

Applications of Logic Programming

Exercise 1

Create a finite collection of definite clause grammar rules to check whether a sentence is grammatically correct. A sentence can be composed of the following words:

article a, the

noun girl, boy

pronoun that, this

auxiliary is

verb sleeps, likes.

A sentence must be in one of the following forms subject-predicate and subject-predicate-object.

- subject is formed out of either an article and a noun, or a pronoun. For example, a girl or that.
- predicate is either an auxiliary or a verb
- object is formed out of an article and a noun

In the subject-predicate form of a sentence, the predicate can be only sleeps. In the subject-predicate-object form of a sentence the verb can be either likes or is. If the predicate is likes, the subject is composed of an article and a noun. If the predicate is is, the subject is a pronoun.

Write a Prolog question to produce all correct sentences in the grammar.

You can test your program with the following examples:

```
this is a sleeps // False
this is a likes // False
the boy likes // False
that boy likes // False
a boy the the girl // False
this is a boy // True
that is the girl // True
the girl likes a girl // True
```