16-124-836
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11.1 Using the partition predicate to create a program that ask for a number and creates a lower and greater list from a given list

We can define the following rules to define the program:

```
use_module(library(hiordlib)).
partition(E,[],[],[]).
partition(E,[H|T],[H|T1],L2) :- H < E, partition(E,T,T1,L2).
partition(E,[H|T],L1,[H|T2]) :- H > E, partition(E,T,L1,T2).
```

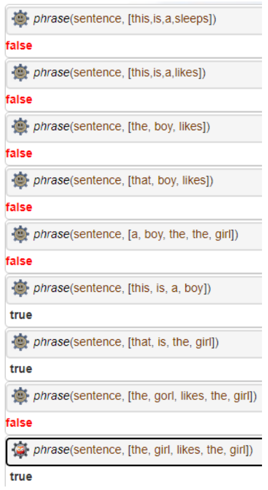
11.2 Create a finite collecton of definite clause grammar rules to check whether a sentence is grammatically correct.

```
article --> [a].
article --> [the].
noun --> [girl].
noun --> [boy].
pronoun --> [that].
pronoun --> [this].
auxiliary --> [is].
verb --> [sleeps].
verb --> [likes].

subject --> article, noun.
subject --> pronoun.
subject1 --> article, noun.
predicate --> auxiliary.
predicate --> verb.
object --> article, noun.

sentence --> sp.
sentence --> spo.
sp --> subject, [sleeps].
spo --> subject1, [likes], object.
spo --> pronoun, auxiliary, object.
```

So for testing purposes we get the following output (https://swish.swi-prolog.org/):



```
phrase(sentence, [this,is,a,sleeps])
false
phrase(sentence, [this,is,a,likes])
false
phrase(sentence, [the, boy, likes])
false
phrase(sentence, [that, boy, likes])
false
phrase(sentence, [a, boy, the, the, girl])
false
phrase(sentence, [this, is, a, boy])
true
phrase(sentence, [that, is, the, girl])
true
phrase(sentence, [the, gorl, likes, the, girl])
false
phrase(sentence, [the, girl, likes, the, girl])
true
```