

Tree-Adjoining Grammar - Exercises (17.11.2009)

Due on Thursday 26.11.2009

1. For the string language $\{a^n b^n c^n, n \geq 1\}$,
 - a) Provide a **TAG** that generates the exact language with the help of adjunction constraints; (15 points)
 - b) With the above grammar, discuss what string language will be generated if all adjunction constraints are removed from the elementary trees. (15 points)
2. For the following three sentences
 - (1) The book is new
 - (2) John hands Mary the new books
 - (3) To whom does John hand the new books

Please

- a) Provide a **LTAG** that can analyze all these sentences (20 points)
- b) Provide the derived and derivation trees for each sentence (20 points)
- c) Discuss whether your grammar overgenerates. If yes, restrict your grammar with various constraints discuss in the lecture and elaborate on your analysis (30 points)

Total points: 100. Pass: 50 points.