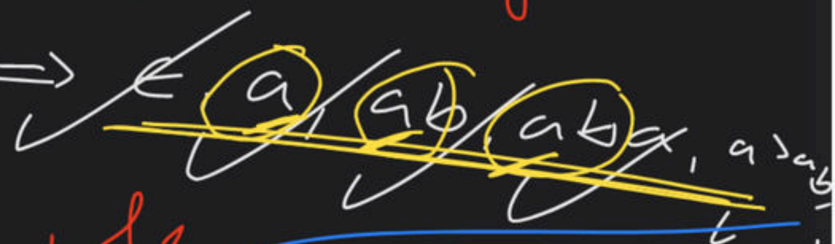
Dobut Clearing Session

Complete Course on Theory of Computation

Subbarao Lingamgunta • Lesson 8 • Feb 11, 2022

cm- DFA $L = \{$ accepting all prefixes of string ababababab ..... $\}$



Prefix : set of all leading symbols

Ex

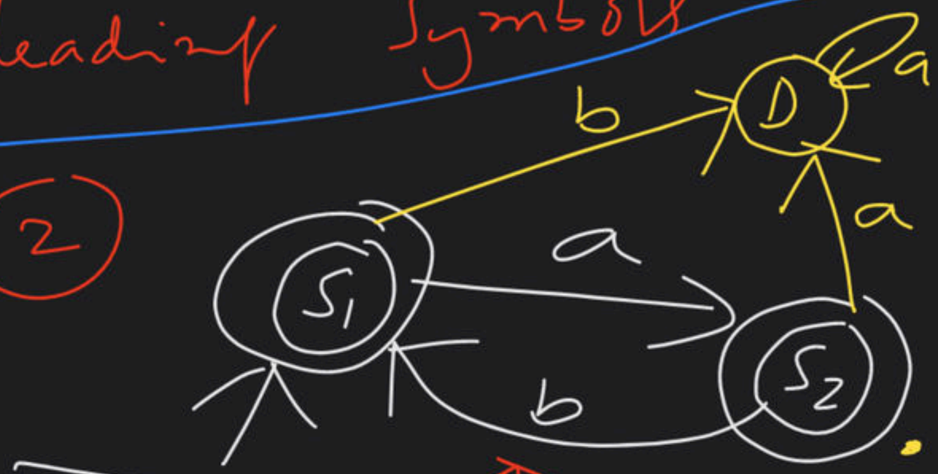
TOC ⟹

3

ε
T
TO
TOC

3+1

(2)



A.V.L

m - DFA (exactly one only)

DFA minimization

n ⟹ n+1

(1)

DFA

CM-DFA $L = \{$ all strings of a's & b's whose length of each string div-5 $\}$

$\Rightarrow$ 0, 5, 10, 15, 20, 25, 30, 35, ------

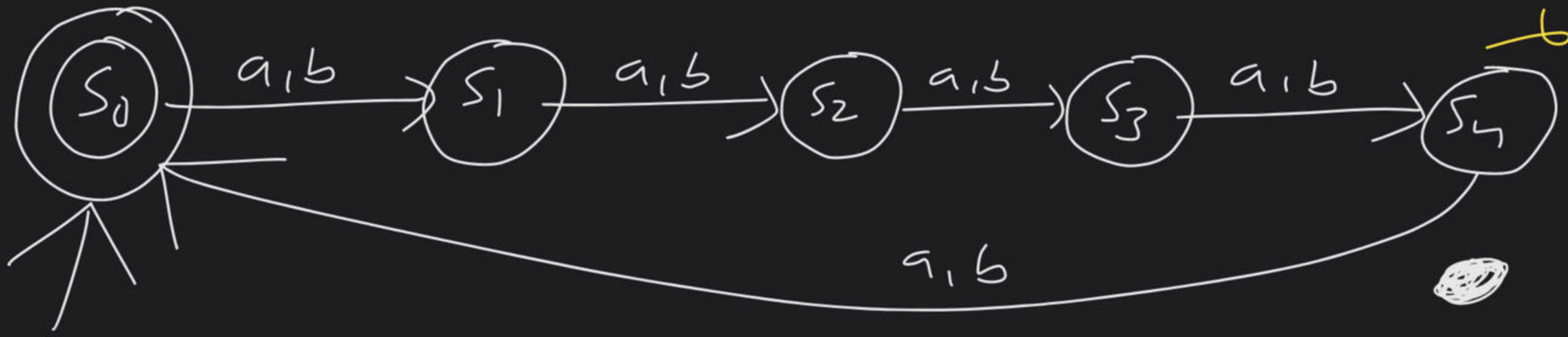
5 5 5 5 5 5

Y/N

$\in$ ✓

✓ aaaaa

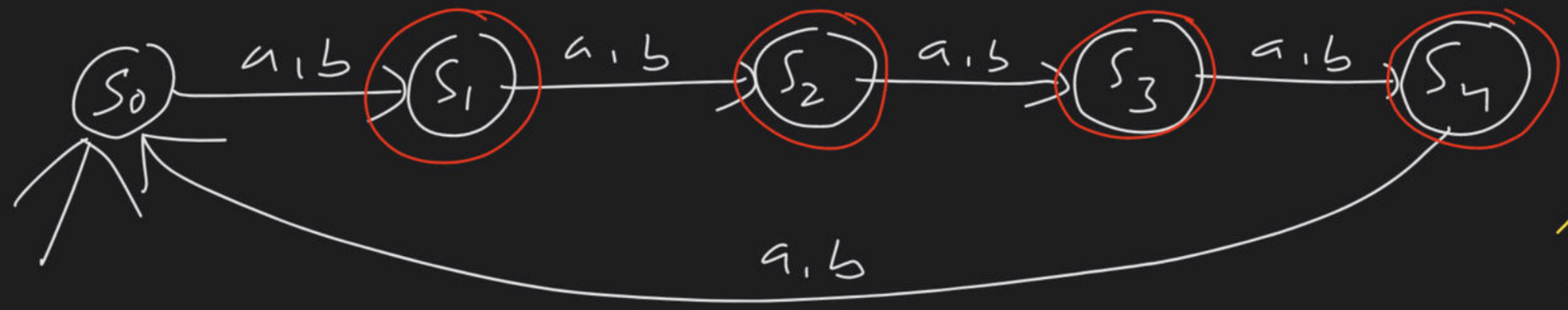
baaa



In CM-DFA - every string length divisible by n contain n-states

where

$L^1 = \{$ set of all strings of a's & b's where each string length not div by 5 $\}$



$\in$ b

baaaaa

aaaa

$L^1 = (a+b)^* - L \Rightarrow 1, 2, 3, 4, 6, 7, 8, 9, 11, \ldots\ldots$

$L \cap L^1 = \phi, \quad L \cup L^1 = \Sigma^*$

$U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$A = \{1, 2, 3, 4, 5\}$

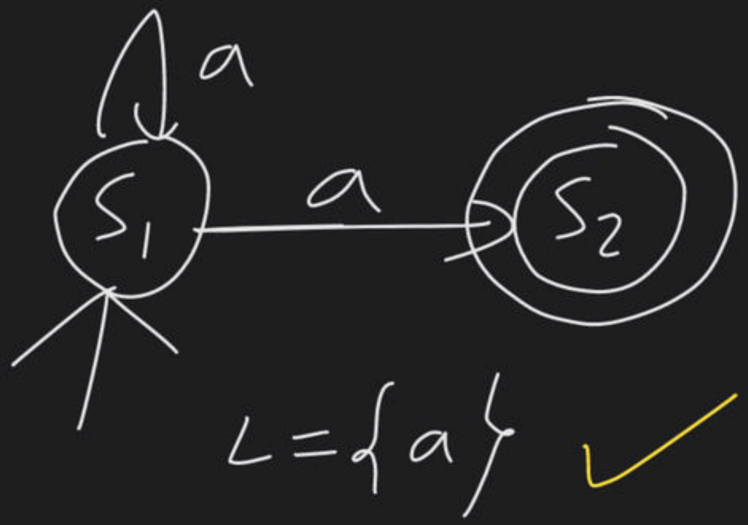
$A' = U - A = \{6, 7, 8, 9\}$

DFA $\Longleftrightarrow$ (DFA)^c

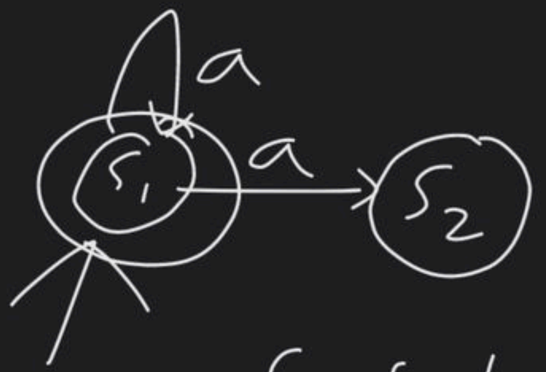
F-NF

NF-F

NFA no-guarantee



$L = \{a\}$ ✓



$L^c = \{a\}$ ✓

L

NFA ⟹ DFA ⟹ $(DFA)^C$

F-NF

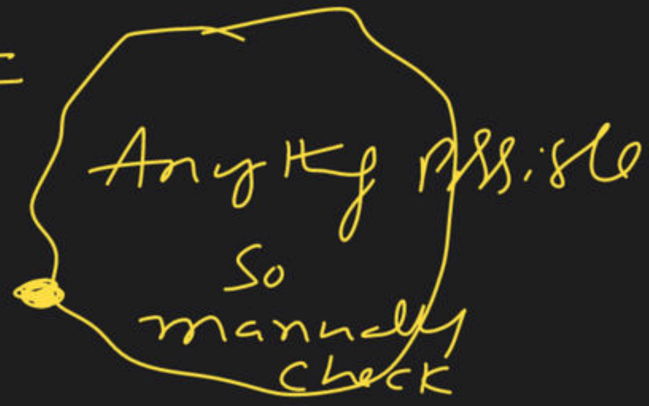
NE-F

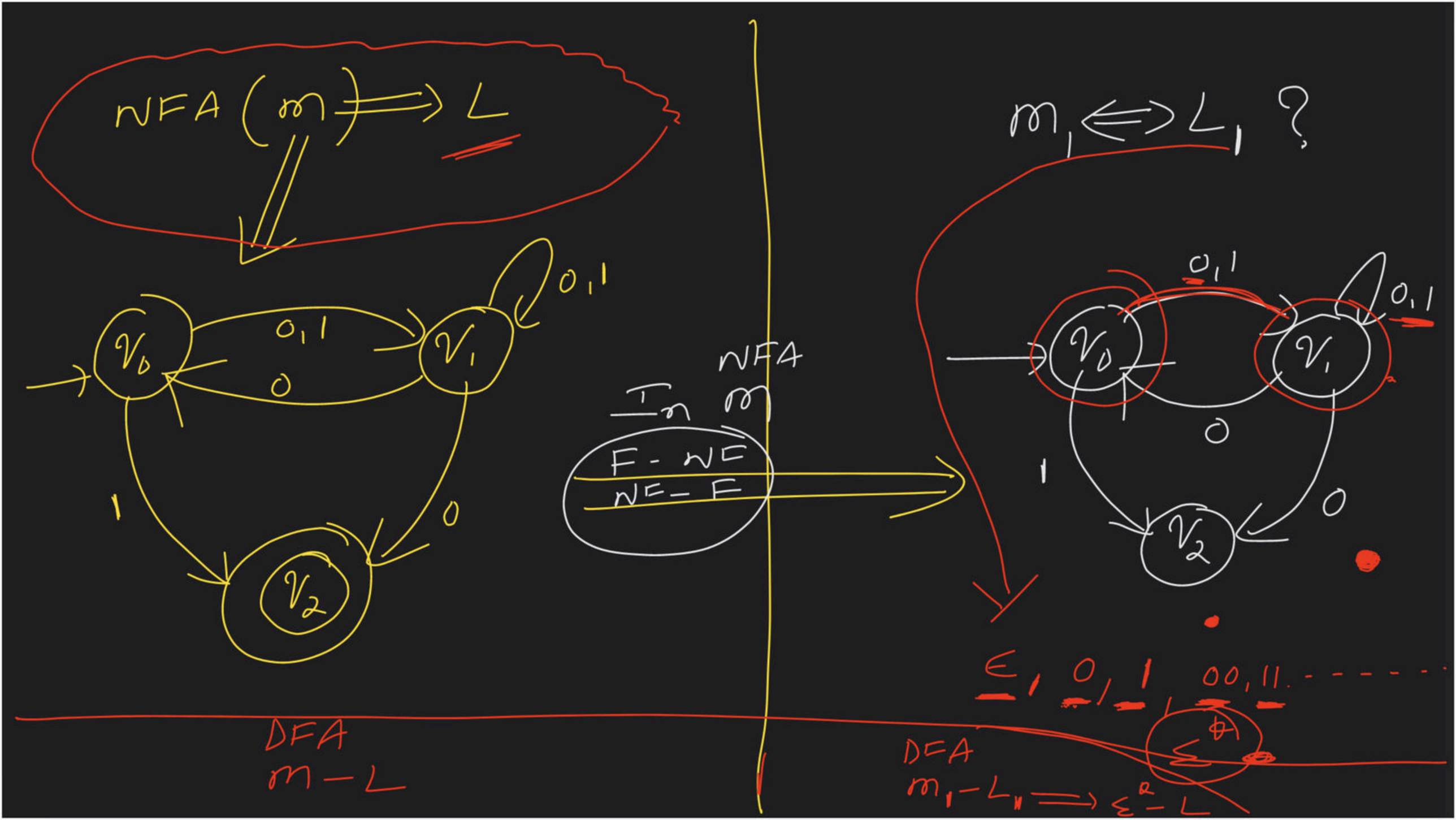
$DFA = L$

$(DFA)^C = L^C$

$NFA = L$

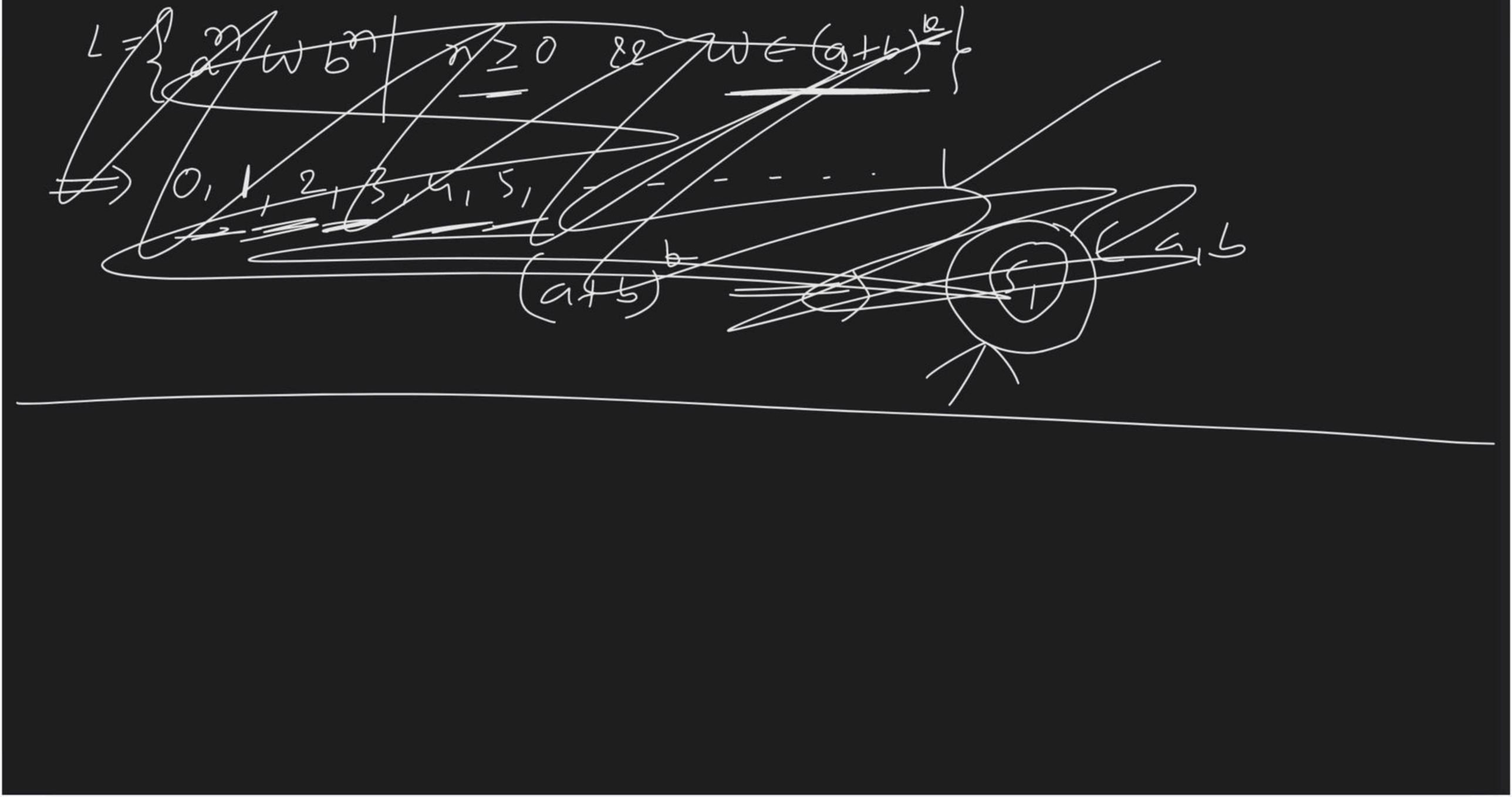
$(NFA)^C =$




NFA (m) ⟹ L
0,1
0,1
0
1
0
v_0
v_1
v_2
NFA
In m
F - NF
NF - F
$m_1 \Leftrightarrow L_1$?
0,1
0,1
0
1
0
v_0
v_1
v_2
ϵ, 0, 1, 00, 11. - - - - - -
ϕ
DFA
m - L
DFA
$m_1 - L_N \Longrightarrow \epsilon^R - L$

Thank you

Dedicate Hats


L = { a^n w b^n | n ≥ 0 & w ∈ (a+b)^k }
⇒ 0, 1, 2, 3, 4, 5, ...
(a+b)^k
a, b