SLR table construction

Consider the following grammars and sentences:
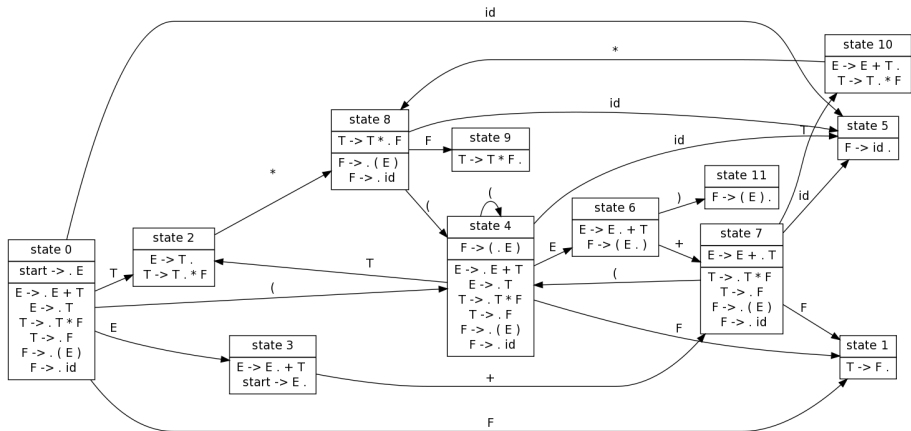$S \rightarrow aS|Ba \quad B \rightarrow Ba|b$ \qquad sentence: "aaba"

LR(0) vs. SLR parsing

Consider the usual expression grammar:
$E' \rightarrow E \quad E \rightarrow E + T | T \quad T \rightarrow T * F | F \quad F \rightarrow (E) | id$
build LR(0) and SLR tables for the grammar, and then parse the sentence:

id∗**id**+**id**

http://smlweb.cpsc.ucalgary.ca/start.html

LL(1) vs. SLR(1)

Consider the following grammars:

- $S \rightarrow AaAb|BbBa \quad A \rightarrow \epsilon \quad B \rightarrow \epsilon$
- $S \rightarrow SA|A \quad A \rightarrow a$

Build parsing tables for LL(1) and SLR(1)

Towards more powerful parsers

Consider the following grammar and derive the SLR parsing table:
$S \rightarrow L = R | R \quad L \rightarrow *R | id \quad R \rightarrow L$

Towards more powerful parsers

Viable prefix

A Viable prefix is a prefix of a right-sentential form that can appear on the stack of a shift-reduce parser.
We say item $A \to \beta_1 \cdot \beta_2$ is valid for a viable prefix $\alpha\beta_1$ if there is a derivation $S \Rightarrow^* \alpha A w \Rightarrow \alpha\beta_1\beta_2 w$.