Parsing

Einführung in die Computerlinguistik – Übung 08.01.2016

Write

1. Open console (Use MobaXterm on Windows)
2. Only if you are on your private computer
   ```
   ssh username@remote.cip.ifi.lmu.de
   ```
3. Login to my machine
   ```
   ssh tbd
   ```
4. Enable chat
   ```
   mesg y
   ```
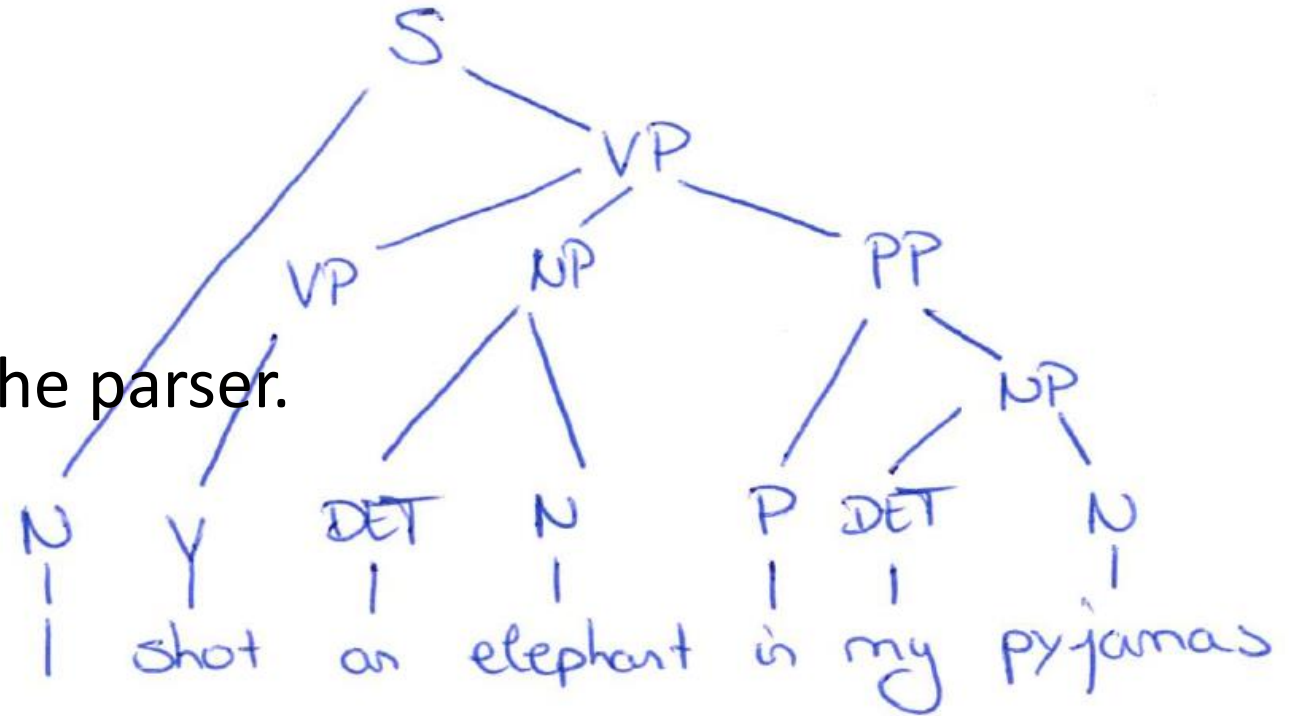5. Send answers or questions
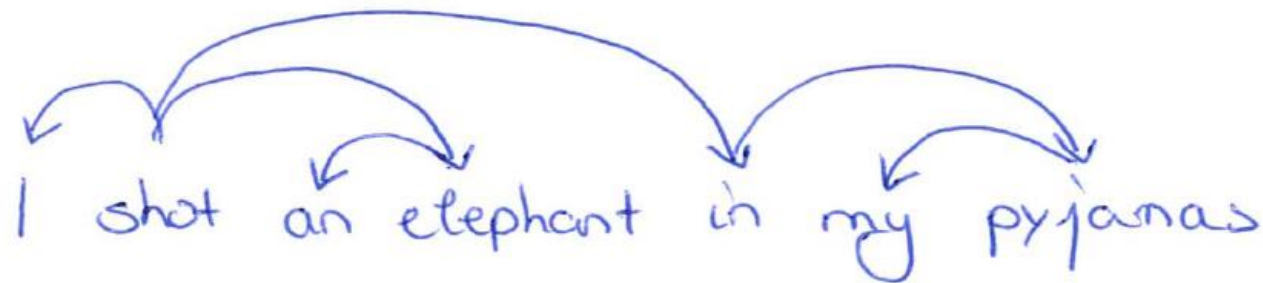   ```
   echo "bla bla" | write kannk
   ```

# Parsing

1. Go to http://nlp.Stanford.edu:8080/parser

2. Parse the sentence "I shot an elephant in my pyjamas"

3. What types of output do you get from the parser? POS tags, parse tree, dependencies, statistics about tokens and processing time

# Parsing



4. Draw the tree you get from the parser.

5. Which dependencies does the parser find for this sentence?

# Parsing

6. Download "smallParser.py" from the course page.
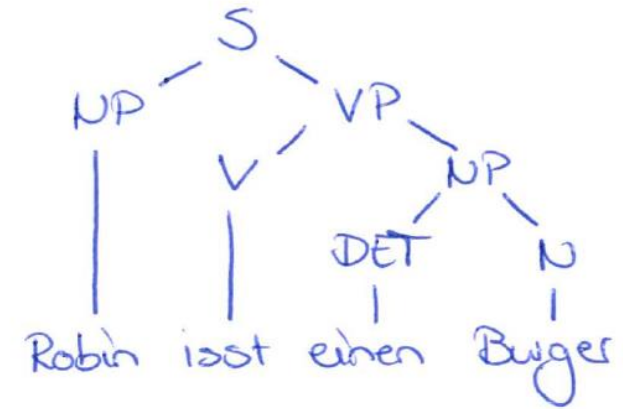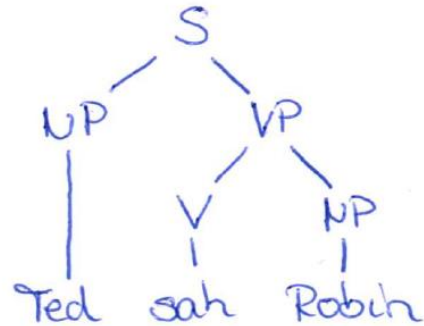
7. Run smallParser.py. What does it do?
   `Hint: "python smallParser.py"`

8. How can you use it to parse a sentence? python smallParser.py "This is a sentence"
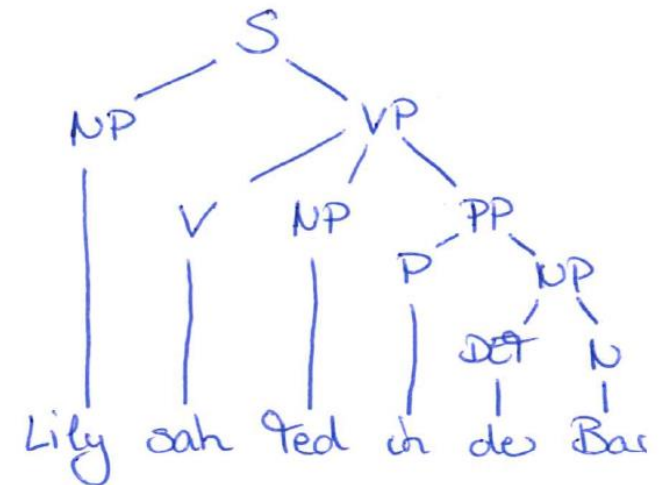
# Parsing

9. Parse the following sentences and draw the corresponding trees:
   1. "Ted sah Robin"
   2. "Robin isst einen Burger"
   3. "Lily sah Ted in der I



10. What do the following letters of the output stand for?
    1. S Sentence
    2. NP Noun phrase
    3. V Verb
    4. VP Verb phrase
    5. PP Prepositional phrase
    6. P Preposition

# Parsing & CFGs

11. Try to parse the following sentences:
    1. "Ted liebt Robin"
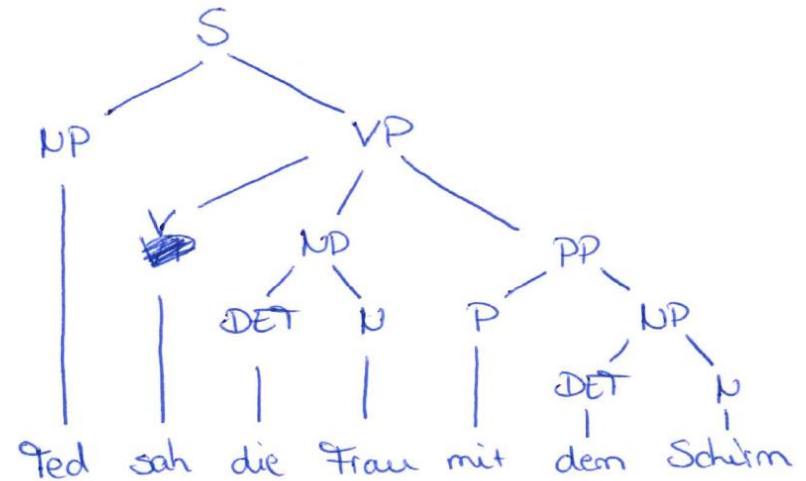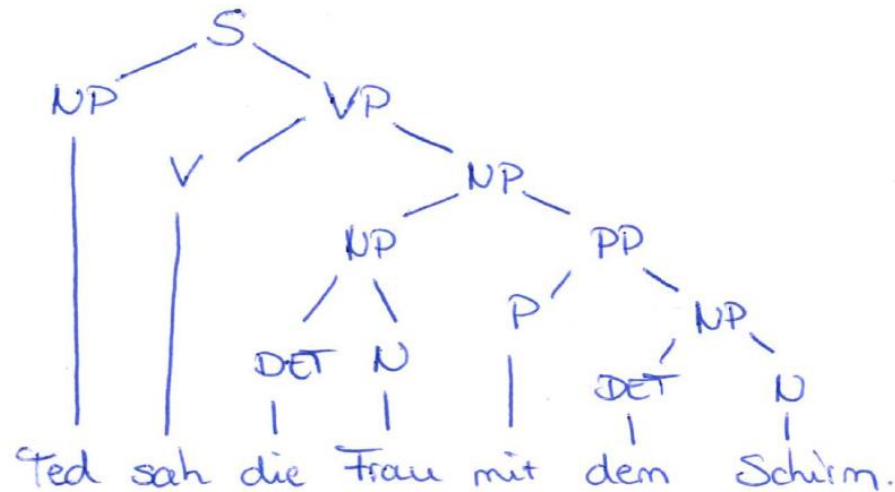    2. "Robin isst einen Salat"
    3. "Lily sah Ted auf der Bar"

12. What happens? And why? The parser returns an error, because some words are  not part of the grammar (yet).

13. Can you extend the grammar such that you can parse the sentences?
    `Hint: look at grammar1 and find the words`

# Parsing & CFGs

14. Draw the parse tree for the following sentence: "Ted sah die Frau mit dem Schirm"



15. Now parse the sentence with smallParser.py. Do you get the same result? Explain why! The sentence has two possible parses (see trees), one does make sense, one does not.

# Parsing & CFGs

16. Extend the grammar so that the following sentence can be parsed:
    "die Maus jagt die Katze"

17. Which parse do you get? What is the problem? This is ambiguous as well. One of the possibilities does not make sense.

18. Can you correct the grammar?

# Parsing & CFGs

19. Try to parse the following sentence: "Lily sah einen Frau"

20. What happens? Which problem do you see? This is possible even though it should not be (should be "eine Frau").

21. Can you correct the grammar? Split articles and nouns in groups depending on their gender; DET_fem -> "die" | "eine"; NP -> DET_fem N_fem | DET_neut N_neut | DET_masc N_masc ...

    Hint: which article goes with which nouns?

# Parsing & CFGs

22. Extend the grammar such that attributive and predicative adjectives are covered! Limit yourself to 3 to 5 rules/rule modifications.

23. Use your new grammar to parse two sample sentences, one with an attributive and one with a predicative adjective.

Examples:

Der Schirm ist gelb.

Ted sieht die schöne Frau.