



Tutoriaal 6

Rekenaarwetenskap 324 Teoretiese Rekenaarwetenskap

Doel van Tutoriaal

Die volgende onderwerp word in hierdie tutoriaal aangespreek:

- LR(0), SLR(1), LR(1), LALR(1) parsing.

LL(1) grammars

Vraag 1

Consider the following grammar:

$$S \rightarrow S (S) \mid \varepsilon$$

- Construct the DFA of LR(0) items.
- Construct the SLR(1) parsing table.
- Show the parsing stack and actions of the SLR(1) parser for the input string $((()))$.
- Is the grammar LR(0)? If not, describe the LR(0) conflict(s).
- Construct the DFA of LR(1) items.
- Construct the LR(1) parsing table.
- Construct the DFA of LALR(1) items.
(It is also a good exercise to construct the DFA of LALR(1) items from the DFA of LR(0) items using propagation of the lookaheads.)
- Construct the LALR(1) parsing table.

Vraag 2

Construct the DFA of LR(1) items for the grammar $A \rightarrow a A a \mid \varepsilon$, and show that the grammar is not LR(1).