

Exercise Sheet 6

Assignment 6.1 LR(1)-Parser

Consider the following grammar G with fresh start symbol S' :

$$\begin{aligned} S' &\rightarrow A^0 \\ A &\rightarrow ABa^0 \mid c^1 \\ B &\rightarrow b^0 \mid \epsilon^1 \end{aligned}$$

1. Draw the canonical $LR(1)$ -automaton $LR(G, 1)$.
2. Give the action table.
3. Give all computation steps in order to parse an example word w produced by the grammar, i.e., give all intermediate steps $(q_0, w) \vdash^* (f, \epsilon)$.
4. Consider the grammar G together with the production $A \rightarrow B$.
Is the resulting grammar $LR(1)$?