

SLR(1) Parse Table

প্রতিটি non terminal এর প্রতি first set ও follow set দেখা রয়েছে।

পুরাণ:

First set

First (E)

Follow (T)

Follow (F)

কার প্রিস্ট করা রয়েছে,

$$\text{First}(E) = \{ C, \text{id} \}$$

$$E \rightarrow E + T$$

$$E \rightarrow T$$

$$\text{First}(T) = \{ C, \text{id} \}$$

$$T \rightarrow T * F$$

$$T \rightarrow F$$

$$\text{First}(F) = \{ C, \text{id} \}$$

$$F \rightarrow (E)$$

$$F \rightarrow \text{id}$$

Others

$$\text{First}(F) \Rightarrow \{ *, \text{id}, \epsilon \}$$

$$E \rightarrow F T G$$

$$* T G$$

$$* * G$$

$$\text{First}(T) = \{ \epsilon \}$$

$$\text{First}(G) = \{ C, \epsilon \}$$

এখন, G এর first set কে জড়িত করা যাবে, তবে এটি কোথায় পাওয়া যাবে?

Follow set

Follow (E)

Follow (T)

Follow (F)

$E \rightarrow E + T$	(1)
$E \rightarrow T$	(2)
$T \rightarrow T * F$	(3)
$T \rightarrow F$	(4)
$F \rightarrow (E)$	(5)
$F \rightarrow \text{id.}$	(6)

first set:

- কোথায় কোথায় production head
- ২ E এর আইডি identify
- তার production body রে একাই first এ তার পাশে তার আমার first,
- ↳ non terminal রে first-set নিয়ে যেতে নির্ভর না
- তার non terminal শীলার আই first set এর element হুলো -
- E এর first set এ copy কর
- যাবে,
- Terminal হলে direct first set এ মাত্র
- C রে enough problem

E → F + TG
* + TG
id + TG
ε + TG

$$\text{first}(E) = \{*, \text{id}, +\}$$

$$\text{first}(E) = \{*, \text{id}, +, C, \epsilon\}$$

$$\# \text{ first}(\epsilon) = \emptyset, \epsilon$$

Phase: 01:

$$\begin{array}{l} E \rightarrow TE' \\ E' \rightarrow +TE \mid \epsilon \\ T \rightarrow FT' \\ T' \rightarrow *FT \mid \epsilon \\ F \rightarrow (E) \mid \text{id.} \end{array}$$

$$\begin{array}{l} Y^T \\ E \rightarrow TE' \\ E' \rightarrow +TE \\ E' \rightarrow \epsilon \\ T \rightarrow FT' \\ T' \rightarrow *FT \\ T' \rightarrow \epsilon \\ F \rightarrow (E) \\ F \rightarrow \text{id.} \end{array}$$

$$\text{First}(E) = \{ \text{id}, \epsilon \}$$

$$\text{First}(E') = \{ +, \cdot, \epsilon \}$$

$$\text{First}(T) = \{ \text{id}, \epsilon \}$$

$$\text{First}(T') = \{ *, \epsilon \}$$

$$\text{First}(F) = \{ (, \text{id}) \}$$

example 02:

$$\begin{array}{l} S \rightarrow Bb \\ S \rightarrow Cd \\ B \rightarrow aB \\ B \rightarrow \epsilon \\ C \rightarrow cC \\ C \rightarrow \epsilon \\ \text{First}(S) = \{ a, b, c, d \} \\ \text{First}(B) = \{ a, \epsilon \} \end{array}$$

$$\text{First}(C) = \{ c, \epsilon \}$$

$$\text{Follow}(S) = \{ \$ \}$$

$$\text{Follow}(B) = \{ b, \}$$

$$\text{Follow}(C) = \{ d \}$$

example 03:

$$S \rightarrow ABcDE$$

$$A \rightarrow a$$

$$A \rightarrow \epsilon$$

$$B \rightarrow b$$

$$B \rightarrow \epsilon$$

$$C \rightarrow c$$

$$D \rightarrow d$$

$$D \rightarrow \epsilon$$

$$E \rightarrow 'e \mid \epsilon$$

$$\text{First}(S) = \{ a, b, c, \epsilon \}$$

$$\text{First}(A) = \{ a, \epsilon \}$$

$$\text{First}(CE) \rightarrow \{ e, \epsilon \}$$

$$\text{First}(B) = \{ b, \epsilon \}$$

$$\text{First}(C) = \{ c \}$$

$$\text{First}'(D) = \{ d, \epsilon \}$$

$$\text{Follow}(S) = \{ \$ \}$$

$$\text{Follow}(A) = \text{First}(B) = \{ b, c \}$$

$$\text{Follow}(B) = \text{First}(C) = \{ c \}$$

$$\text{Follow}(C) = \text{First}(D) = \{ d, e \}, \$$$

$$\text{Follow}(D) = \text{First}(E) = \{ e, \$ \}$$

$$\text{Follow}(E) = \{ \cancel{e} \} \quad \{ \$ \}$$

$S \rightarrow AB\varepsilon$

$A \rightarrow a|b|\varepsilon$

$B \rightarrow c|d|\varepsilon$

$C \rightarrow e|f|\varepsilon$

$$\text{First}(C) = \{e, f | \varepsilon\}$$

$$\text{First}(B) = \{c, d, \varepsilon\}$$

$$\text{First}(A) = \{a, b, \varepsilon\}$$

$$\text{First}(S) = \{a, b, c, d, e, f | \varepsilon\}$$