AI 2A HRI project

Task oriented SDS: the goal of the project is to implement a **task-oriented SDS** in one of the proposed scenarios.

step1. Tools acquire and Install tools for speech processing, dependency parsing, text-to-speech.

step2. Test the systen pipeline: Write a program that acquires a spoken sentence, calls the ASR to get the corresponding text, then calls DP, prints the dependency graph and returns some info (e.g. its root) through the text-to-speech.

step3. Implement the task oriented dialog (using the above tools) in one of the proposed scenarios

AI 2A HRI project scenario

1) Semantic Mapping: teaching the robot the objects of the environment

2) Waiter Robot:

3) Office Robot: carries objects around the office

4) Cleaning Robot:

5) Bar tender

… you can propose a different scenario

Resources (suggested)

Implementation language: Python

- ASR
  - Google Speech Recognition https://pypi.org/project/SpeechRecognition/
- Dependency parser SPACY
  - https://stanfordnlp.github.io/CoreNLP/
- Text-to-Speech SAY (linux)
- Framenet https://framenet.icsi.berkeley.edu/fndrupal/

Rules

- The project replaces the written question on HRI subsection of 2A
- The project can be done in any language (if you choose a language different form English and Italian, provide the translation of the dialog turns)
- The project can be done in grous of 3 students
- The evaluation will be done on a report (4pg. To be mailed in advance) + demo in any of the office hours before the start of the next semester (send email before)
- Deadline (before the start of next semester) After the deadline the project will not be accepted