→ Ceterministic parsing → LL(K) → Top down.
→ LL(0) → Bottom up.
. Left to Right ↵ ↳ left most dervasion.

→ LL(K) → Look a head :-

$S \to abAbb$
$A \to aA / a$ ⟹ $LL_2(S \to abAbb) = \{ab\}$.
$LL_3(S \to abAbb) = \{ab$. The 'A' derivasion$\}$
$= \{aba\}$.

[1] First :-

Rules
→ $first_K(\lambda) = \{\lambda\}$.
→ $first_K(a, b, \_\_) = \{a, b, \_\_\}$.
→ $first_K(A \to a_1 a_2 \_\_ a_n) = trunk_K(A \to a_1 a_2 \_\_ a_n)$.
→ $first_K(A \to aB) = first_K(a) \cdot first_K(B)$ and $trunk_K$ for it $\xrightarrow{if}$ $trunk_2((a), (b, bbb)) = \{ab\}$.

Note :-

Trunk mean that we stop after having our length 'K' → for example $trunk_3(A \to a_1 a_2 \_\_ a_n) = \{a_1 a_2 a_3\}$.
$first_K(A) = first_1(A)$ $\xrightarrow{where}$ 'A' isn't Recersive.

Ex 1:

$S \to ABCabcd$
$A \to a / \lambda$
$B \to b / \lambda$
$C \to c / \lambda$

$\xRightarrow{ans}$

$first_1(S) = first_1(A) \cdot first_1(B) \cdot first_1(C) \cdot \{abcd\}$
$first_1(A) = \{a, \lambda\}$
$first_1(B) = \{b, \lambda\}$
$first_1(C) = \{c, \lambda\}$
$\therefore first_1(S) = \{a, \lambda\} \cdot \{b, \lambda\} \cdot \{c, \lambda\} \cdot \{abcd\}$
$= \{a, b, c\}$.
$\therefore first_2(S) = \{ab, ac, aa, bc, ba, ca\}$.
$\therefore first_3(S) = \{abc, aba, aca, aab, bca, bab, cab\}$.

[2] Follow :-

Rules $\to$ follow(S) = $\{\lambda\}$.

$\to$ $A \to aABC$ $\to$ follow(A) = {first(B) . first(C)}.

Ex:

$S \to AB$

$A \to aC \,/\, bB$

$B \to AD \mid CA$

$C \to a$

$D \to b$

$\xRightarrow{\text{ans}}$

$follow_2(S) = \{\lambda\}$

$follow_2(A) = \{first_2(B) . first_2(D) . follow_2(B)\}$

$follow_2(B) = \{follow_2(S) . follow_2(A)\}$

$follow_2(C) = \{follow_2(A) . first_2(A)\}$

$follow_2(D) = follow_2(B)$