

Ps2 assignment handin

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Task 1

Transform to $LL(1)$:

$$S \rightarrow sCT|sCTwB$$

$$C \rightarrow c$$

$$T \rightarrow t|e$$

$$B \rightarrow Ba|a$$

$$B \rightarrow aB'$$

right-recursive

$$B' \rightarrow \epsilon|aB'$$

right-recursive

$$S' \rightarrow scT$$

factoring

$$S'' \rightarrow \epsilon|wB$$

factoring

$$S \rightarrow S'S''$$

factoring

Task 1b

$$FIRST(S) \rightarrow FIRST(S') \rightarrow \{s'\}$$

$$FIRST(B) \rightarrow \{a'\}$$

$$FIRST(B') \rightarrow \{\epsilon', a'\}$$

$$FIRST(T') \rightarrow \{sc'\}$$

$$FOLLOW(S) \rightarrow \{\$'\}$$

$$FOLLOW(S') \rightarrow \{\$'w\}$$

$$FOLLOW(B) \rightarrow \{\$'\}$$

$$FOLLOW(B') \rightarrow \{\epsilon'\}$$

$$FOLLOW(T) \rightarrow \{\$'\}$$

T	w	c	t	a	s	\$
S		S'			$S \rightarrow S'S''$	
S'					$S' \rightarrow scT$	
S''	$S' \rightarrow wB$					
C		$C \rightarrow c$				
T	$T \rightarrow w$		$T \rightarrow t$			$T \rightarrow \epsilon$
B				$B \rightarrow aB'$		
B'				$B \rightarrow aB'$		$B' \rightarrow \epsilon$

Task 2

Note: my VSL parse trees do not exactly match the expected output- an extra node is added for the parenthesis. I hope this is okay and simply a trivial error.

References