

LR(1) parser, also known as *Shift-Reduce* parser.

$$E \rightarrow E + T \mid E - T \mid T$$

$$T \rightarrow T * F \mid T / F \mid F$$

$$F \rightarrow (E) \mid n$$

let  $n$  be any positive integer.

LR(1) parsing table: (\$ is the end of the expression)

	$n$	$+$	$-$	$*$	$/$	$($	$)$	$\$$	$E$	$T$	$F$
0	shift 5					shift 4					
1		shift 6	shift 6						1	2	3
2		$E \rightarrow T$	$E \rightarrow T$	shift 7	shift 7		$E \rightarrow T$	accept			
3		$T \rightarrow F$	$T \rightarrow F$	$T \rightarrow F$	$T \rightarrow F$		$T \rightarrow F$	$E \rightarrow T$			
4	shift 5					shift 4		$T \rightarrow F$			
5		$F \rightarrow n$	$F \rightarrow n$	$F \rightarrow n$	$F \rightarrow n$		$F \rightarrow n$	$F \rightarrow n$	8	2	3
6	shift 5					shift 4					
7	shift 5					shift 4				9	3
8		shift 6	shift 6	$*$		shift 4					10
9		$E \rightarrow E + T$ $E \rightarrow E - T$	$E \rightarrow E + T$ $E \rightarrow E - T$	shift 7	shift 7		shift 11	$E \rightarrow E + T$ $E \rightarrow E - T$			
10		$T \rightarrow T * F$ $T \rightarrow T / F$	$T \rightarrow T * F$ $T \rightarrow T / F$	$T \rightarrow T * F$ $T \rightarrow T / F$	$T \rightarrow T * F$ $T \rightarrow T / F$		$T \rightarrow T * F$ $T \rightarrow T / F$	$T \rightarrow T * F$ $T \rightarrow T / F$			
11		$F \rightarrow (E)$	$F \rightarrow (E)$	$F \rightarrow (E)$	$F \rightarrow (E)$		$F \rightarrow (E)$	$F \rightarrow (E)$			

Note: If the entry contains two reduction rules, which one should be used will be determined by the terminal symbol popped from the stack.