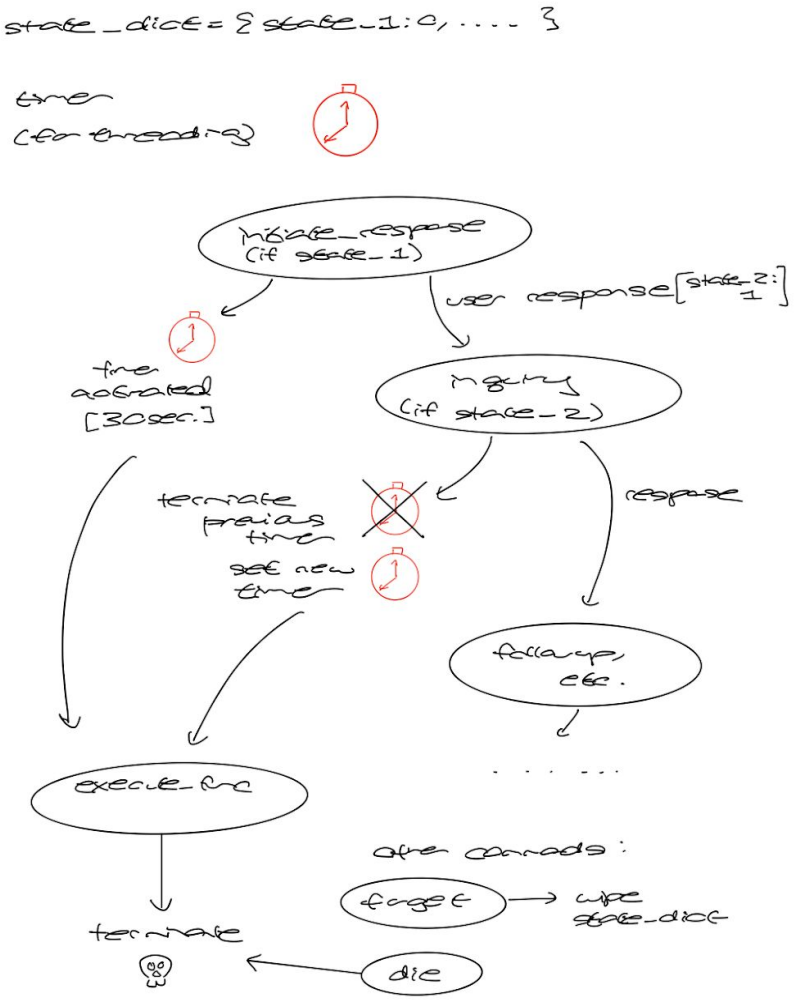
Lab #4 IRC: Richa Gadgil

chatbot system, main loop and mechanics

The main logic of the chatbot was handled with a dictionary of conversation states to maintain where in the conversation the chatbot was (at what state it was at). This also made it easy for the bot to ‘forget’, by wiping this whole list.

We also had functions to handle the transitions between each state. This included an “initate_conversation” function, a “scheduled_event_no_response” function, etc. This made it easy to transition from state to state.

For the specific timing functions, we had blocking timer functions to ensure a variation in response time as well as multi-threaded timers to count down from the last interaction until the chatbot quit.



The figure provides a glimpse as to how these moving parts work together.

NLP routines

For the actual responses, we figured out we could use subsetting for the questions the bot is asked. For any chat communication protocol, the user communicating with the bot has to ask how they are (“how are you YOU”). In this case, we could just look for the word “you,” and then give a generic response.

This works for multiple different questions directed towards the bot:

P1: How are you?
Bot: I’m good :)

P1: How are doing?
Bot: I’m good :)

P1: How are you today?
Bot: I’m good :)

P1: You are ok?
Bot: I’m good :)

P1: Are you there?
Bot: I’m good :)

In terms of giving a variation of response, since this project was a simple model, I used a dictionary of possible commands for each state which then returned a random response. However, with synsets and wordnet, I could also replace words with their synsets in order to generate a sentence with a similar or exact meaning.

Example of expanding one possible response into three using synsets:

“I’m happy!”

wn.synsets(‘happy') → [Synset('happy.a.01'), Synset('felicitous.s.02'), Synset('glad.s.02'), Synset('happy.s.04')]

“I’m happy!”, “I’m felicitous!”, “I’m glad!”

I also included kaomoji:

you going to talk? (͡° ͜ʖ ͡°)
How are you? ❀◕ ‿ ◕❀
I am well-chosen (づ｡◕‿‿◕｡)づ

Fun fact: Users from Japan popularized a style of emoticons (顔文字, *kaomoji, lit.* "face characters") that can be understood without tilting one's head to the left. This style arose on ASCII NET, an early Japanese online service, in 1986.

I just put them in because they’re cute.