Ps2 assignment handin

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Task 1

See attached image. All arrows point to right/down unless drawn otherwise.

There is a shift-reduce conflict in state I_9 (from state I_0, recieve symbol E). Here, a B can have two prodution rules; $B \to \cdot Bb$ and $E \to E \cdot B$. The same is in state I_6 with production rules $B \to \cdot Bb$ and $D \to d \cdot BEF$.

Task 1b

We augment the grammar by adding a production $A' \to A'$, such that the grammar has an accepting end of input.

$FOLLOW(A') \to \{\$\}$
$FOLLOW(A) \to \{\$\}$
$FOLLOW(B) \to \{\$, b, e\}$
$FOLLOW(D) \to \{\$\}$
$FOLLOW(E) \to \{b, c, f\}$
$FOLLOW(F) \to \{\$\}$

In the automata there is no state with two or more terminating rules ("dot placed to the far right", e.g. $A \to \gamma\cdot$) where the follow set of both non-terminals have any shared element. Also, there are no states where terminating rules are together with a nonterminating rule (dot is not to the far right). Therefore, there will be no conflict when making the SLR(1) table. Thus, the provided grammar is SLR(1).

Task 2

Okay. My output seems to match the .tree.correct files (run checkCorrect.sh if you will)

References