Language and Grammer

2.1 Language

language: set of sentence.
sentence: set of word, grammer.
word: set of alphabet.

Alphabet

T - set of word. ex) set of ab: aaababaa.
set of 01: 01011101101.

T^* - Any sentence that can be made into a word set.

T^+ - T^* minus ϵ only.

Therefore, Language is a subset of the T^* set.

String

ω - string.

Length

$|\omega|$ - length of string.

Empty string

ϵ or λ

Concatenation

String u, v

$u \cdot v$ - combine.

$u\epsilon = u = \epsilon u$

$\forall\, u, v \in T^*, uv \in T^*$ - If u,v is configured as 01, uv is also configured as 01.

$LL^{'} = \{xy | x \in L\, and\, y \in L^{'}\}$

$L^0 = \{\epsilon\}$

$L^n = LL^{n-1}\ (n \geq 1)$

L^*: $L^0 \cup L^1 \cup L^2 \cup L^3 \cdots \cup L^n \cdots = U_{i=0}^{\infty} L^i$

L^+: $L^n - L^0$