



ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ



Course: Compilation

Group: I4-GIC-A

Name of Students

LIM KITY

ID of Students

e20221479

Score

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Lecturer: Mr. OL Phearun

Academic year: 2025 ~ 2026

SLR-V2 Parsing (Table)

1. Grammar

$S' \rightarrow S(0)$
 $S \rightarrow CC(1)$
 $C \rightarrow cC \mid d(2, 3)$

state	ACTION			GOTO	
	c	d	\$	S	C
0	s3	s4	-	1	2
1	-	-	acc	-	-
2	s6	s7	-	-	5
3	s3	s4	-	-	8
4	r3	r3	-	-	-
5	-	-	r1	-	-
6	s6	s7	-	-	9
7	-	-	r3	-	-
8	r2	r2	-	-	-
9	-	-	r2	-	-

Check input: cdc, ccdc, cdccd, cdcdc, cddcccd,

2. Grammar

- (1) $S \rightarrow hB\epsilon$
- (2) $B \rightarrow BA$
- (3) $B \rightarrow \epsilon$
- (4) $A \rightarrow x$
- (5) $A \rightarrow t$

State	ACTION					GOTO		
	h	x	t	e	\$	S	B	A
0	s2					1		
1					acc			
2		r3	r3	r3			3	
3		s6	s7	s4				5
4					r1			
5		r2	r2	r2				
6		r4	r4	r4				
7		r5	r5	r5				

Parsing the string: hxe, httxe, htxe, httxxe

3. Grammar

- (1) $E \rightarrow E + T$
- (2) $E \rightarrow T$
- (3) $T \rightarrow T * F$
- (4) $T \rightarrow F$
- (5) $F \rightarrow (E)$
- (6) $F \rightarrow id$

State	Action						Goto		
	id	+	*	()	\$			
0	S5			S4			1	2	3
1		S6				accept			
2		R2	S7		R2	R2			
3		R4	R4		R4	R4			
4	S5			S4			8	2	3
5		R6	R6		R6	R6			
6	S5			S4				9	3
7	S5			S4					10
8		S6			S11				
9		R1	S7		R1	R1			
10		R3	R3		R3	R3			
11		R5	R5		R5	R5			

Parsing the string: id * id, id * (id), id + (id + id), (id + id) * id, id + (id * id)

1. Grammar

$$S' \rightarrow S \ (0)$$

$$S \rightarrow CC \ (1)$$

$$C \rightarrow cC \mid d \ (2, 3)$$

state	ACTION			GOTO	
	c	d	\$	S	C
0	s3	s4	-	1	2
1	-	-	acc	-	-
2	s6	s7	-	-	5
3	s3	s4	-	-	8
4	r3	r3	-	-	-
5	-	-	r1	-	-
6	s6	s7	1	-	9
7	-	-	r3	-	-
8	r2	r2	-	-	-
9	-	-	r2	-	-

Check input: cdc, ccdc, cdccd, cdccdc, ccddecd,

Check input:

+ edc

State : $S_0 S_3 S_4 S_8 S_2 S_6$
 Symbol : $\underline{c} \ \underline{d} \ \cancel{C} \ C \ C \text{ error}$

+ edcde

State : $S_0 S_3 S_4 S_8 S_2 S_6$
 Symbol : $\underline{c} \ \underline{d} \ \cancel{C} \ C \ C \text{ error}$

+ edcced

State : $S_0 S_3 S_4 S_8 S_2 S_6 S_1 S_9 S_5 S_2$
 Symbol : $\underline{c} \ \cancel{d} \ \cancel{C} \ C \ \cancel{C} \ C \ C \ S \text{ Accept}$

+ edccdc

State : $S_0 S_3 S_4 S_8 S_2 S_6 S_7$
 Symbol : $\underline{c} \ \underline{d} \ \cancel{C} \ C \ c \ d \text{ error}$

+ edccdc

State : $S_0 S_3 S_4 S_8 S_2 S_7$
 Symbol : $\underline{c} \ \underline{d} \ \cancel{C} \ C \ d \text{ error}$

2. Grammar

- (1) $S \rightarrow h B e$
- (2) $B \rightarrow B A$
- (3) $B \rightarrow \epsilon$
- (4) $A \rightarrow x$
- (5) $A \rightarrow t$

State	ACTION					GOTO		
	h	x	t	e	\$	S	B	A
0	s2					1		
1					acc			
2		r3	r3	r3		3		
3		s6	s7	s4				5
4					r1			
5		r2	r2	r2				
6		r4	r4	r4				
7		r5	r5	r5				

Parsing the string: hxe, httxe, httxe

Check input

+ hxe

State : ~~S₀ S₂ S₃ S₄ S₅ S₆ S₇ S₁~~
Symbol : h ~~B~~ ~~* A~~ ~~B~~ ~~x~~ S accept

+ httxe

State : ~~S₀ S₂ S₃ S₄ S₅ S₆ S₇ S₁~~
Symbol : h ~~B~~ ~~t~~ ~~A~~ ~~B~~ ~~t~~ ~~A~~ ~~B~~ ~~x~~ ~~A~~ ~~B~~ ~~e~~ S accept

+ httxe

State : ~~S₀ S₂ S₃ S₄ S₅ S₆ S₇ S₁~~
Symbol : h ~~B~~ ~~t~~ ~~A~~ ~~B~~ ~~t~~ ~~A~~ ~~B~~ ~~x~~ ~~A~~ ~~B~~ ~~x~~ S accept

+ httxxe

State : ~~S₀ S₂ S₃ S₄ S₅ S₆ S₇ S₁~~
Symbol : h ~~B~~ ~~t~~ ~~A~~ ~~B~~ ~~t~~ ~~A~~ ~~B~~ ~~x~~ ~~A~~ ~~B~~ ~~x~~ ~~A~~ ~~B~~ ~~e~~ S accept

3. Grammar

- (1) $E \rightarrow E + T$
- (2) $E \rightarrow T$
- (3) $T \rightarrow T * F$
- (4) $T \rightarrow F$
- (5) $F \rightarrow (E)$
- (6) $F \rightarrow id$

State	Action						Goto		
	id	+	*	()	\$	E	T	F
0	S5			S4			1	2	3
1		S6				accept			
2		R2	S7		R2	R2			
3		R4	R4		R4	R4			
4	S5			S4			8	2	3
5		R6	R6		R6	R6			
6	S5			S4			9	3	
7	S5			S4					10
8		S6			S11				
9		R1	S7		R1	R1			
10		R3	R3		R3	R3			
11		R5	R5		R5	R5			

Parsing the string: id * id, id * (id), id + (id + id), (id + id) * id, id + (id * id)

.Check input

+ id * id

State : S0 S5 S3 S2 S4 S5 S6 S10 S2 S1
 Symbol : id F T * id E T E accept

+ id * (id)

State : S0 S5 S3 S2 S4 S5 S6 S8 S2 S8 S1 S6 S2 S1
 Symbol : id F T * (id F T E Y F T E accept

+ id * (id * id)

State : S0 S5 S3 S2 S4 S6 S4 S8 S3 S2 S8 S6 S3 S5 S8 S1 S3 S9 S1
 Symbol : id F T E + (id F T E * id F T E * id F T E) F T E accept

~~id * id~~

State : $S_0 S_4 S_5 S_3 S_2 S_8 S_6 S_5 S_3 S_8 S_6 S_4 S_3 S_2 S_7 S_{10} S_2 S_1$
Symbol : (~~id F T E + id F T E Y F T *~~ ~~id F T E accept~~

~~id * id~~

State : $S_0 S_5 S_3 S_2 S_4 S_6 S_4 S_5 S_3 S_2 S_7 S_8 S_6 S_4 S_3 S_2 S_1$
Symbol : ~~id F T E + (id F T * id F T E Y F T E accept~~