September 30, 2024 - Linguistic resources for NLP – Part 1 C.Bosco

Exercises on Constituency parsing

Given this set of productions (grammar):

R.1) Noun > NP
R.2) Determiner + NP > NP
R.3) Adjective + NP > NP
R.4) NP + Adjective > NP

and this lexicon

cat = Noun
the = Determiner
a = Determiner
this = Determiner
large = Adjective
red = Adjective

prove which of the following groups of words are NPs according to the grammar (can be rewritten applying the productions):

- the cat
- the this red cat
- the great red
- large this cat
- the big cat
- a large cat red

Example of a solution:

- how can I prove that the word group *the cat* is an NP that can be formed using these rules and this lexicon?

1) With the help of the lexicon, I rewrite *the* as a **Determiner**
2) with the help of the lexicon, I rewrite *cat* as a **Noun**
3) *the cat* is then rewritten as **Determiner + Noun**
4) using R.1 I rewrite Determiner + Noun as **Determiner + NP**
5) using R.2, I rewrite Determiner + NP as **NP**
According to the given grammar, *the cat* is therefore an NP.