Introduction to symbolic CL (684.01) OSU Linguistics
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Exercise sheet 6
(Due: Wednesday, 21. Feb)

1. Consider the following small grammar (on the web as file `cyk/cyk_grammar.pl`):

```
% lexicon:
vp  ---> [left].
vp  ---> [duck].
vs  ---> [thought].
vs  ---> [saw].
vt  ---> [saw].
vt  ---> [loved].
det ---> [the].
det ---> [a].
det ---> [her].
n   ---> [dragon].
n   ---> [telescope].
n   ---> [man].
n   ---> [cave].
n   ---> [duck].
pp  ---> [there].
p   ---> [in].
p   ---> [at].
p   ---> [with].
np  ---> [mary].
np  ---> [midnight].

% syntactic rules:
s  ---> [np, vp].
vp ---> [vp, pp].
vp ---> [vt, np].
vp ---> [vt, s].
np ---> [det, n].
n  ---> [n, pp].
pp ---> [p, np].
```

   Pick three ambiguous example sentences licensed by this grammar (or if you like a variation of this grammar, which you should provide then) and draw the CYK table for them. For each table, add a three sentence explanation pointing to the place where the ambiguities are encoded.

   In `cyk/cyk.pl` (and with more basic output predicates in `cyk/cyk_write.pl`) you find a PROLOG implementation of the CYK algorithm. Try out your example sentences and see whether it fills the chart as you were expecting.