Workflow

- Understanding the principles of Ontology and owlapi (see the materials contained in the folder)

1)

- Develop a tool with a GUI (python?) for manually inserting in the Ontology*:
  - New Concepts as Subclasses of the Class SchoolSubject
  - Sentences for each topics
  - Questions and Answers

Optional:
- Evaluate the possibility of recording some audio files with the GUI which may be uploaded online and linked in the Ontology

2)

- Based on the current working principles of the system, design an algorithm for dialoguing with the user about school subjects.

- The algorithm should:
  - Use as input the Ontology developed in 1), retrieving the sentences inserted in the new Ontology*
  - Adopt a policy for presenting those topics: it may be the same of Caresses, but for example it may ask more than one question for each topic, and questions could be with multiple answers

- A code (python or java) should be developed, which will connect by TCP/IP to 3)

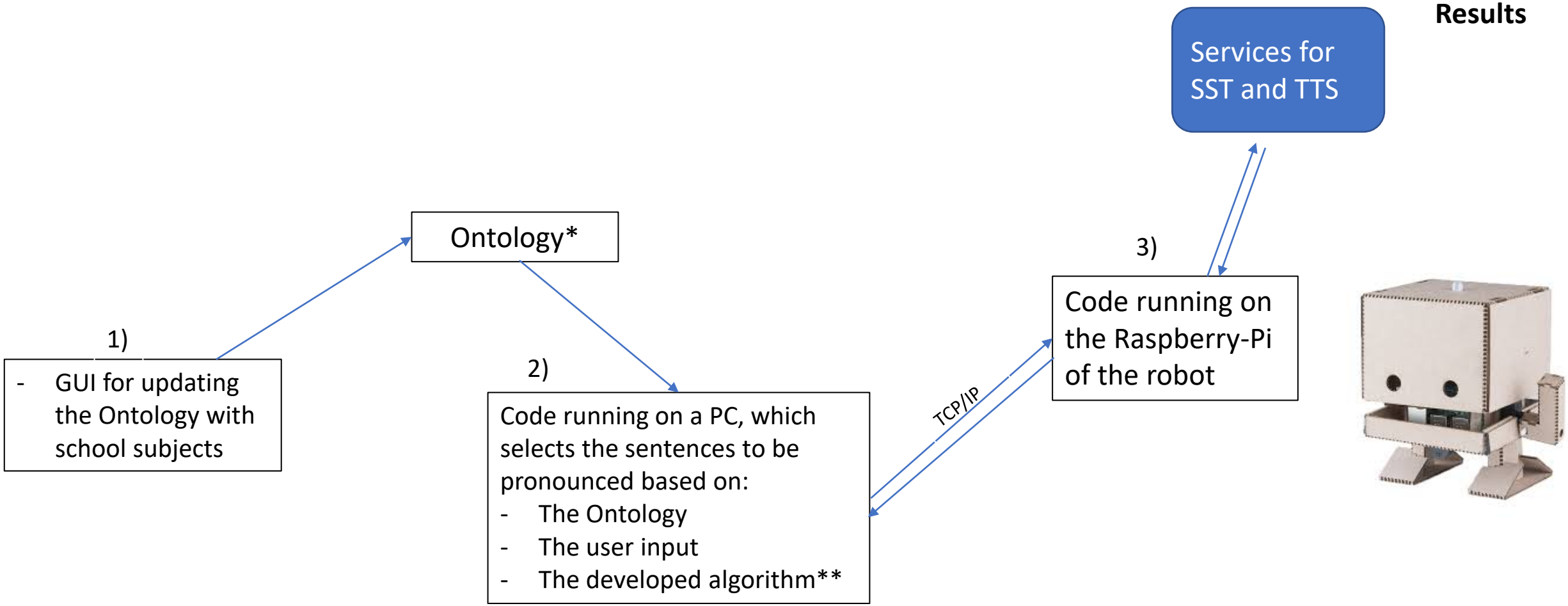
3)

- Robot TJBot Assembling
- Raspberry Pi Setup
- Develop Code (python?) for:
  - Speech-to-Text
  - Text-to-Speech
  - TCP socket with the other two modules

Optional:
- Integration of the system with Nao

*It may be either a new Ontology, or the existing Ontology Caresses.owl, with a new Class (SchoolSubject)

Results



*It may be either a new Ontology, or the existing Ontology Caresses.owl, with a new Class (SchoolSubject)

** A possible algorithm may be: when the code starts, a class is randomly selected from the *top* ones (e.g. Math, History, Science, …). For each class, all sentences (which have been prevously encoded with the GUI) are used, based on their associated property (hasPositive, hasQuestion, …). Other properties may be added (e.g. hasAnswer). For example, the system could: 1) say a positive sentence about a topic 2) ask a question 3) check if the answer is correct 4) go back to 2 until all questions (or a max number of questions have been asked). When a topic has been explored, the system should use the hierarchical structure of the Ontology to explore the next class, going more in details, until we reach the end of the dialogue tree.