Intelligent Systems: Mini-Project (ChatBot)

MP1

Master in Informatics Engineering
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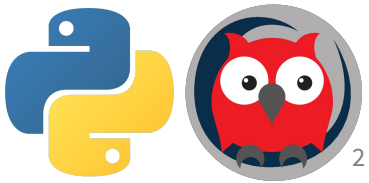
10/05/2022

Technologies and Tools I

Search and experiment with different technologies and tools to use in the development of the conversational agent.

- **Python**
  - Easy language to use
  - Great experience/comprehension by the group members
- **Prolog**
  - In line with the objectives of the project - Designed to do natural language processing.
  - Familiar for the members of the group.
- **PySwip**
  - Enables SWI-Prolog in Python programs.
  - Provides (incomplete) SWI-Prolog foreign language interface, a utility class and a Pythonic interface.
  - Some experience by the group members.



Technologies and Tools II

- **OWLReady2**
  - Enables Owl language files to be loaded and used as python functions and classes.
  - It can be used as a database and as a brain for the AI.
  - Some experience by the group members.
- **Senticnet API**
  - Simple API to use SenticNet
  - SenticNet is an initiative conceived at the MIT Media Laboratory in 2010.
  - Concept-level sentiment analysis.
- **WordNet**
  - Large lexical database of English.
  - Nouns, verbs, adjectives, and adverbs.
  - Useful tool for computational linguistics and natural language processing.

ChatBot Concept - Main Conversation Theme

- Using **English** Language
- Main Topic - **Marvel Cinematic Universe (MCU)**:
  - Movies, Characters, Storyline and Directors
  - Opinion of the user about the movies or characters

ChatBot Concept - Tamagotchi

The main idea is to create a chatbot around the virtual pet theme:

- Main focus Conversation:
  - Talking based on a theme and his mood
- Feeding:
  - He can get hungry, changing his mood, by feeding him he can learn new foods.
- Sleeping:
  - He can go to sleep and you can wake him up early.
- Playing:
  - You can play a game with him.

ChatBot Concept - Tamagotchi: Feeding

The Chatbot can get hungry and you can feed him new or old foods:

- With a new food, he learns its name and has a chance of liking or disliking the food which changes his mood.

- With old foods, giving him a food he dislikes will make him angry or grumpy, if you give him a food he likes or loves he will be happy.

- Or the user can just starve his pet making him very angry.

ChatBot Concept - Tamagotchi: Sleeping

If the Chatbot gets bored because you are not talking to him or doing anything with him he may go to sleep:

- If he is sleeping and the user wakes him up early, there is a chance that he will get angry and then he won't talk to you for a while.

- If he wakes up on his own, he wakes up not angry.

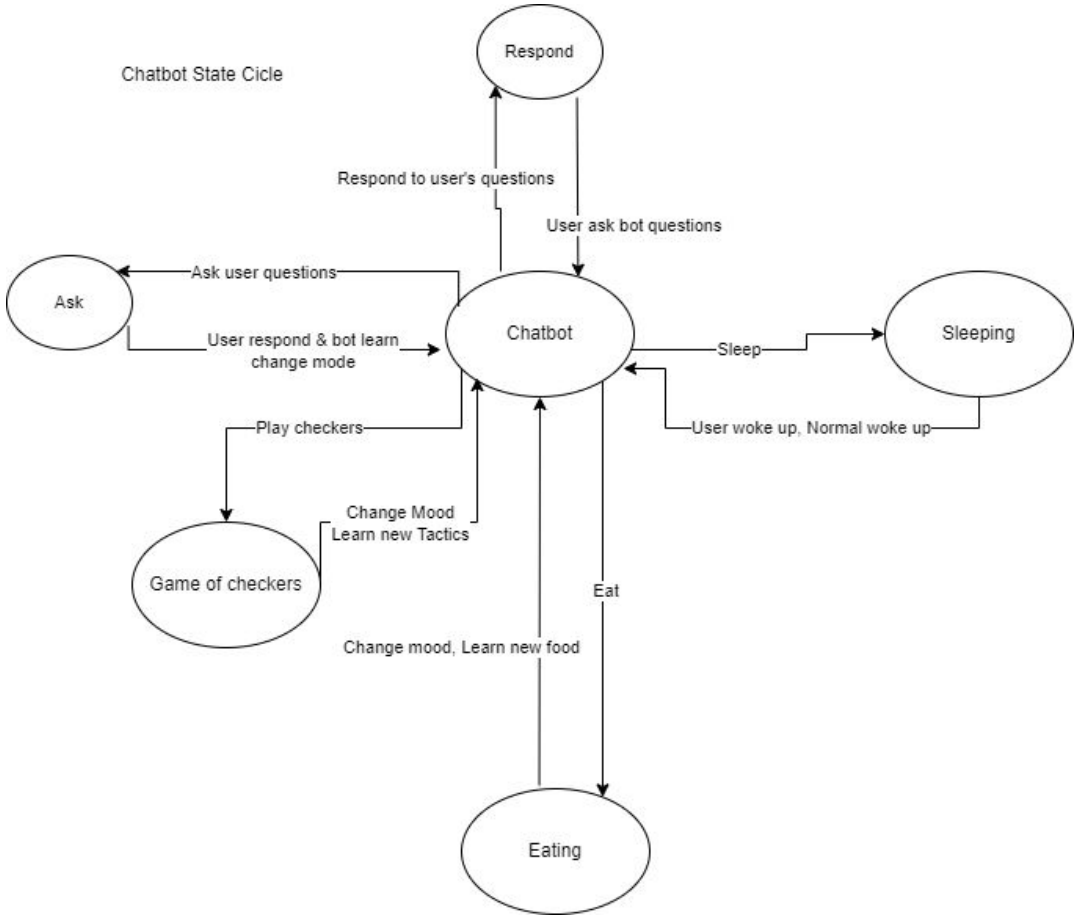
ChatBot Concept - Tamagotchi: Playing

The ChatBot may get bored, the user can play a game (Checkers):

- If you play and the bot wins, he gets extremely happy.
- If you play and you win, the Chatbot gets happy or a bit annoyed.
- If you don’t play, he gets bored or grumpy.

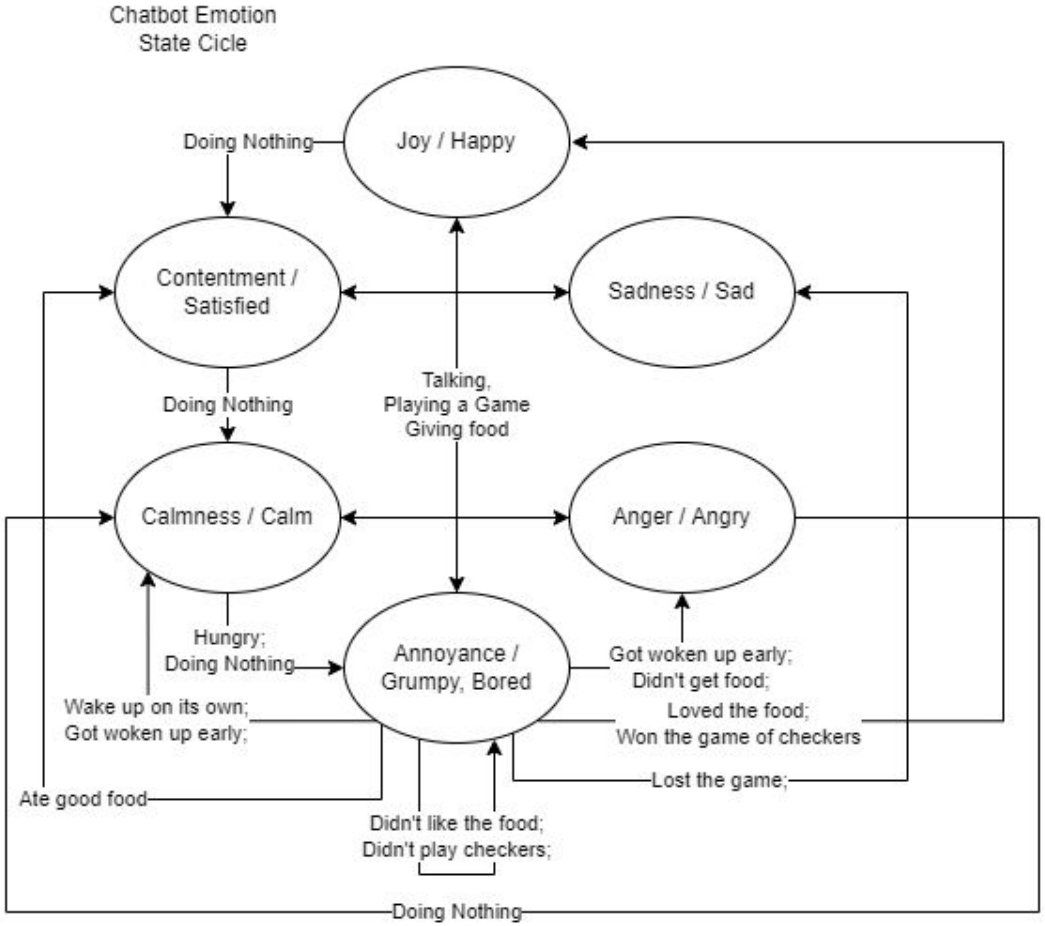
Design/Structure I

- ChatBot States



Design/Structure II

- ChatBot Emotion States



Work Planning

- 1/05 - 10/05
  - Documentation Development
  - Initial Grammar
  - Checkers Game Initial Code
- 10/05 - 24/05
  - Complete Grammar
  - Basic Operations for Chatbot
  - Sleeping and Feeding Operations
- 24/05 - 7/06
  - Chatbot Learning New Knowledges
  - More Training For Checkers
- 7/06 - 17/06
  - To be Defined

Initial Code - Demo

- Initial Code of ChatBot - Feeding and Playing Interaction
- Main to Run: virtualPet.py