Mushroom in Mind

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Links to the game & code

- Link to the game: https://mushroom-in-mind.netlify.app/
- Link to the code: https://github.com/xunih/dialogue-systems-1

What does the game do?

- Pictures of six different mushrooms
- Users choose one to think of
- Through users’ answers to four questions, the computer guesses which one is the mushroom users are thinking of

Technicalities

- Based on the lab 2 and lab 4
- Speechstate handling dialogues
- Azure NLU handling user voice inputs
- Vite project with modifications on HTML and CSS code
- Use GitHub and Netlify for deployment

Challenges

- How to “guess” which mushroom the user is thinking of
  - Solution: For very special mushrooms Nr. 4 (red colour) and Nr.5 (looks like fingers), directly give a guess based on the colour or the shape; For others, use very simple countings based on whether the user input exists in the mushroom database.
- How to train the NLU model to understand diverse user inputs
  - Solution: Add more possible answers to let the model learn more potential answers

Relation to course contents

- The most useful parts of the course
  - The labs. I used them as the base model for my project.
- Statecharts
  - Yes, I used it at the beginning when I was designing how my dialogue system would work. It’s very useful. It makes the implementation much easier as it clearly shows each step my system will have and how the dialogue will move forward.

Relation to course contents

- Development process
  - I started with setting up all the states
  - Then I connected each state and made sure that the basic flow is working
  - Implemented a simple database for mushrooms and the guessing part
  - Connected to NLU and fine-tuned the NLU model
  - Conducted a user test and obtained insights about what can be improved
    - I observed the user and wrote notes, followed by asking the user about their experience with my system.
  - Improved some parts based on the observations and user feedback
  - Deployed the application

Relation to course contents

- Ethical concerns
  - Voice data privacy: It will collect users' voice data, which might violate peoples' data privacy and security.
  - There're some mushrooms shown in the application are edible. This given information might encourage users to look for similar mushrooms to eat in nature and this can be dangerous.

Future Work

- More NLU training data
- Add information alerting users not to find wild mushrooms to eat in nature without professional guidance
- Implement a better algorithm for finding (“guessing”) the best matched mushroom