

Übungsaufgaben

Logik in der Praxis - Logikprogrammierung (Prolog)

Abgabe bis 18.11.08

Exercise 7.1 (3 Punkte)

Suppose we are working with the following DCG:

```
s --> foo,bar,wiggle.  
foo --> [choo].  
foo --> foo,foo.  
bar --> mar,zar.  
mar --> me,my.  
me --> [i].  
my --> [am].  
zar --> blar,car.  
blar --> [a].  
car --> [train].  
wiggle --> [toot].  
wiggle --> wiggle,wiggle.
```

Write down the ordinary Prolog rules that correspond to these DCG rules. What are the first three responses that Prolog gives to the query `s(X, [])`?

Exercise 7.2 (3 Punkte)

The formal language $a^n b^n - \{\epsilon\}$ consists of all the strings in $a^n b^n$ except the empty string. Write a DCG that generates this language.

Exercise 7.3 (4 Punkte)

Let $a^n b^{2n}$ be the formal language which contains all strings of the following form: an unbroken block of as of length n followed by an unbroken block of bs of length $2n$, and nothing else. For example, `abb`, `aabbbb`, and `aaabbbbbbb` belong to , and so does the empty string. Write a DCG that generates this language.