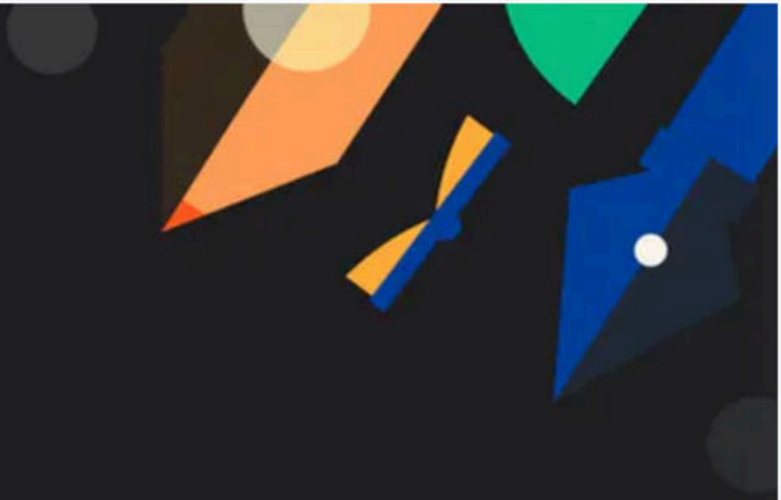
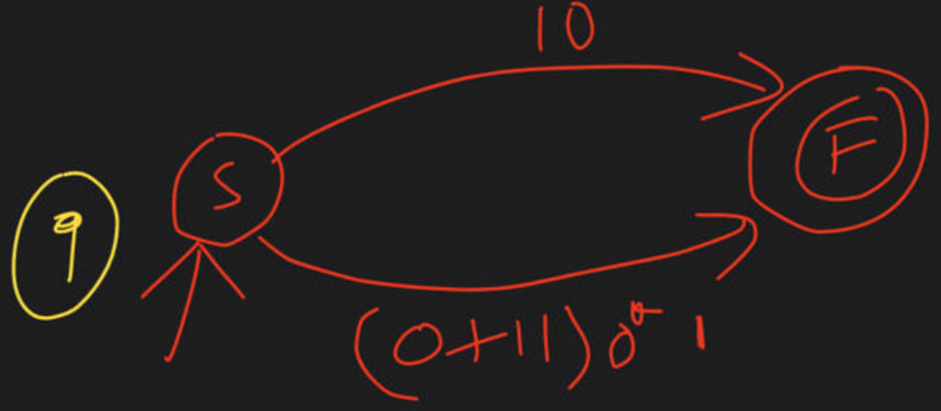


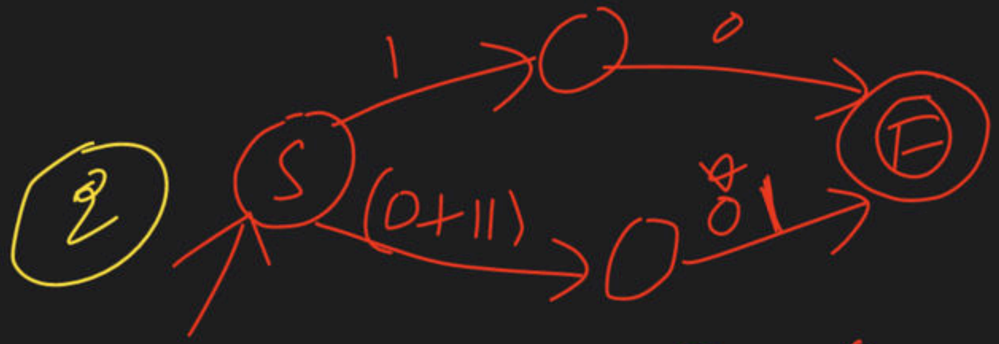
CFG and PDA - II

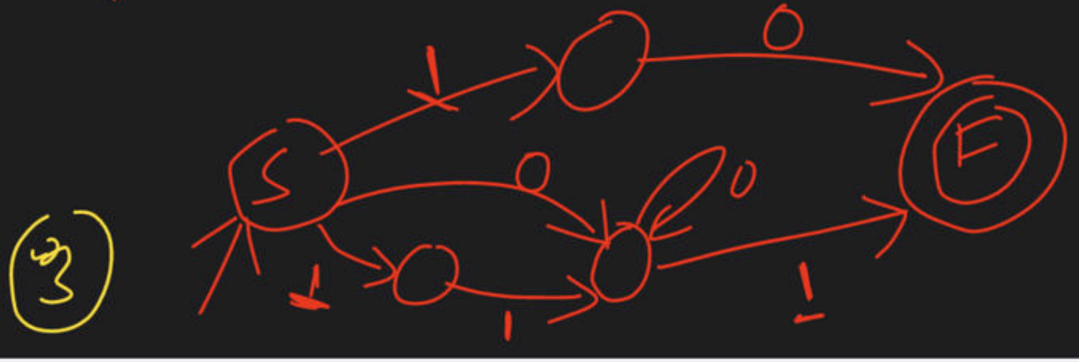
Complete Course on Theory of Computation

Subbarao Lingamgunta • Lesson 25 • Mar 8, 2022

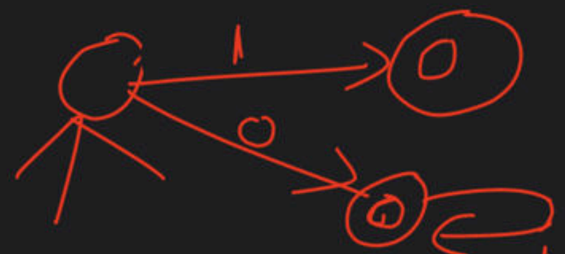
$10 + (0+11)0^*1 \Longrightarrow$ ∈- Free NFA

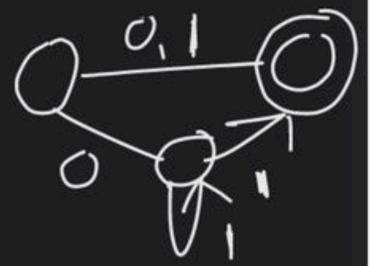


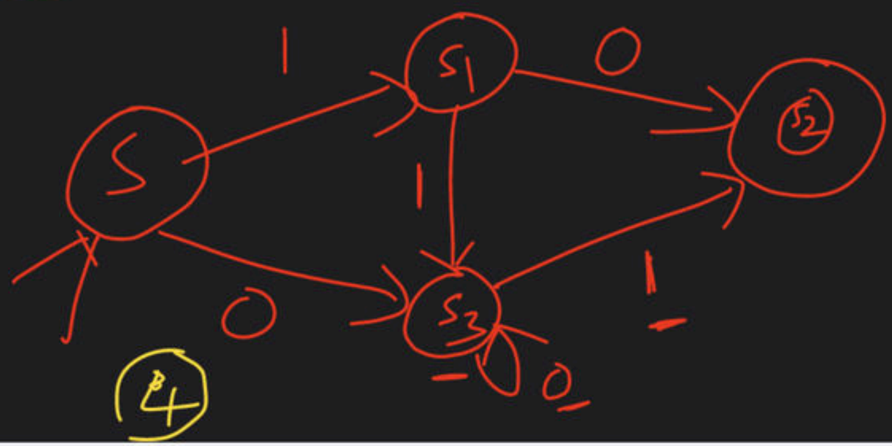




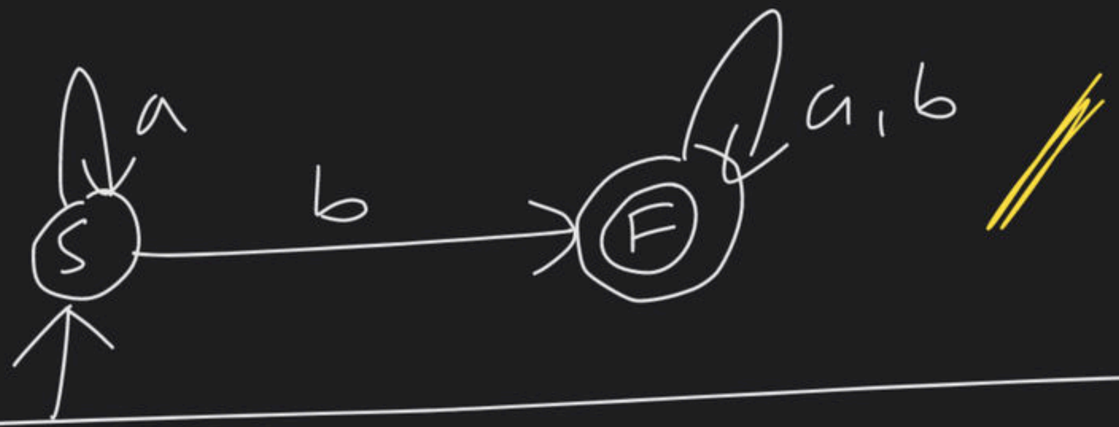
$01^* + 1 \Longrightarrow$



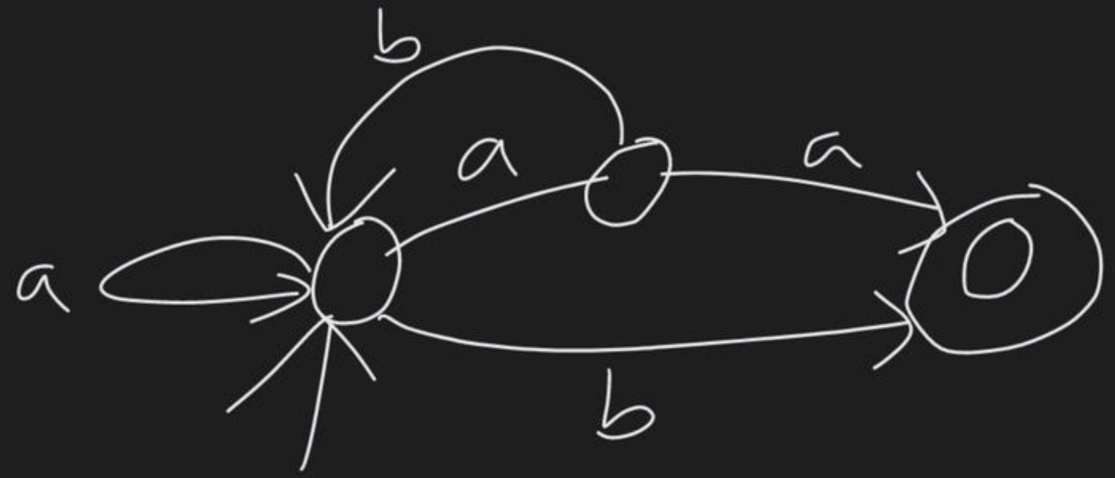




DFA $\Longrightarrow$ $a^* b (a+b)^*$



NFA $\Longrightarrow$ $(ab+a)^*(aa+b)$



NFA $\longrightarrow$ DFA

DFA $\longrightarrow$ M-DFA

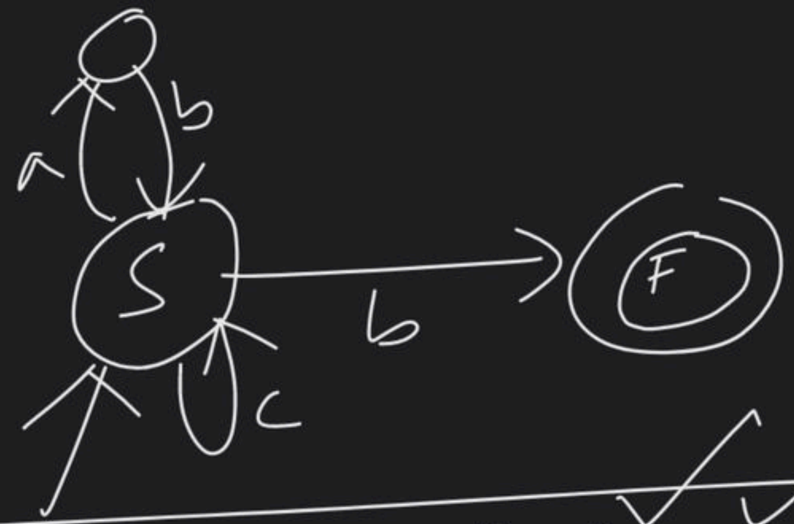
FA $\longrightarrow$ RE

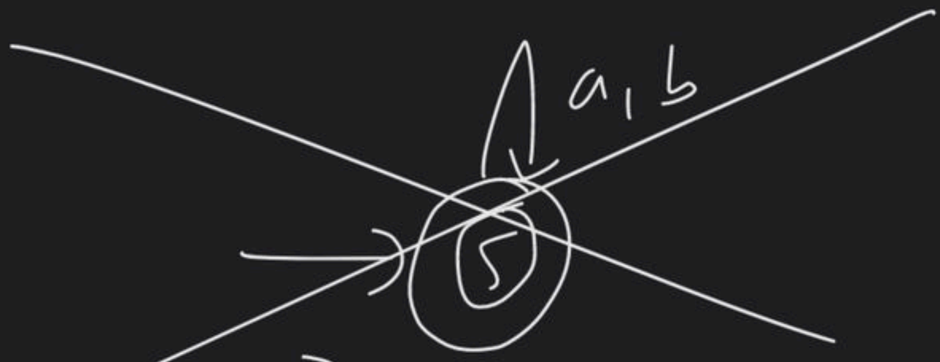
RE $\longrightarrow$ FA

ϵ-NFA $\longrightarrow$ NFA

ϵ-NFA $\longrightarrow$ DFA

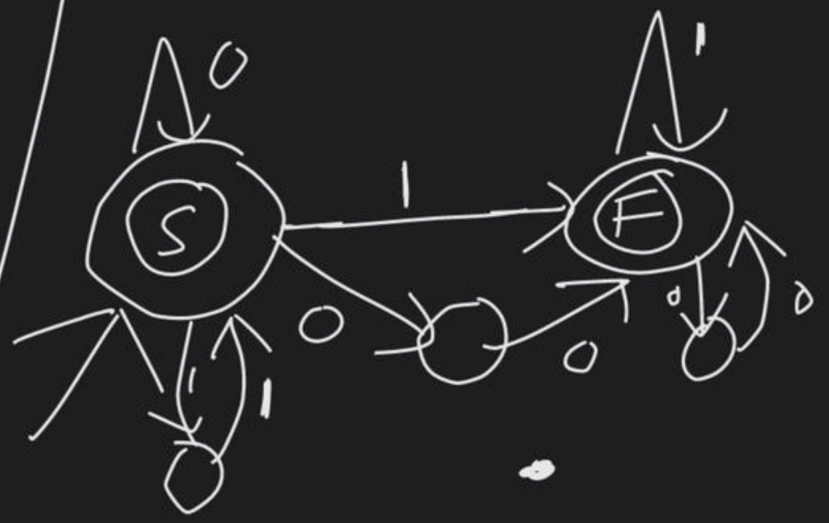
NFA $\Longrightarrow (ab+c)^* b$





NFA $\Longrightarrow (0+11)^* (1+00)^*$

a^* b^*



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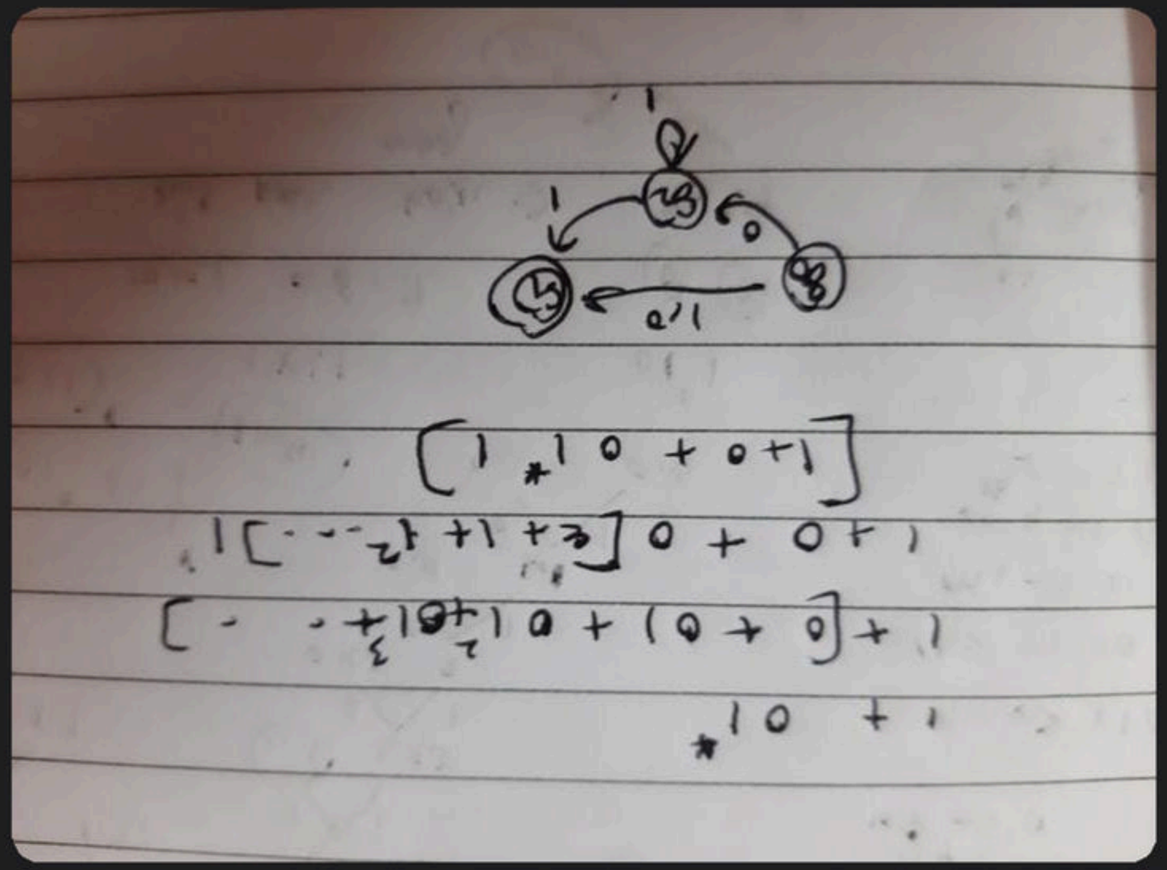
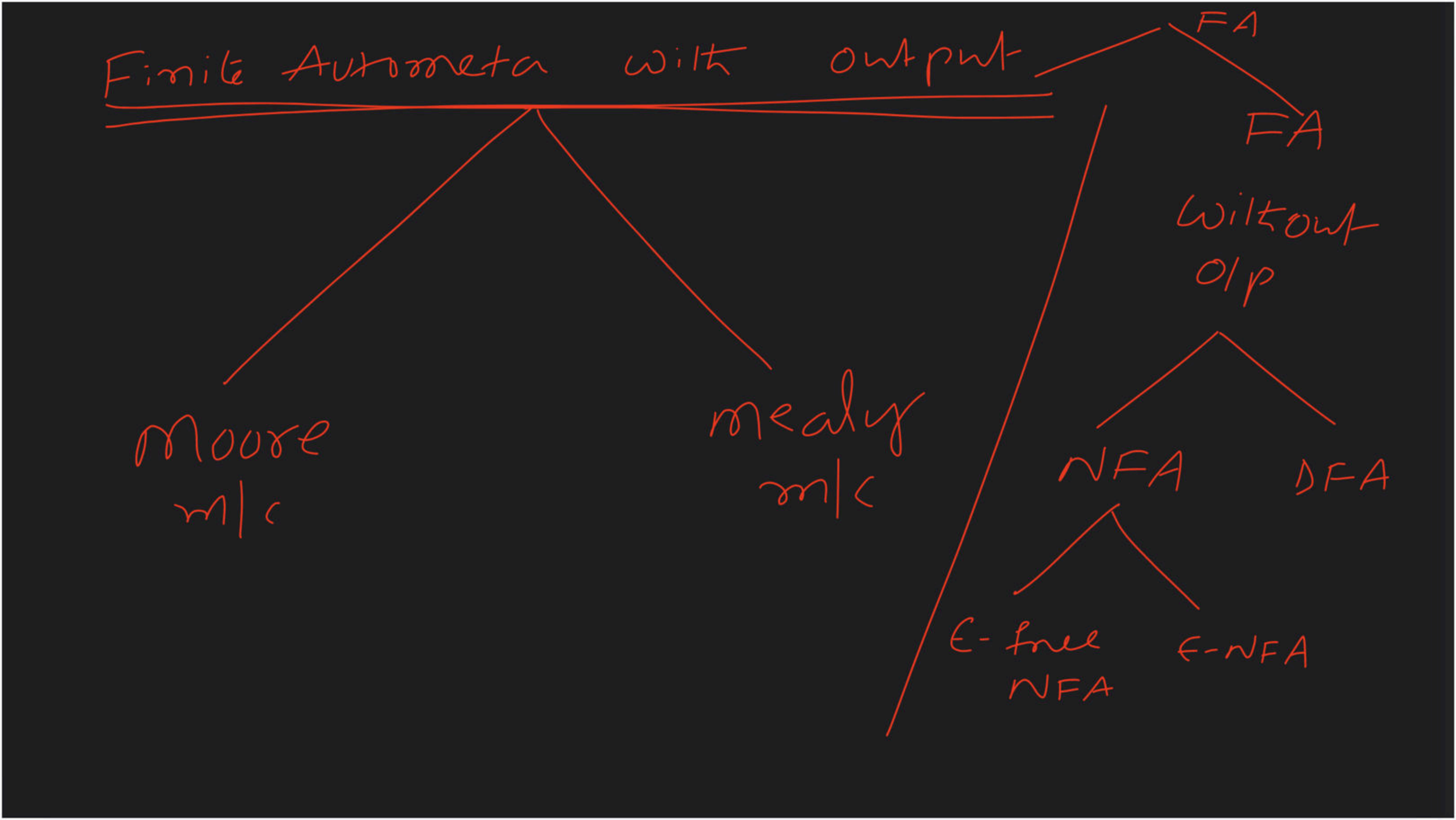
▲ 1 • Asked by Pikachu

Please help me with this doubt




Finite Automata with output
Moore m/c
mealy m/c
FA
FA
Wiltout o/p
NFA
DFA
ϵ-free NFA
ϵ-NFA

Construct Moore m/c that counts no. of occurrences of substring ab in the given string if a's & b's.

i/p: abbabbbab

o/p: 3

---

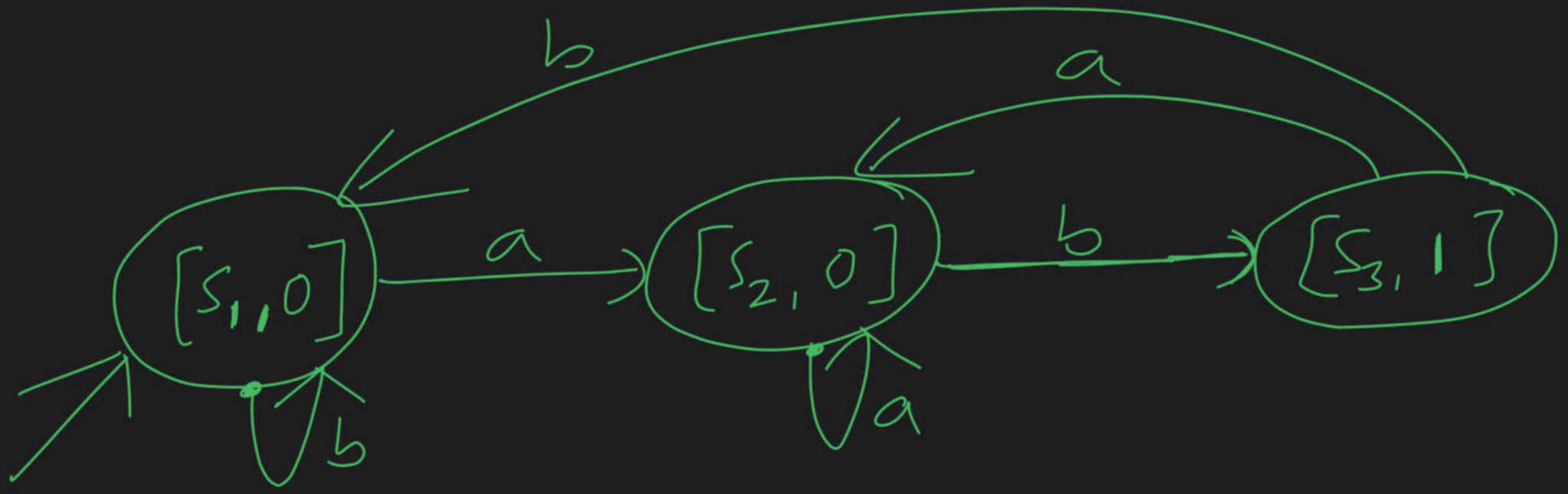
i/p: bbbbbaaaa

o/p: 0

---

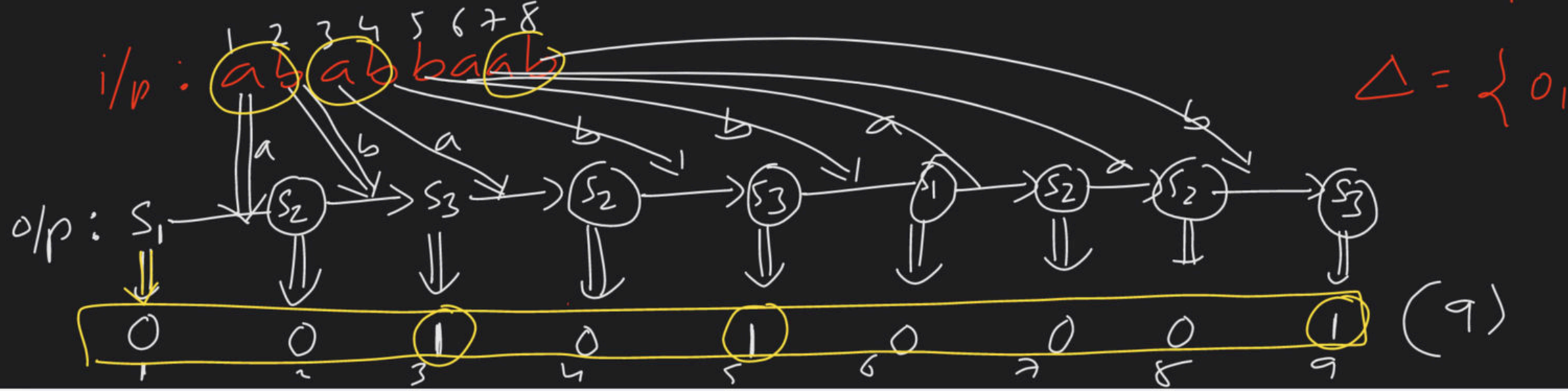
i/p: baabaabaa

o/p: 2



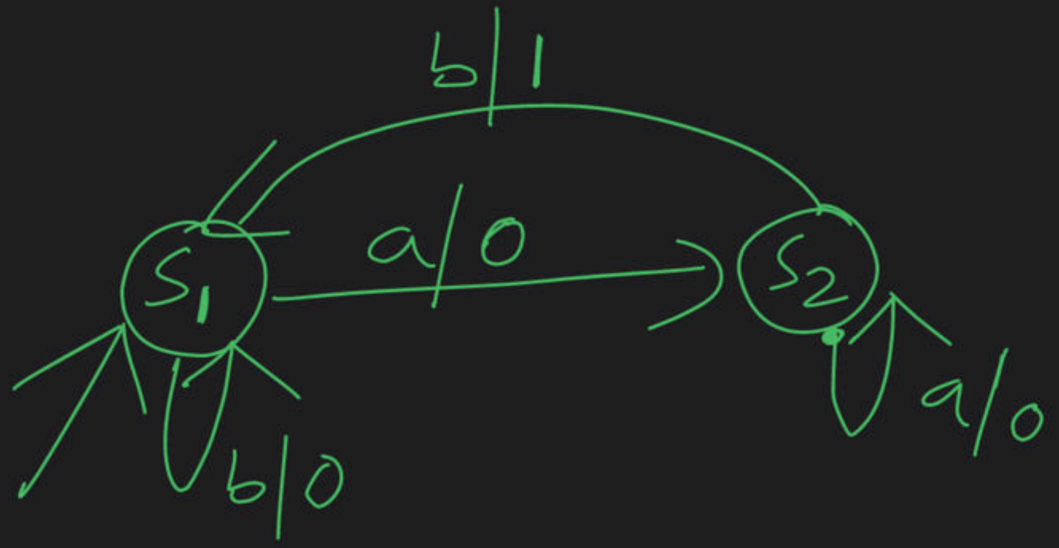
$\Sigma = \{a, b\}$

$\Delta = \{0, 1\}$



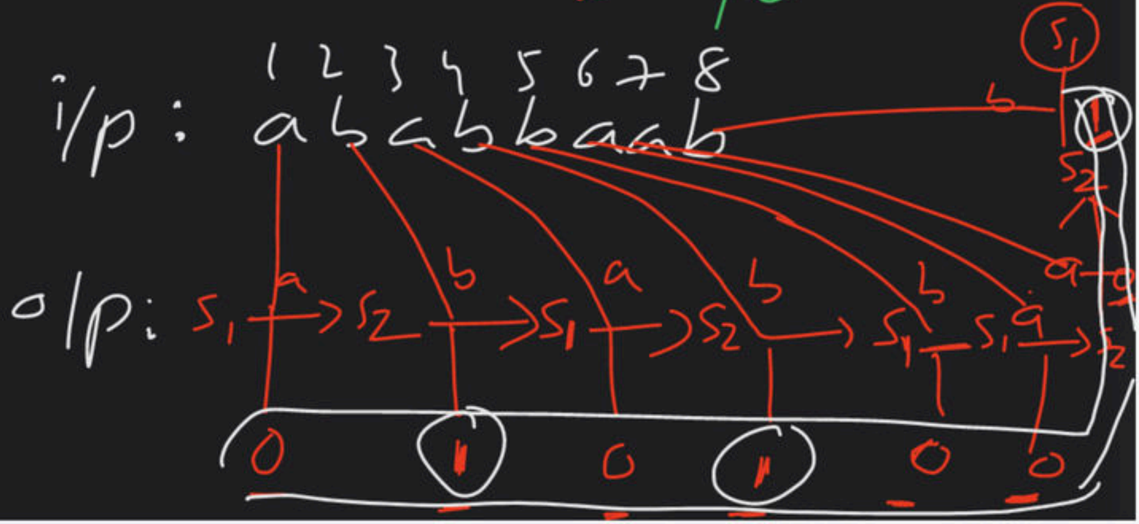
(9)

Mealy



$$\lambda : S_1 \times a \Rightarrow 0$$

$$\delta : S_1 \times a \Rightarrow S_2$$



① Moore & mealy are deterministic (like DFA)

② No. of. final states in moore & mealy m/c are 0, becz these are not language recog but these are o/p generators.

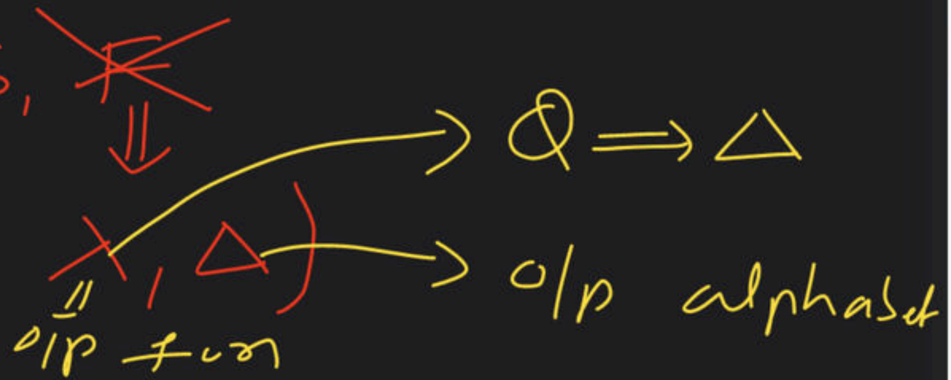
③ $\underline{\lambda} : Q \longrightarrow \Delta$ (moore m/c)

λ → o/p function

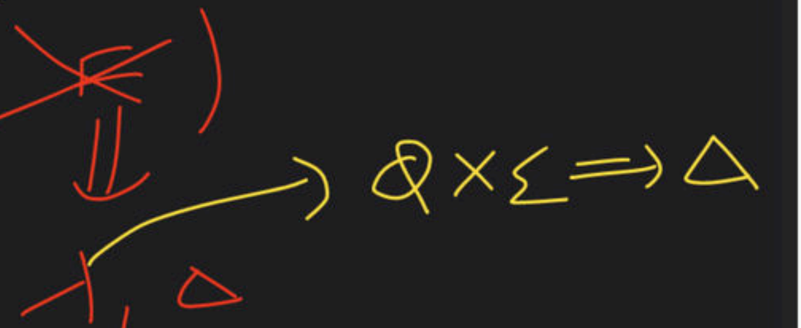
Δ → o/p alphabet

$\underline{\lambda} : Q \times \Sigma \longrightarrow \Delta$ (mealy m/c)

(4) moore m/c $m = (Q, \Sigma, \delta, S, \cancel{\quad})$



mealy m/c $m = (Q, \Sigma, \delta, S, \cancel{\quad})$



(5) In moore m/c for n-length i/p string we will get (n+1) length o/p string

but in mealy we will get n length o/p string only.

Thanks all

Dedicate Hats

Follows

Huffman coding