

The LR parsing algorithm (edited from a current Wikipedia article on LR parsing)

1. The stack is initialized with [0]. The top of the stack is `tos`; `tos` is the current state.
2. Lookup `action[tos, input]`
There are four cases:
 - a. *shift sn*:
 - i. the current terminal is removed from the input stream
 - ii. the state `n` is pushed onto the stack and becomes the current state
 - b. *reduce rm*:
 - i. the number `m` is written to the output stream
 - ii. for every symbol in the right-hand side of rule `m`, a state is removed from the stack
 - iii. given the state that is then on top of the stack is `tos`, and the left-hand side of rule `m` is `lhs`, push `goto [tos, lhs]` to stack
 - c. *accept*: the string is accepted
 - d. *no action*: a syntax error is reported
3. Step 2 is repeated until either the string is accepted or a syntax error is reported.