

**Exercise sheet 4**  
(Due: Monday, 10. Feb)

1. Consider the following small DCG grammar (on the web as file `ex4.pl`):

```
top_s --> s([], []).
s(G1,G3) --> np(G1,G2), vp(G2,G3).

np([gap], []) --> [].
np(G,G) --> [the, man], postmod.

postmod --> [].
postmod --> [who], s([gap], []).

vp(G,G) --> [slept].
vp(G1,G2) --> [saw], np(G1,G2).
```

Explain why the standard Prolog parser accepts the string “the man who the man saw slept” but does not accept “the man who saw slept” as a `top_s`.

2. Read Chapter 6 “Computability and Complexity” and Chapter 7 “Introduction to Parsing” from the lecture notes.