

Syntax

= is the way in which words (tokens)
are put together to form phrases or sentences

examples: arithmetic expressions.

$1+2*3-4$	$1+3*(2+7)$	⊕ correct.
$1+2*3$		⊖ error.
$1+*3$		
$1+(*3)$		

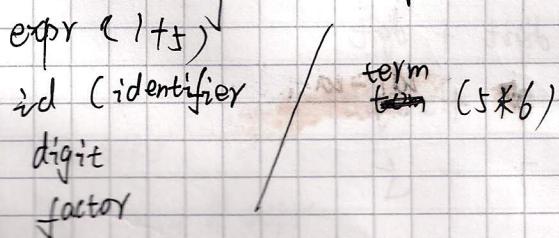
A content free grammar describes a language.

(here the language of arithmetic expression). what is needed.

1) Start symbols

2) Terminal symbols, such as digits 0, 1, ..., 9, a, b, C, +, -, *, ., (,)

3) Nonterminal symbols, e.g.



4) productions.

$$S \rightarrow \text{expr} + \text{expr}$$

$$\text{expr} \rightarrow \text{expr} - \text{expr}$$

$$\text{expr} \rightarrow \text{digit}$$

$$\text{digit} \rightarrow 0$$

$$\text{digit} \rightarrow 1$$

$$\text{digit} \rightarrow 2$$

$$\text{digit} \rightarrow 9$$

$$\text{digit} \rightarrow 0 | 1 | 2 | \dots | 9$$