REGULAR GRAMMAR
1+ coldplant 10 coldmen = at ni colde do colomen : L'apte - A grammar is said to be Regulas Grammar (RG) if in that grammar all the productions have an number of terminals and at the most one variable 8. (p, A) 6 8.n < A - Regular grammar are of two types sett la 200 et e Regular Grammas (RG) de trote 11: 6 que production i.e. sale then make shut state the O Right Linear Grammar (Deft Linear Grammar (RL4) (LL4) dre ed blues insupple addisont evede of epople *: Right Linear Grammar (RLG) - If in the grammas, all the productions are win the resign the fer the felliusing

 $A \rightarrow \alpha B$ or $A \rightarrow \alpha 1/81/10$

where, A,B > non-terminates or mariables

★ terminal

= 8.0.8 + Eller Je + Oh then the gramma is said to be Right Linear Gramma eg: A -> aA | bB | b

Transition Diagrams Left Linear Grammar (LLG)

- If in the grammar, all the productions are of the form

A -> BX for A -> x

A1B -> non-terminals or variables

=> terminal then the grammar is said to be Left Linear Grammar(II e-g: A - Aal Bb 1b

* Converting RLG to FA: Step 1: Number of states in TD = Number of variables +1 - A grammar is said to be Required Pamman CRY Step2 and another bong and the rommorp tout of fi 5. Production of to transitional for redainer old bluev A -> aB $\delta(A_1a) \rightarrow B$ A > or eggyt out & (A) x) => Final state 100099 steps: If start state has epsilon (E) as its one of the production, i.e. 5 > E then make start state also a Right lines garmany could their ? Step 4: The above transition diagram would be probably a MFA. Bo convert it into DFA and then min DFA. I de grammas, ARA min PEA; commons edt al FA for the following Design S - OA 18 10 x - N TO BY 4- A $A \rightarrow 0511$ grad w nen terminates on o payaless No. of variables = S, A, B = 3 no of states of 4 bloom for final state). A cont d | 8d | 100 d - A . p.9 Transition Diagram: the grenomy is said to be Left line is grammay (luc d | d8 | DA Z-A

* Converting FA to RIG:

step 1: Associate variables like S, A, B, etc. with state names

step 2: Replace the transitions by productions as shown

below

,	Transition	Production
4	8(A,a)=B)}	A →aBess

POIAS

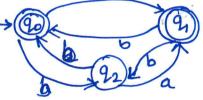
if B is a final state then add production A -> a

 Transition	Production
$\delta(A, \alpha) = B$	A → aB a

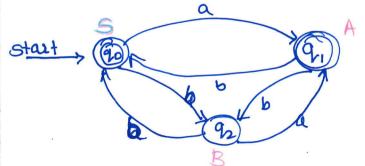
Steps: If start state is a final state then add & as production to the start variable i.e. s-> E

step 4: Eliminate unit & useless productions.

Find RLG for the following . MIN DARMAMM KLY



-> Associate variables with each state.



Convert into RLG: > As A is a final state (step2) A - helling e pur parcosilo en ligras)

A -> bS/bB/b As S is also affinal state.

B -> bes a aA a As A is final state, a

-Assis final state

Inferchange state to final state f. neverse the denethion of transitions. * Converting RLG to LLG Step 1: Rewrite RL4 so that all productions are of the form $A \rightarrow aB$ or $A \rightarrow a$ step 2: Draw transition diagram with vertices a labelle as (V, U(E)) and transition labelled as (T, U) on ba < 2 Tesmina vasiable steps: Interchange the position of start and final state & reverse directions of all transition step4: Rewrite the gramma in LLG. Convert the following Rug to the equivalent Luc Q. Find LLG for the following: distinct $s \rightarrow abA$ A -> aB/c B -> bB | d Rewrite all productions in the form A -> aB or A -> s -> aC C -> bA A -> aB $A \rightarrow C$ B -> bB $B \rightarrow d$ Converting RLG to TD: B (A) a

* Converting LLG to RLG: otep1: Represent the LLG using transition diagram. The no. of states = no. of variables +1 (for find step 2: Interchange the start state and final state. steps: Reverse the directions of all hansitions. step 4: Reconite the RLG from the transition diagram a. Write an equivalent RL4 from the given LL4. 8 > CO | AO | BI A -> A1 | C0 | B1 | D B -> BI privip out more at odt word Theten of CID, AD COLLEGE TO SK : Extente TO SK -> No. of states = S. A,B,C = 4+1 = 5 To we get, this state state and sproducted in ta soft you descented by the Interchanging start state with final state & reversing all directions of the transition diagram.

> No. of states = No. of vasiables +1

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write 12844 I from mother coloTD and symmetrial : 2 gala

steps: Kevesse the directions of Bla Aquesias.

O A 1 D 0 C A

step 1: Reconste the Ref from 14681 that action diagram

C > OAlo

* Converting LLG to FA: 181 0A100 & 0

Step 1: Draw the TD from the given LLG.

No. of states = No. of variables of 10 (for final state)

step 2: Interchange the start state with final state and reverse the direction of all transitions.

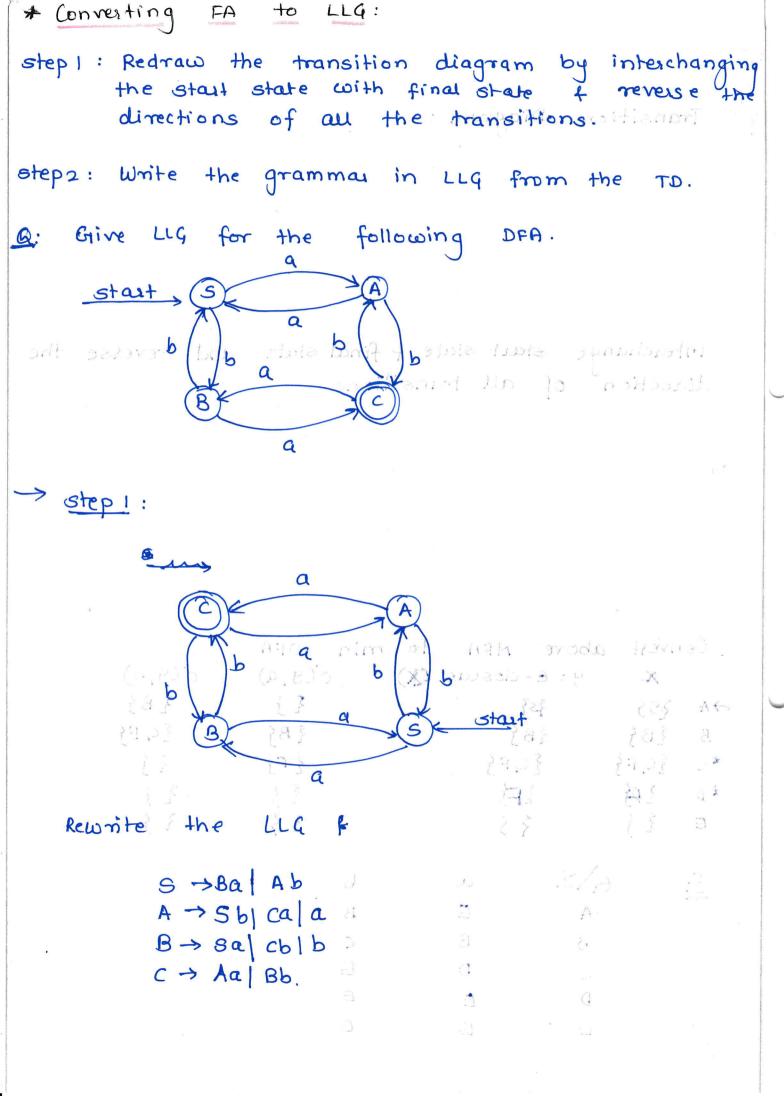
steps: Convert NFA obtained to min DFA.

@: Construct the DFA accepting the regular langgenerated by LLG. given below

S -> cat Bb

Internal of state with finald Block of a version and the state of the

 \rightarrow No. of states = No. of variables +1
= s,B,c +1
= 4



- * RE to RLG:
- 1) Convert RE to NFA
- 2) Convert NFA to minimized DFA
- 3) Convert minimized DFA to RLG
- * RLG to RE:
- 1) Convert RLG to DFA
- 2) Convet DEA to RE by Arden's method or eliminal"m
- <u>A.</u> Construct the RLG corresponding to the given RE. $R = (1+(01)^*) 1^* (0+1)$