An LR(0) item is a 2-tuple (a pair): (production, dot).
An LR(1) item is a 3-tuple: (production, dot, lookahead).

```plaintext
// I is a set of LR(1) items
fn lr1_closure(I) {
    while changed {
        for each item (P, d, a) in I {
            if d == len(P) {
                continue;
            } else if P[d] is a terminal {
                continue;
            } else { // P[d] is a nonterminal {
                for each production Q targeting P[d] {
                    for each terminal b in FIRST(P[d + 1:] + a) {
                        insert(I, (Q, 0, b));
                    }
                }
            }
        }
    }
}

// I is a LR(1) set of items
// X is a symbol in our grammar
fn lr1_goto(I, X) {
    result = {}
    for (P, d, a) in I {
        if d == len(P) {
            continue;
        } else if P[d] == X {
            insert(result, (P, d + 1, a));
        }
    }
}

// G is a grammar
fn lr1_compute_states(G) {
    start = closure({ (start' -> start, 0, $) });
    states = { start };;
    while changed {
        for state in states {
            for symbol in G {
                next_state = lr1_closure(lr1_goto(state, symbol));
                insert(states, next_state);
            }
        }
    }
}
```
LALR(1)

\[ A \rightarrow a, c \]
\[ B \rightarrow b, d \]

\[ A \rightarrow a, c/d \]
\[ B \rightarrow b, c/d \]

\[ A \rightarrow a, c \]
\[ A \rightarrow a, d \]
\[ B \rightarrow b, c \]
\[ B \rightarrow b, d \]

LR(0) ⊆ SLR ⊆ LALR(1) ⊆ LRC(1)

the same # states
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