FOUR GARBAGE

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Introduction

The project consists of a garbage truck that goes around picking up dustbins with different kinds of rubbish. To do this it has 5 different compartments: plastic, paper, glass, organic and waste. If the dustbins are correctly sorted then it puts the trash in the correct place, if they are not it all goes to waste.

Objective

Our garbage truck has different options of paths to take which different number of dustbins along the way. The objective of the project is to make the truck choose the most efficient route to pick more garbage. To do so we will use some artificial intelligent algorithms.

Tools

We are going to use for our project the language of python. For the graphical interface we will make use of the library pygame which serves the purpose of our application really simply and well.
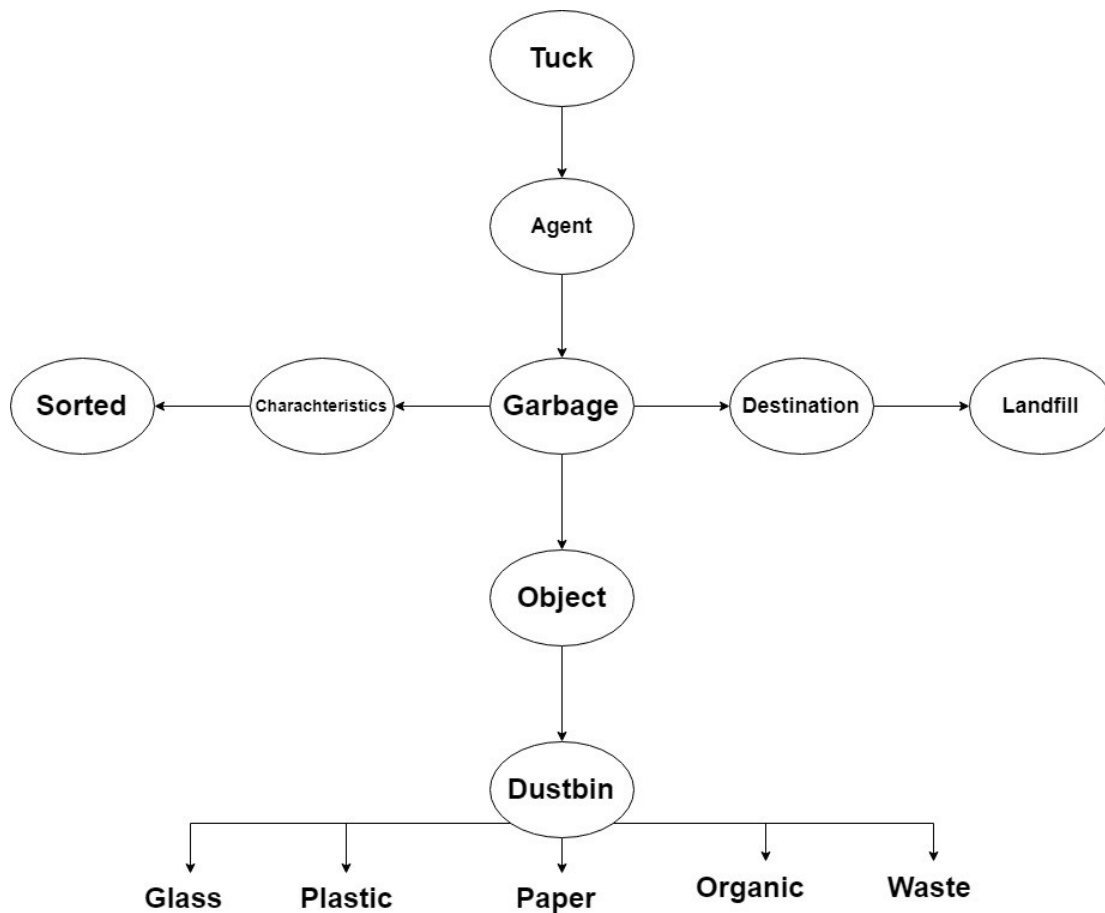
Knowledge representation

In the following points we have graphs of the semantic network and conceptual graph with the information previously explained in the introduction and objective.

- Semantic network
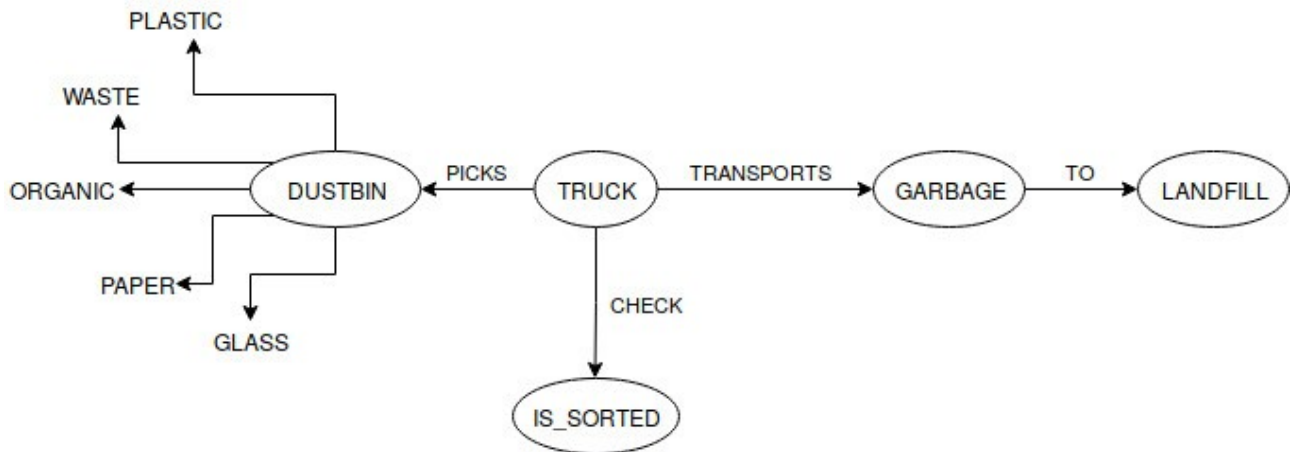
- Conceptual graph

Lastly we also have the first logic representation of the problem of picking up the trash and if it's sorted putting it in each compartment, and if it's not, going to waste.

- <u>First order logic</u>

  D = Dustbin   T = Truck
  S = Sorted P = Plastic
  PR = Paper   G = Glass
  O = Organic W = Waste

1. Sorted plastic dustbin goes to plastic truck
   For all x (P(x) and D(x) and S(x) --> P(x) and T(x))

2. Sorted paper dustbin goes to paper truck
   For all x (PR(x) and D(x) and S(x) --> PR(X) and T(x))

3. Sorted organic dustbin goes to organic truck
   For all x (O(x) and D(x) and S(x) --> O(X) and T(x))

4. Sorted glass dustbin goes to glass truck
   For all x (G(x) and D(x) and S(x) --> G(X) and T(x))

5. Any dustbin not sorted goes to waste truck
   For all x (D(x) and (not S(x)) --> W(x) and T(x))