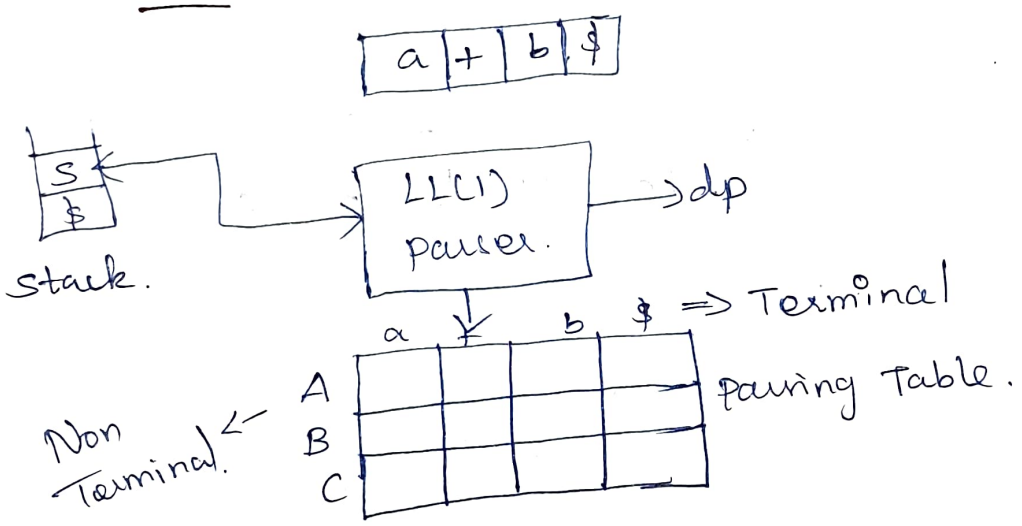
LL(parsing)

→ It accepts (LL) grammar and its denoted as LL(K)
→ The first L→ represents the I/P from Left to right
→ The second L→ represents the left most derivations.
→ K represents the no of look ahead [How many times you trag the list generally K=1].

LL(K) = LL(1).

Structure of LL(1)



Construction of LL(1)

① First() | Leading ()
Follow() | Trailing ().
② parsing Table.
③ stack implementation.
④ Parse Tree

Eg: Construction of predictive parse LL(1) I/P: (id+id)

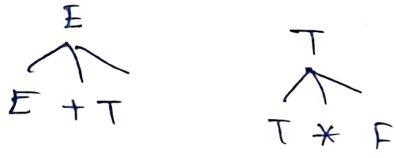
G = E → E+T | T
T → T*F | F
F → (E)
F → id.

→

E → E+T → LR
E → T
T → T*F → LR
T → F
F → (E)
F → id.

Removing Left Recursion

① → Starting & production same element.



② Formula

A → Aα | β → A → βA'
A' → αA' | ∈.

E → E+T | T
T → T*F | F. ⟹ E → TE' | T → FT'
E' → +TE' | ∈ | T' → *FT' | ∈.

Re-write the Grammar

E → E+T
E → T
T → T*F
T → F
F → (E)
F → id.

→

E → TE'
E' → +TE' | ∈
T → FT'
T' → *FT' | ∈.
F → (E)
F → id.

E → TE'
E' → +TE'
E' → ∈
T → FT.
T' → *FT'
T' → ∈
F → (E)
F → id.

Compute of First

First (E): { (, id }
(E') { +, ∈ }
(T) { (, id }
(T') { ∈, * }
(F) { (, id }

Compute of follow

Follow (E) = { $,) }
(E') = { $,) }
(T) = { +, $,) }
(T') = { +, $,) }
(F) = { *, +, $,) }

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Parsing Table:

	+	*	(	)	id	$
E			$E \to TE'$		$E \to TE'$	
E'	$E' \to +TE'$			$E' \to \epsilon$		$E' \to \epsilon$
T			$T \to FT'$		$T \to FT'$	
T'	$T' \to \epsilon$	$T' \to *FT'$		$T' \to \epsilon$		$T' \to \epsilon$
F			$F \to (E)$		$F \to id$	

Stack Implementation

Stack	I/p String	Action.
$E	(id+id)$	$E \to TE'$
$E'T	(id+id)$	$T \to FT'$
$E'T'F	(id+id)$	$F \to (E)$.
$E'T')E(	id+id)$	$E \to TE'$
$E'T')E'T	id+id)$	$T \to FT'$
$E'T')E'T'F	id+id)$	$F \to id$.
$E'T')E'id	+id)$	$T' \to \epsilon$.
$E'T')E'	+id)$	$E' \to +TE'$
$E'T')E'T+	id)$	$T \to FT'$
$E'T')E'T'F	id)$	$F \to id$
$E'T')E'id	)$	$T' \to \epsilon$
$E'T')	)$	$E' \to \epsilon$
$E'	$	$T' \to \epsilon$
$	$	Accept