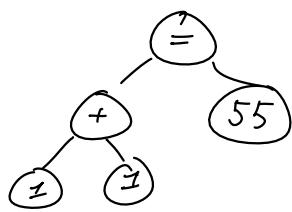


string \rightarrow token list



token list \rightarrow expr



$$\langle \text{expr} \rangle ::= \begin{cases} \text{ID} \\ \text{after } (\langle \text{expr} \rangle) \\ \langle \text{expr} \rangle + \langle \text{expr} \rangle \end{cases}$$

Left-recursive grammar is one in which it is possible to follow from a rule back to itself without reaching a terminal on the left.
(token)

These parsers we are building are called LL parsers.

$$\langle \text{expr} \rangle ::= \begin{cases} \text{ID} \\ \langle \text{expr} \rangle + \langle \text{expr} \rangle \end{cases}$$

$$\langle \text{expr} \rangle ::= \begin{cases} \text{prim-expr} \\ \langle \text{prim-expr} \rangle (+ \langle \text{prim-expr} \rangle)^+ \end{cases}$$

$$\langle \text{expr} \rangle ::= \begin{cases} \text{ID} \\ \langle \text{tail} \rangle \end{cases}$$

$$\langle \text{prim-expr} \rangle ::= \begin{cases} \text{ID} \end{cases}$$

$$\langle \text{tail} \rangle ::= \epsilon \mid + \langle \text{expr} \rangle$$