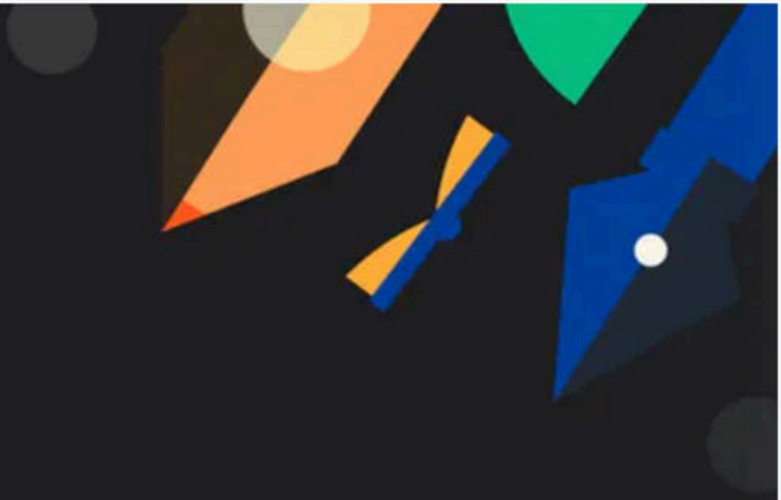


Doubt Clearing Session

Complete Course on Theory of Computation

Subbarao Lingamgunta • Lesson 35 • Mar 23, 2022

Give CFG $L = \{ a^m b^n \mid m \neq n \}$ $m, n \geq 1$

$a^m b^n \mid m, n \geq 1, m < n$

$S \rightarrow CB \mid AC$

$a^m b^n \mid m, n \geq 1, m > n$

$C \rightarrow aCb \mid ab \Longrightarrow a^n b^n \mid n \geq 1$

$A \rightarrow aA \mid a \Longrightarrow a^m \mid m \geq 1$

$B \rightarrow bB \mid b \Longrightarrow b^m \mid m \geq 1$

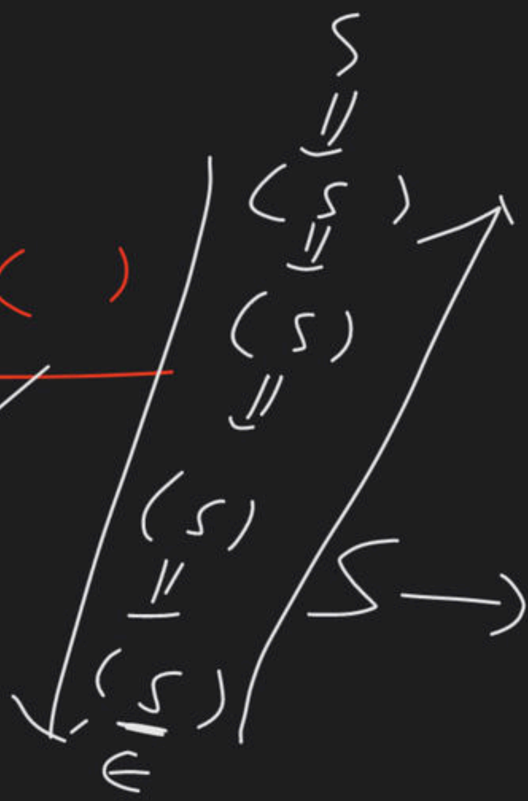
L L L | G G G

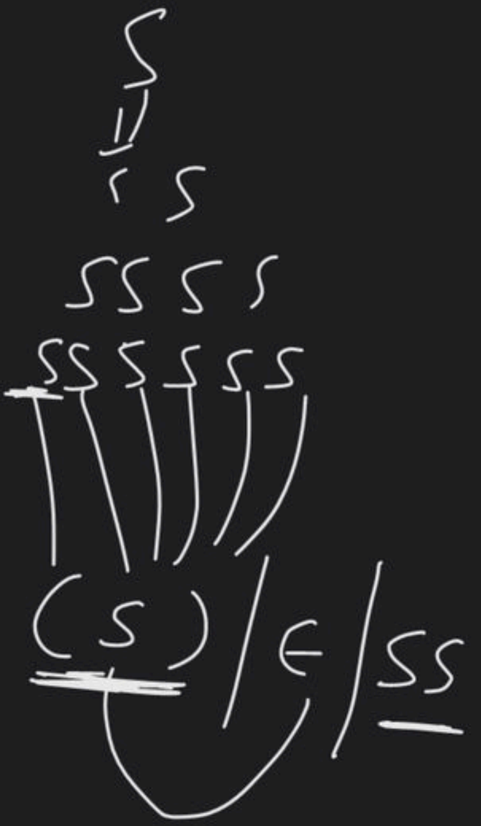
Give CFG $L = \{$ set of all valid balanced parentheses $\}$

4. (((( ))))

2. ( ) ( ) ( ) ( ) ( )

3. ϵ



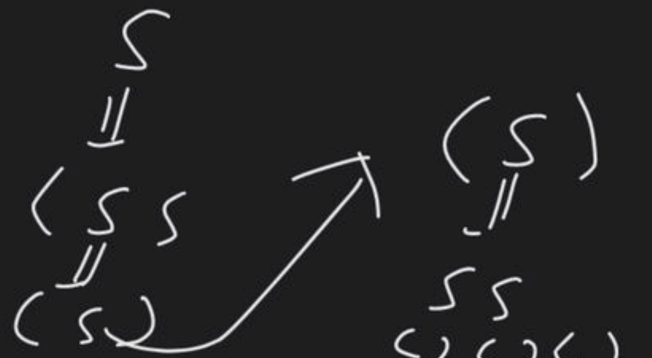


4. ((( ) ( )))

5. (((( )))) ( ) ((( )))

6.))) (((

( ) (( ))



Give CFG $L = \{$ set of all strings of a's & b's where number of a's & b's are equal $\}$

aaaabbbb

5L

bbbbaaaa

ababababab

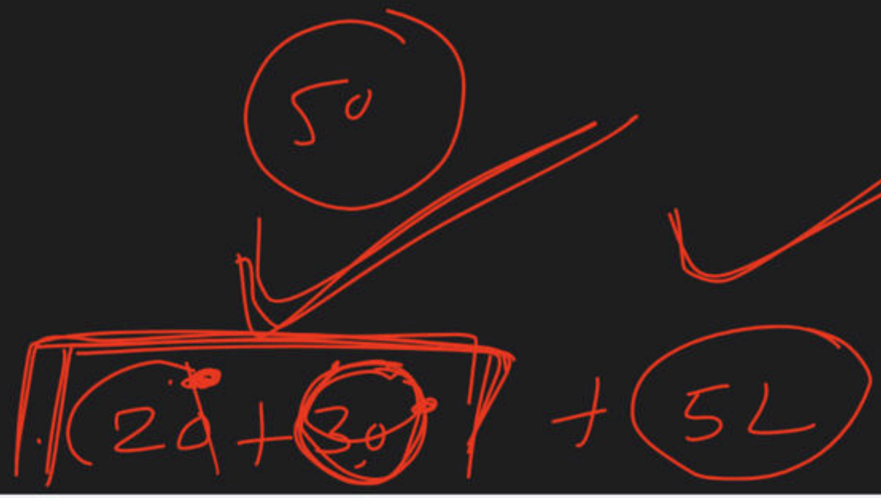
bababbaba

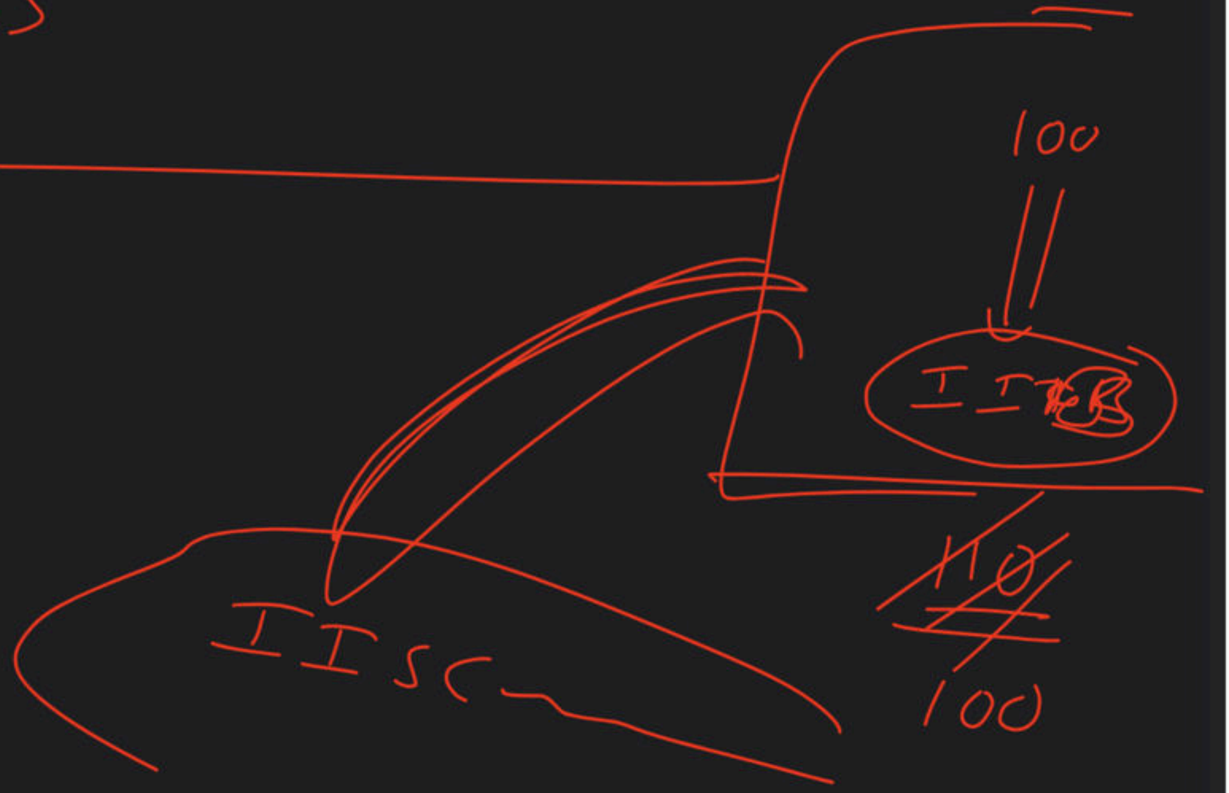
abbaabbaabbav

$S \rightarrow aSbS \mid bSaS \mid \epsilon \Rightarrow aaabbbaaabb$

(or)

$S \rightarrow asb \mid bsa \mid \epsilon \mid ss$





Give CFG $L = \{ w \mid w \in (a+b)^+ \text{ and } n_a(w) = 2n_b(w) + 1 \}$

$S \rightarrow asa\,S\,bS \mid bSasas \mid asbSas \mid$ 

$aab \mid abab \mid baab$

Give CFG $L = \{$ set of all $A \cdot E$ over it $\}$

Operands $\Rightarrow a, b, c$

Operators $\Rightarrow +, -$

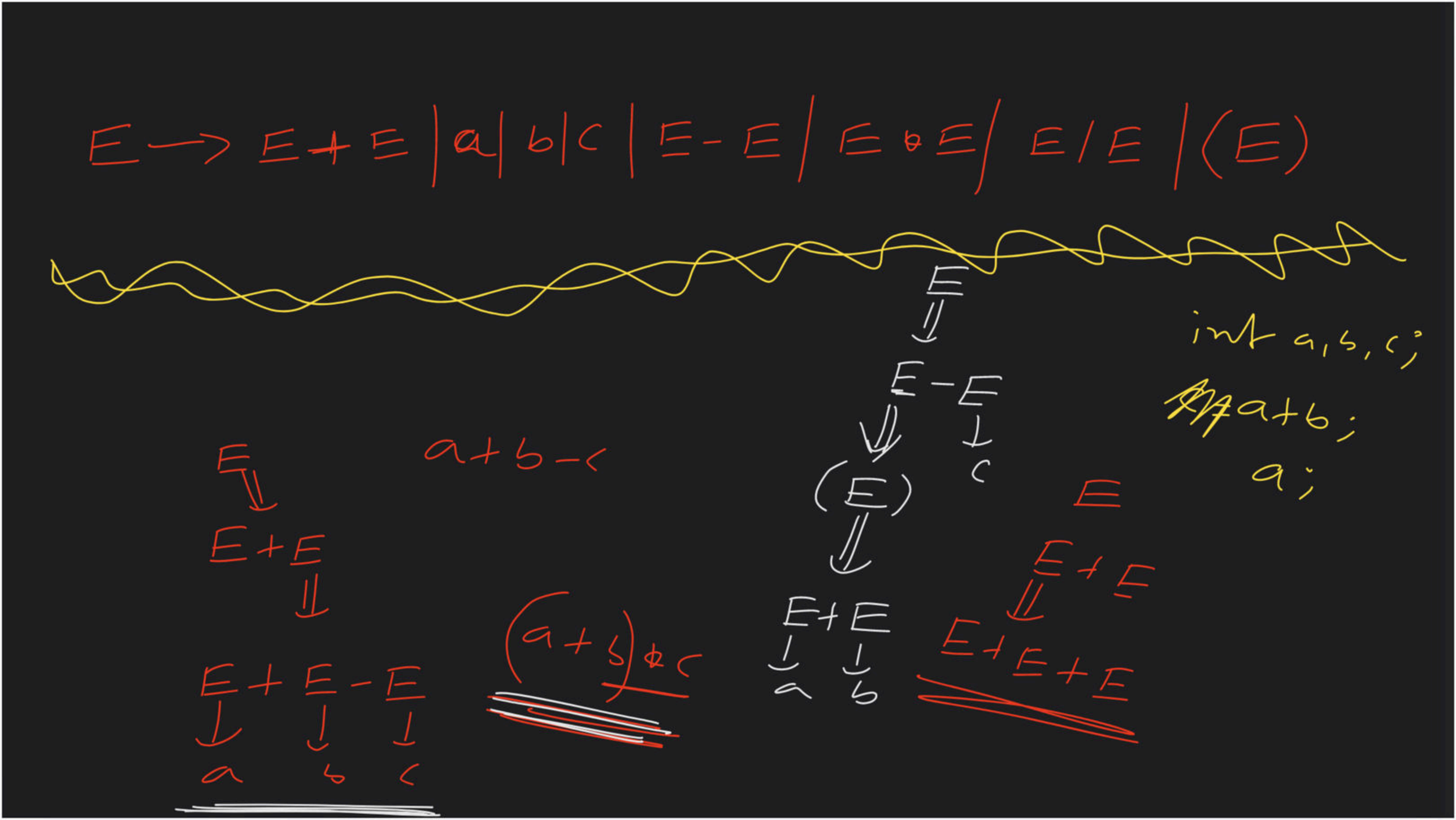
$a+b$ ✓

$a+b-a$ ✓

$a-b$ ✓

$b-a-a$ ✓

$a/b-a-b+a$ ✓


E → E+E | a | b | c | E-E | E*E | E/E | (E)
int a,b,c;
a+b;
a;
a+b-c
(a+b)*c

Thanks All

Dedicate