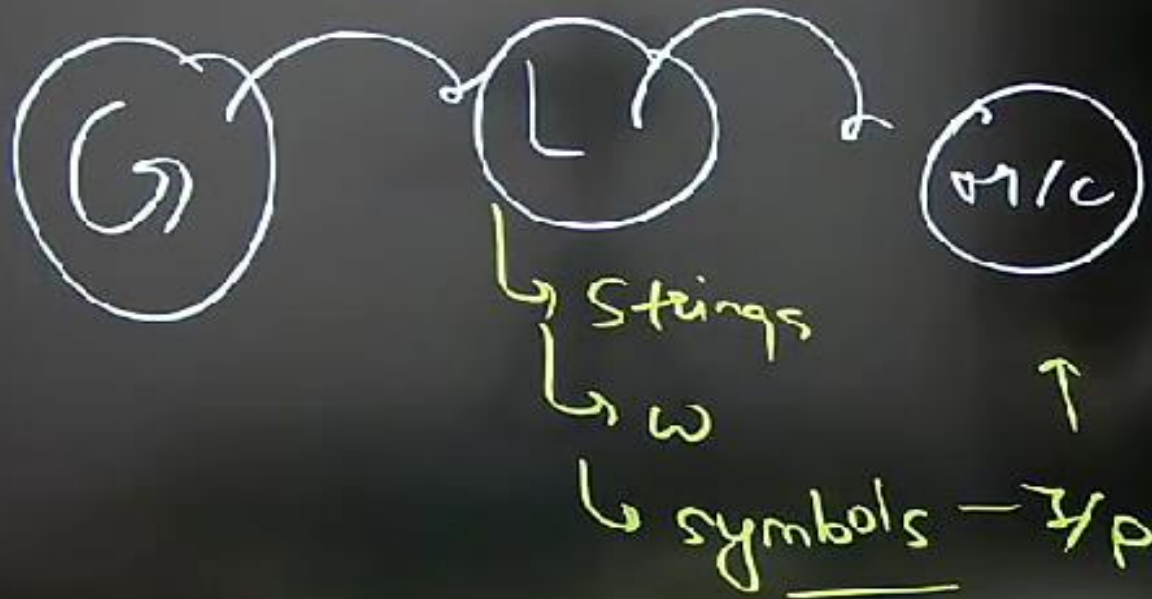
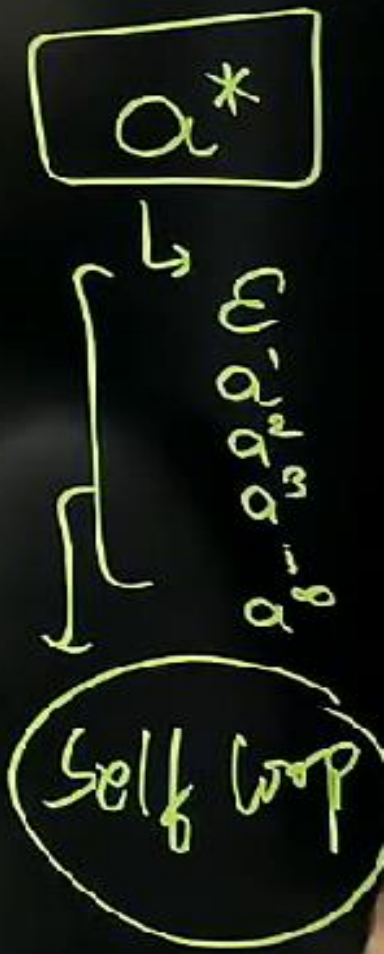
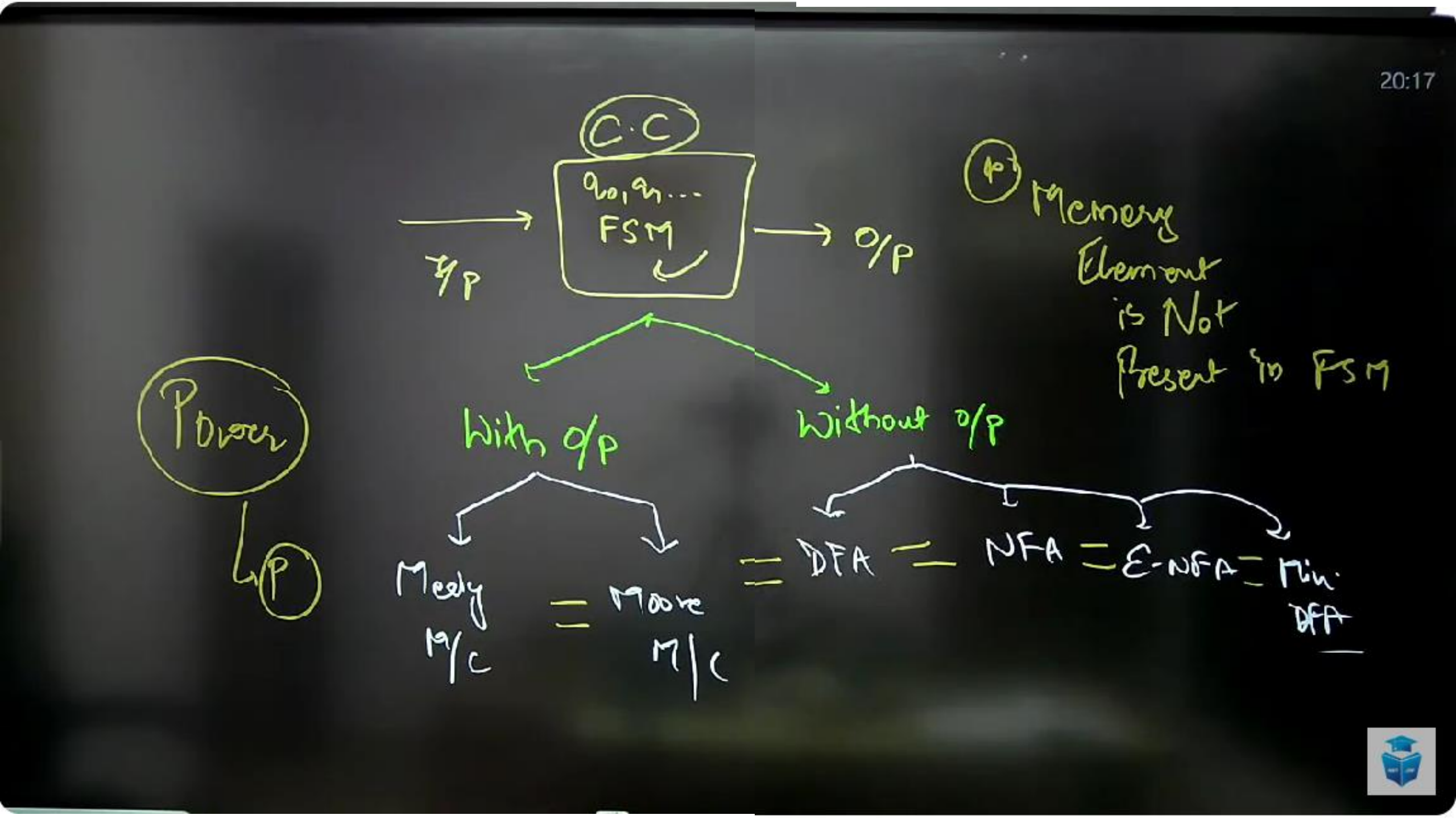
COUNT* → Finite State M/c





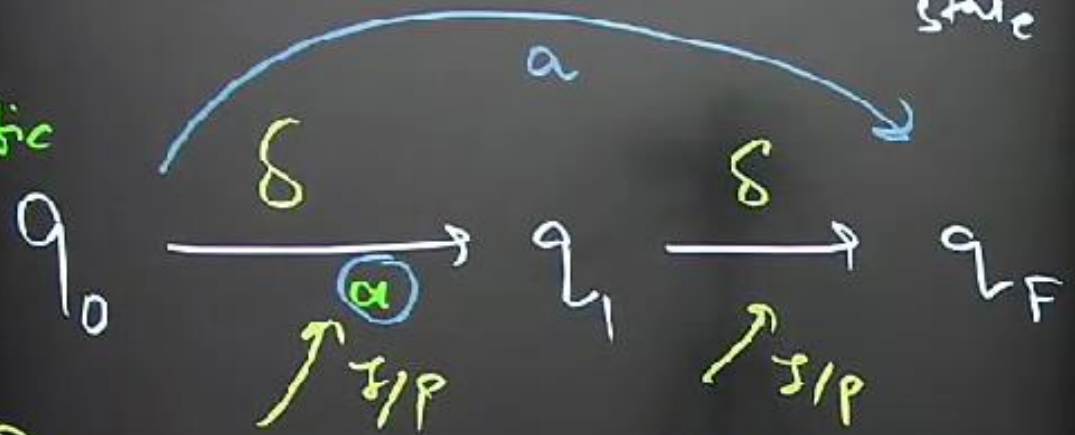

20:17
C.C
$q_0, q_1 \ldots$
FSM
I/P
O/P
(P) Memory Element is Not Present in FSM
Power
(P)
With o/p
Without o/p
Mealy M/C
=
Moore M/C
=
DFA
=
NFA
=
ε-NFA
=
Min. DFA

FSM → { q_0 , Σ , q_F / F , Q , δ }

q_0 : Initial State
Σ : alphabet
q_F / F : Final state
Q : Set of all States
δ : Transition Func.

DFA

δ : Deterministic



$\delta : Q \times \Sigma \rightarrow Q$

NFA

δ : Non-Deterministic

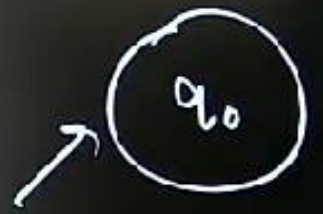
20:29

Final State

→

→ $0 \leq |F| \leq |Q|$

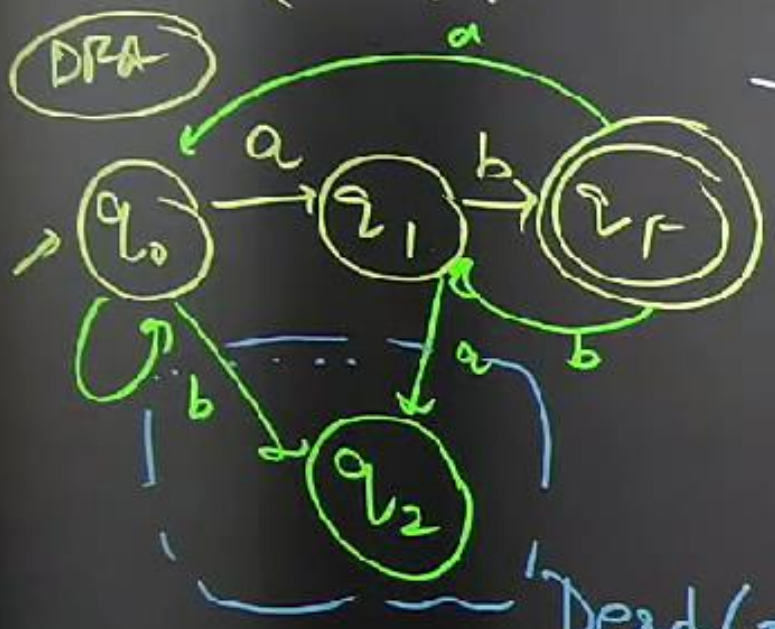
Initial State

→ 

→ There can only be one initial State

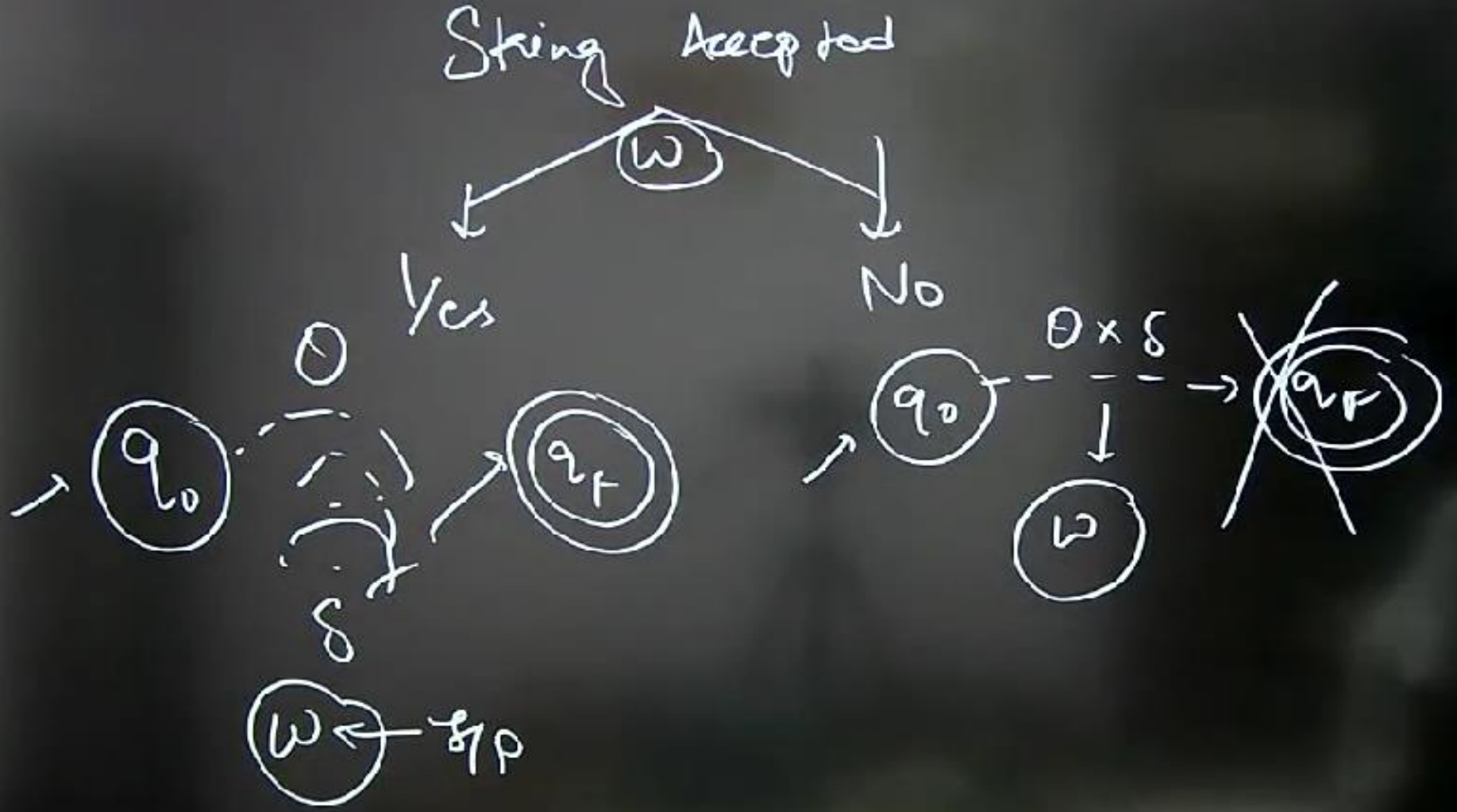
Trap State / Useless State / Dead state

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

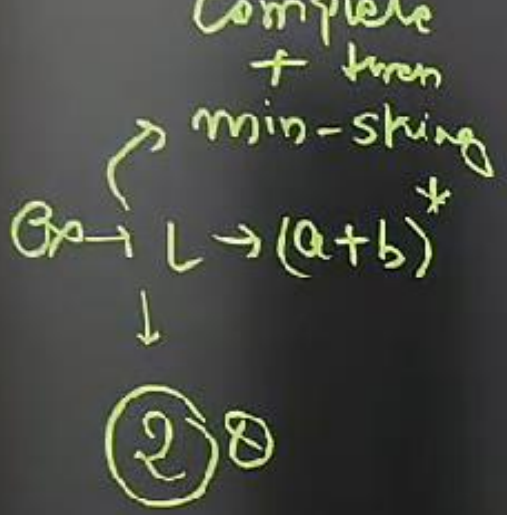


↳ State which will Never lead you to Final state

{ Jisme kabhi bhi koi Outgoing Edge Na Ho! }


String Accepted
w
Yes
No
0
δ
q_0
q_f
q_p
0 × δ
q_0
q_f
w

* Tricks to Construct any Automata *



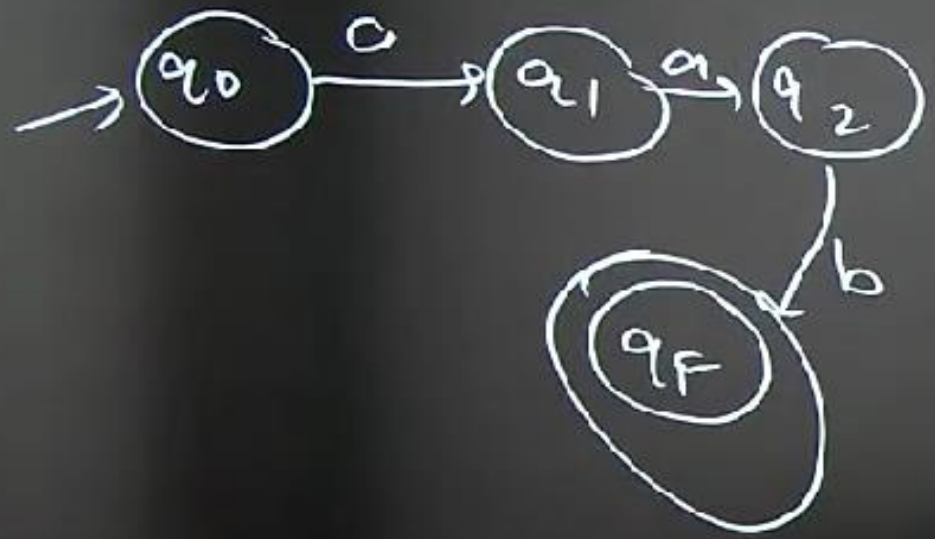
1) Move must always be precise → Min

2) If You have to Remember something then only change the state.

Otherwise Just make a loop!!

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

$\omega_1 = aab$

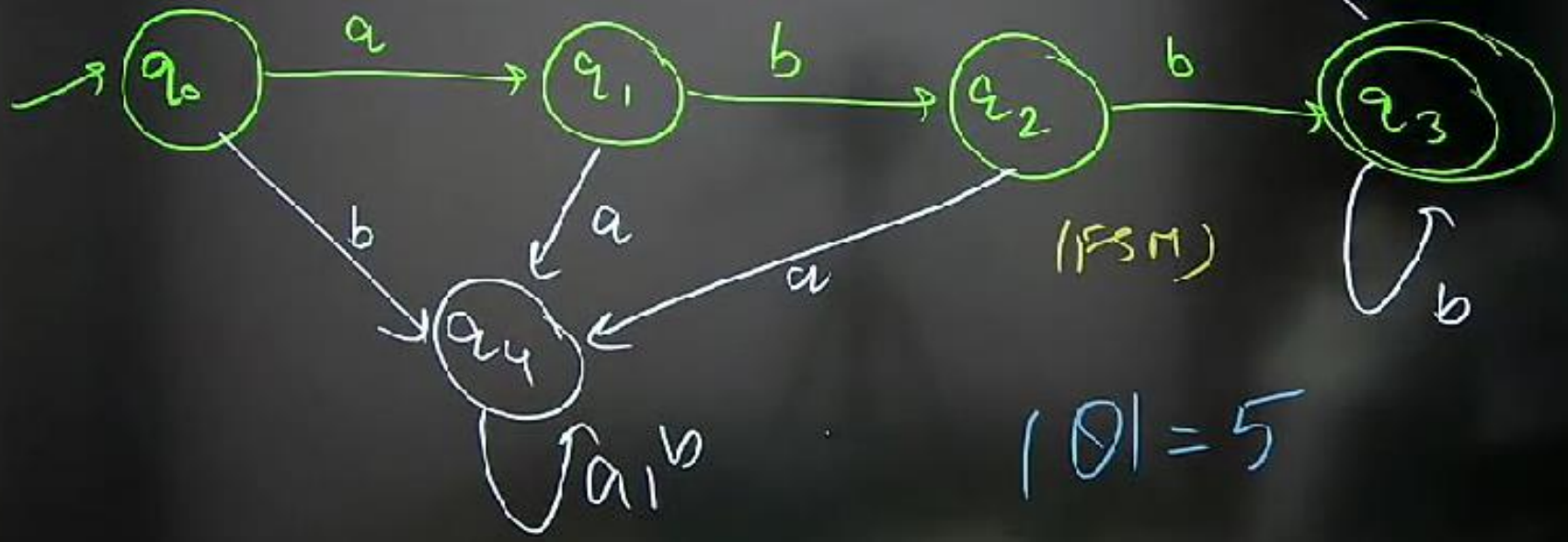


$\omega_2 = a^* b$

$\rightarrow \varepsilon, 1, 2, 3 \ldots$

Ex Starting with a b b (w)

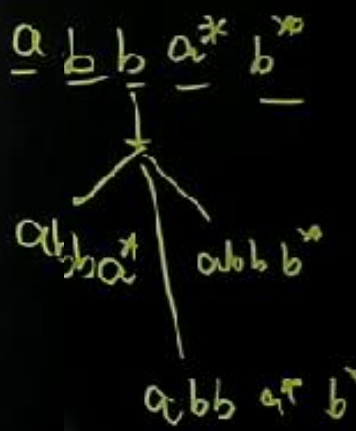
$|w| \Rightarrow 3$



$|Q| = 5$

RE

a b b a^* b^*



Note:

$|w| = n$

DFA

$|\Theta|_{max} = n+2$ ✗

$|\Theta|_{min} = n+2$ ✓

20:56

HW

All strings having
Substring is abb will be accepted.