Artifical Intelligence Problem Set

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Problem 1. 3 Different parse trees shown below

Problem 2.

A. I bought this bouquet of roses at the deli. Isn't *it* beautiful? Delis are not often described as beautiful.

- B. The children took out their lunches because *they* were hungry. Lunches are not animate so they cannot be described as hungry.
- C. The children took out their lunches, but *they* were growing mold. Hygienic children do not grow mold on themselves.
- D. The scientists are studying three species of fish. *They* are in danger of extinction. Currently, scientists are not in danger of going extinct.
- E. The scientists are studying three species of fish. They have been working for three years.

Fish do not work (in the same sense scientists do).

- F. The scientists are studying three species of fish. *They* were previously unknown. We do not discover previously unknown scientists.
- G. The scientists are studying three species of fish and how *they* swim. It is more likely that the fish are swimming, not the scientists.
- H. Before the other guests arrived, Fred murdered George and hid the body under the dining-room table, and then *he* had to be the life and soul of the party, with it there all the time. He cannot refer to George because George is dead.
- I. Before the other guests arrived, Fred murdered George and hid the body under the dining-room table, and then he had to be the life and soul of the party, with *it* there all the time.

 Once murdered, a body can be referred to an "it."
- J. What about the time you cut up tulip bulbs in the hamburgers because you thought *they* were onions? Tulip bulbs are of similar size and shape to tulip bulbs.

Problem 3.

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Lexicon:
         Denotation = Speaker.
"saw" — > Content: Saw.
"man" — > Content: Man.
"telescope" — > Content: Telescope.
Additional Rules:
Rule 1:
Create new symbol N. Assert Owns(N, Denotation (PP))
Rule 2:
Given: PP ---> Prep
    Denotation (PP) = Denotation (NP)
Rule 3:
Given: S \longrightarrow NP1
         Create new symbol E. Assert Event (E, Verb. Content)
        Assert Actor (E, Denotation (NP1))
        Assert Object (E, Denotation (NP2))
        Assert Instrument (E, Denotation (PP))
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