CSC441 Compiler Construction - Quiz 2

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Quiz

Consider following grammar and select left factored form in the given options which should be the most appropriate answer *

$$Z \rightarrow X$$
 aec | X aed | f $X \rightarrow a \mid b$

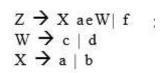
$$Z \rightarrow X \ aZ' | f$$

$$Z' \rightarrow eZ''$$

$$Z'' \rightarrow c | d$$

$$X \rightarrow a | b$$

X → a | b



Option 1

$$Z \rightarrow XZ' | f$$

 $Z' \rightarrow aeZ''$
 $Z'' \rightarrow c | d$
 $X \rightarrow a | b$

Option 3

$$Z \rightarrow a \ aeZ' | b \ aeZ' | f$$

 $Z' \rightarrow c | d$

Option 4

Option 2

Consider following Predictive parsing table, Would it be possible for predictive parsing algorithm to complete its iteration and match \$ with \$ for following string "ibtae". *

	a	ь	i	e	t	\$
S	S → a		S →iEtSS'			
s'				S' → eS S' → ε		S' → ε
Е		E→b				

	Yes
\ /	163



Grammar with the LL(1) property is called _____*

- Context free grammar
- Regular grammar
- Irregular grammar
- Predictive grammar

Left-factoring takes care of FIRST/FIRST conflicts. *

- true
- False

Given grammar is can be made LL(1) if *

$$A \rightarrow Ba \mid b$$

 $B \rightarrow eCd \mid e$
 $C \rightarrow Df \mid g$
 $D \rightarrow Df \mid Aa \mid Cg$

- left factoring is added in it
- all the options are correct
- Left recursion removed from it
- we convert it to Right recursive grammer

Is it possible to parse the sentence "while id<id do ++ id" using the table and CFG given below *

- 1. prog → stmt
- 2. stmt \rightarrow if expr then block
- 3. stmt → while expr do block
- stmt → expr;
- 5. expr \rightarrow term => id
- 6. expr → isZero? term
- 7. expr → not expr
- 8. expr \rightarrow ++ id
- 9. expr → --- id
- 10. term \rightarrow id
- 11. term → const
- 12. block → stmt
- 13. block → { stmts }
- 14. stmts → stmt stmts
- 15. stmts $\rightarrow \epsilon$

	if	while	id	const	isZero?	not	++		{	then	do	;	=>	}	S
prog	1	1	1	1	1	1	1	1							
stmt	2	3	4	4	4	4	4	4							
expr			5	5	6	7	8	9							Г
term			10	11											Г
block	12	12	12	12	12	12	12	12	13						Г
stmts	14	14	14	14	14	14	14	14						15	Г

true

false

Consider the following grammar, Where "old, and, men, women " are terminals and "NP, N, Adj, Conj" are non-terminals. it is not suitable for LL(1) parsing because *

 $NP \rightarrow Adj NP$

 $NP \rightarrow NP$ Conj NP

 $NP \rightarrow Adj N$

 $NP \rightarrow N$

 $Adj \rightarrow old$

Conj → and

 $N \rightarrow men \mid women$

- It has null productions
- It has left recursion
- It is left factored
- It has right recursion

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